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Introduction

Theme: Change, Challenges and Opportunities: Strategies for a Sustainable Future in Asia

The recent 2015 report by the United Nations predicted that by 2050, the world population will grow to 9.7 billion, wherein half of them reside in Asia (54.1 percent), an estimated growth of 19.9 percent from 2015. Social changes and economic shifts in Asia, coupled with recent financial crises, pose significant challenges to sustainable development and business practices in Asia and around the globe. While there is urgency on developing, planning and implementing sustainable strategies to enable and ensure productivity and viability of businesses, new opportunities are also opening up, requiring innovative strategies at all levels to ensure productivity of workers and successful business practices.

Business practices that seize new opportunities with innovations pose a great challenge for Asian firms in the 21st century. The potential growth of the region calls for close collaboration between universities, research institutes and government agencies for the advancement of new knowledge on sustainable business practices as well as on required institutional changes. Social changes accompanying the economic growth and the expansion of the financial market raise new concerns that need to be addressed at the same time. With an unprecedented new horizon opening up for the future of Asia, this conference calls for in-depth discussion to identify new sources of opportunities, by exploring new strategies that enable changes, enhance sustainable growth and meet rising challenges facing firms in Asia. Thus, the International Conference on Business, Economics and Finance (ICBEF), the first international conference organised and hosted by the School of Business and Economics of Universiti Brunei Darussalam (UBDSBE), aims to provide researchers a platform to present and exchange research findings, innovative ideas and industrial practices in the area of sustainable business development. The theme of the ICBEF, "*Change, Challenges and Opportunities: Strategies for a Sustainable Future in Asia*" is not only timely but also much needed to discuss and develop strategies to ensure productivity of organisations and successful business practices.

As part of the conference, invited Keynote and Guest Speakers shared their scholarly views on sustainable business practices and contemporary regional issues. Professor Charles Horioka, Vice-President and Research Professor at the Asian Growth Research Institute, Japan, presented a keynote address entitled 'Do people leave bequests? If so, why and does it matter?'. Professor Guler ARAS, a Professor of Finance and Accounting at Yildiz Technical University, Turkey and also the Founding Director, YTU Center for Finance, Governance & Sustainability, shared her views as Guest Speaker on the topic 'Integrated Approach to Corporate Sustainability'.

Paper presenters from UBD, practitioners in government organisations, research institutions and local businesses as well as academia from international universities shared invaluable knowledge and experience, providing insight into key sustainable practices for organisations. The conference featured over sixty presentations by speakers from fourteen countries including United Kingdom, Portugal, Pakistan, Turkey, Poland, Nigeria, Australia, China and Japan and also from neighbouring countries – Malaysia, Singapore, Thailand and Indonesia. More than one hundred and ten international and local participants attended the event. The two-day event covered various topics including Business Strategies and Entreprenuership, Managing Business, Marketing, Human Resource Management, Information Management, Islamic Finance, Accounting, Corporate Finance and Governance, Labour Economics, Financial Institutions and Market, Economics Policy and Development, Assets Management and Economics and International Economics.

The Marketing track featured four papers. The first paper looked at the growing market for luxury products, focusing on handbags in the Malaysian setting, aimed to investigate several cognitive variables on consumers' purchase intention of luxurious handbags. Another paper examined the moderating role of switching cost on consumers' behavioural intention in the banking industry. The third featured an exploratory study on Bruneians' attitude towards advertising, given a strictly regulated advertising industry. The final presenter compared service quality of public organisations and government-linked organisations in Brunei and points out specific dimensions that require attention to improve service performances of the different service providers.

In the Economics track under the theme 'Labour Economics', five papers were presented. Two papers in particular caught interest - one paper dealt with the *Markov* model approach which examined the speed of convergence in the divided sub-periods, which many found is an interesting approach. Another paper looked at different approach to sustain the growth of Brunei's economy under the falling energy prices and depletion of the natural resources.

The Accounting and Finance track featured eleven papers. Some key findings worth highlighting is about the large number of studies on oil prices that have been conducted in relation to many factors comprising both economic and non-economic variables. Some relationships make logical sense and may relate to each other in different ways. What's likely to be in focus today is some common logical relationships that deserve special emphasis. Whilst it is not a good idea to forgo non-logical relationships, it is also not productive if other contributing factors are not thoroughly explored and carefully thought out.

The Business track with the theme 'Managing Strategies' and 'Business Strategies and Entrepreneurship' forwarded some interesting ideas specifically addressing the Brunei public sector and the development of Entrepreneurial Education in Southeast Asia. One paper proposed an integrated strategy implementation model, and another shared their conceptual ideas for an organisational effectiveness model with given emphasis on Malay leadership style and knowledge sharing.

The Human Resource Management track featured five papers; two papaers on leadership, two papers on learning and development and one paper on talent management. The paper on learning and development explored customised training programs for different employees. The author concluded that there is no one size fits all optimal training method. Thus, there is the need for managers to be clear on the skill sets and competencies to cater to specific needs of the type of employees. Another paper described how creative education is designed with the National Chengchi University which shares resemblance to the setup of the Model Schools in Brunei. The program is interesting as it aims to instill creativity among students putting focus on how school/classroom are set up to the curriculum content itself.

The track in Islamic Finance featured eight papers. One paper highlighted the alarming trend of absentees and dropouts from early school education in Brunei. It calls for efforts to address this issue to enhance the country's socio-economic development and reduce the country's poverty rate. Another presenter pointed out that research on Islamic microfinance in any given jurisdiction should be broaden into the relevant country's economic policies and financial inclusion.

ICBEF Panel Discussion

Theme: Sustainable Business Practices: Opportunities and Challenges in the Asian Context

One of the highlights of the conference is a panel discussion where five prominent local and international experts shared their thoughts on: 'Sustainable business practices: Opportunities and challenges in the Asian context'. In the panel, Professor Charles Horioka, Vice-President and Research Professor at the Asian Growth Research Institute, Japan was joined by Professor Guler ARAS, a Professor of Finance and Accounting at Yildiz Technical University, Turkey and also the Founding Director, YTU Center for Finance, Governance & Sustainability, Professor Adrian Wilkinson, a Professor in Human Resources and Director of the Centre for Work, Organisation at Griffith University, Australia, Mr Soon Loo, Chief Executive Officer of Brunei Economic Development Board (BEDB), Mr Roman Zytek, an Economic Policy and Investment Adviser, and Puan Normala Othman, the Group General Manager, Sales and Marketing of Ghanim International Corporation Sdn Bhd. The panelists shared their expert knowledge on key practices for a sustainable future in Brunei to achieve Brunei Wawasan 2035, drawing insights and lessons learnt from elsewhere.

The session includes discussions on business innovation focusing particularly on niche market and the lucrative potential offered by the service industry which they believe can offer the country competitive advantage.

Business Innovation

Business innovation, as claimed by Mr Soon Loo, does not necessarily require deep technology or profound science, but the focus should be reorient towards how we can innovate business. He believed that business innovation can serve as a mean to increase sustainable competitive advantage of businesses, hence the importance of tapping into its potential.

Puan Normala Othman provided some insights into the challenges and early struggles faced by Brunei Halal Brand and discussed methods on how the company managed to establish a firm foothold in the market through product innovation. As a late bloomer, facing intense competition from neighboring countries like Singapore and Malaysia, Brunei Halal has positioned itself as a healthy food alternative which managed to penetrate international markets such as China and United Kingdom. Brunei Halal brand also benefited from its image as the most rigorous halal label observing stringent process in accordance to Syariah guidelines. It is believed that this unique brand positioning strategy could give Brunei, a small country, a large footprint on the global halal map.

Prof Charkes Horioka also shared some insights into future trends where businesses might wish to capitalise on. He cited aging population as one of the most significant social transformations of the twenty-first century, with implications on nearly all sectors of society, including labour and financial markets, the demand for goods and services, such as housing, transportation as well as family structures and intergenerational ties. In the tourism sector, changing demographics will primarily impact on the characteristics and relative importance of travel segments, with a domino effect on the types of tourism products, services and the activities they engage in. Along with challenges, demographic changes will also bring new opportunities for the tourism sector. Professor Charles believes that the tourism and service industry in Brunei should respond to this changing tends and cater to the demands of this niche group.

Talent Management and Human Resources

The discussion also highlighted the importance of talent management and human resources as one of the key drivers of organisations, however, the panelists stressed that attitude which is an important aspect of human capital, can hinder progress. As pointed out by Puan Normala, the effectiveness of human capital is not just about abilities, knowledge, skills, but also attitudes of people in an organisation.

Professor Adrian Wilkinson emphasised the need to maximize talents that organisations have at their disposal. He cited a workplace study in the United Kingdom which reveals employees considering work as equivalent to ‘being sick at home’. The assumption that can be drawn from this is that work has created a negative context when employees do not feel engaged and productive. Professor Adrian believed that one way to address this workplace issue is by listening to employees or giving them voices by creating an atmosphere in which employees feel free to voice their true thoughts and feelings about their work and the workplace—creating a culture that respects the voice of the employees. Genuinely listening to employees’ voice and acting on it makes the transformation in employee experience possible.

The session which took place on the second day of the event also has time for questions from audiences.
The conference ended with an award presentation ceremony for best papers in three disciplines: Business and Management, Accounting and Finance, and Economics. The awards were presented to Dr Tan Fee Yean from School of Business Management, College of Business, Universiti Utara Malaysia, Professor Guler Aras from Business Administration, Yildiz Technical University and Muhammad Zia Ur Rehman from Faculty of Management Sciences, International Islamic University, Islamabad, respectively. The conference is supported by Bank Islam Brunei Darussalam (BIBD), Inter House Company, Baker Hugh, Armtrix Enterprise and Brunei Halal Foods.

Table of Content

ECONOMICS SECTION

Towards the Development of an Entrepreneurial Academic Institution: A Case Study of Politeknik Brunei

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Abstract—Academic institution plays the catalytic role in changing a society and developing an economy through dynamic response of generation, dissemination and application of need based knowledge in the knowledge driven global economy. This paper focuses on how an academic institution will be entrepreneurial to exploit opportunities in the dynamics of greater environmental changes. In the ensuing days every institution irrespective of its nature, size and scope of operations must need to address the issues like growth of population, socio-demographic changes, shifts in the macro economic variables, and globalization for their survival in the competitive environment through excellence of operations **(Farsi, Imanipour, & Salamzadeh, 2012).** ***High rate of unemployment becomes one of the important challenges for the country. Entrepreneurial management is the way by which institutions can mitigate threats and seize opportunities from environmental shifts by determining and implementing sustainable strategies and enabling them through innovations in training and competitive operations, best business practices and enhancing the productivity*** **(Murithi, 2013).** ***This paper aims to explore how Politeknik Brunei can be more entrepreneurial providing its students with market responsive skills, attitudes and values through development of its infrastructure and improvement of the educational and administrative systems and standards of their operations by being technology and market oriented. For obtaining the research goals basically qualitative approach to study has been employed. The framework of the research has been developed through reviewing the existing literature. Present study has reviewed plans, policies, rules and set of regulations of the Politeknik Brunei by using content analysis and citation methods. In addition, observation method has been employed based on the experiences of the authors in the tenure of services at PB along with some unstructured interview with the teachers and administrative employees for data gathering in an informal way. Finally, collected data has been analysed by and processed and presented in the article to get the robust findings consistent with the research goals. As framework of the research some factors like ─ collective visioning process through organization wide participation, obtaining balance between the formality and informality to obtain competitive performance of the institution, applying the philosophy of open systems approach to management, developing and acquiring strategic resources and capabilities and how institution can increase the driving forces and reduce restraining forces ─ with a view to exploring the answers relevant to research framework. This is to ensure for the development of the entrepreneurial institutions having dynamic equilibrium and fulfilment of the expectation of all stakeholders including students, faculties, community, and government as well as contributing towards the development of the country. Therefore, if Politeknik Brunei obtains the dynamic equilibrium by using this framework of multidimensional factors it is expected that it could improve its competitive position by maintaining balance of interest among all the stakeholders***

I. Introduction

Academic institution plays the catalytic role in changing a society and developing an economy through dynamic response of generation, dissemination and application of need based knowledge in the knowledge driven global economy. Academic institutions are trying to become more entrepreneurial through acquiring the kind of organization that facilitates continuous change and adaptiveness (Purcarea, 2012). Operationalizing the concept of entrepreneurial institutions constrained and complicated due to disparity among academia, research and industry. According to emergent entrepreneurial paradigm academic institutions will perform the enhanced role through tripartite model of cooperation between government, corporate organizations and academic institution (Mamun, Bhuiyan, Rab, & Islam, 2000). Academic institutions need to obtain balance between the efficiency through internal performance and effectiveness through external performance. If institutions do not focus on these objectives through contributing to changing the society and decreasing unemployment as well as internal achievement by number of students, grades and accomplishment of the processes, gap will be created between the society's development demands and institutional ability to respond to that demands. Thus, it is imperative that in this competitive edge institutions should devote simultaneous attention towards internal structure, students, research and development as well as building relations with external stakeholders through innovations in management and functional activities (Peterka & Salihovic, 2012). Entrepreneurial institutions survive through adaptability in the complexity of environmental changes and dynamism. Now, academic institutions need to determine and implement the strategic options to initiate and cope up with the changes that are demanded by the contemporary society. And it is also important to focus on transition through research, education and other collaborative activities as capital and use them for generating profits by projects with the business community (Blenker, Dreisler, & Kjeldsen, 2006). For achieving sustainable growth and innovations institutions need to involve with compatible transformational strategies in the competitive markets and make adaptive it-self for the betterment of society to promote the sphere of development.

Present study aims at exploring the definition and importance of an entrepreneurial academic institution. To develop the framework of entrepreneurial academic institutions that provides the nexus with a view to producing the growth and sustenance of operations. This paper also examines the status of Politeknik Brunei regarding the achievement of an entrepreneurial academic institution by keeping consistency with its vision and mission that contributes to the development of socio-economic context of Brunei Darussalam. Find out the gap on the way of being entrepreneurial. Towards this end the paper finds out the suitable strategies, charting the implementation paths to achieve the goals for developing as an entrepreneurial institution.

II. Conceptualizing Entrepreneurial Academic Institution

The concepts of entrepreneurial academic institutions are burgeoning. Its evolution has been caused through the generations of changes in their operations, academic focus and relationship with the greater environment. **Initially**, the focus of the academic institution was on education. **In the second phase,** research gets prominence along with education as its salient function. **In the third phase**, entrepreneurship in the educational institutions relates education and research with socio-economic development focus by the involvement of the individual and organizational efforts and inter organizational collaborations in different dimensions. Based on longitudinal study of five European universities, Clark (1998) identifies five elements of entrepreneurial universitites. These are: strengthened steering core; an expanded developmental periphery; a diversified funding base; a stimulated academic heartland; and an integrated entrepreneurial culture.

Salamzadeh, Salamzadeh, & Daraei, (2011) explains entrepreneurial academic institutions from the systems approach viewpoints consisting of inputs-throughput-ouput relationship. According to their explication institutions receives and utilize different inputs ─like all kinds of resources, mission, structure, rules-regulations, policies, expectations of the stakeholders and integrated abilities of the institutions─ through the processes of teaching, research, innovation, development, acquiring and managing human and financial resources. Institutions involved in other processes, such as, networking and multioriental communication, collaboration and commercialization with a view to achieving the outputs and fulfilment of the market needs. In another study inputs, processesses and outputs are analyzed by the nine building blocks of formal, informal and internal dimensions. Through this concept entrepreneurial institutions involve with creation and dissemination of knowledges, by the individual and group research it explores the new opportunities and experiential learning gradually focuses on firms formation, technology transfer and regional development. And thereby campus innovation and intellectual resources turns towards the creation of economic results. In another study it is stated that entrepreneurial **institutions constitute three things:** institution itself becomes entrepreneurial, members of the institution ─ faculty, students and employees ─ themselves turns into the entrepreneurs and finally, structural coupling between the institution and region that follow the entrepreneurial patterns. Professor Hannon attributes entrepreneurial institutions which create, embed, encourage, support, incentivise and reward entrepreneurial mindsets and behavior (Hannon, 2013).

Entrepreneurial institution creates value through innovations which are measured by economic, social, cultural and technological way. Successful institution creates behavioral processes by entrepreneurial innovations. Values are created and executed in an enabling infrastructure to satisfy the stakeholders in energizing challenges of greater environment. In the entrerpeneurial higher academic institutions all the input factors such as teaching, research and societal engagement are involved to ensure the leadership, governance and external stakeholders participation that create continuous synergy and dynamic exhanges of values using the enterprising spirits and mindsets. Thus, in entrepreneurial higher academic institution people are empowered and socially engaged to use their potentials for being innovative, creative and enterprise oriented across the orgnizational functions and disciplines comprising the institutions.

III. Developmental Role of Academic Institution and Debates on the Issue

Growing importance of academic institutions for generating knowledge based industries and thereby development of a nation has been recognized by the policy makers of different countries. Now-a-days many universities in the world are contributing towards the industrialization of the location where these universities are positioned. The contribution of Massachusetts University is recognized for the industrial development in the Boston area and Stanford University for the Silicon Valley. Due to demise of many mechanical and electrical manufacturing industries in Central Massachusetts region economic erosion has been experiencing that were revived by Worcester Polytechnic through its stimulatory new industrial activity in information technology and biotechnology (Chakrabarti & Rice, 2004).

To enhance regional development and industrial growth academic institutions can play their roles in three ways: through activating research, promoting business enterprise development and accumulating and transferring knowledge to industries and developing qualified human resources. But due to lack of connectivity it has been found that some academic institutions face constraints in the development of the linkage with industry. So, rather than physical proximity and connectivity other factors like cognitive, organizational, social, institutional and geographical dimensions might contribute more for the industrialization of a region and augmenting the innovations (Korotka, 2015). Entrepreneurial quality of American research institution provides the US firms dominance in the basic innovations. But for being excellent quality research should be paired with scientific entrepreneurship. Quality of entrepreneurship determines the application of knowledge produced by an institution which in turn has pervasive influence on the knowledge transfer and development of the network economies.

As innovators institutions become doers of new things and make application of new ideas into practice. Make diffusion of new knowledge to scientific and professional community; teach new knowledge to the students and application of the new knowledge in the economic systems. In the process of evolution they invest their efforts to increase capabilities through learning and acquiring new knowledge, new skills and competencies. New capabilities create the sensitivity and awareness of learning. Improvements of capabilities are possible only by doing the things in way that are desired by the markets. When face difficulties in the marketplace they need to engage in learning for improving the capabilities to make rewarding the new knowledge through enhancing value by market driven approach.

Commercialization of scientific and technological knowledge produced by the educational institutions and research centres and interactions among them become the input for sustainable growth and economic development. In the development history of the US cooperation between industry and university become the unwavering and widely supported factors to exploit the opportunities and gain industrial competitiveness. The role of universities and higher academic institutions has been changing from knowledge conservators to new knowledge exploiters that cause economic growth and expansion by the progressive shift of human capital development. And knowledge becomes invisible product and powerful single element that creates the pervasive influence through collaboration and interaction among the academic institutions and commercial sectors supported by the favourable government policies for creating a conducive competitive environment.

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Archetypical manifestations of commercialization of entrepreneurial institutions are realized through patenting, licensing and research collaboration. It gets through the institutionalization by the formation of spin off companies. It is the more suitable long-term strategy for transfer of technology and start-up of the firms by academic institutions. Some authors critically evaluated the effectiveness of this strategy and coined out that spin-offs appeared to be more durable compared to other start-up options especially in the high-technology sectors. Sometimes cost of running technology transfer outweigh the returns from it (Mowery, Nelson, Sampat, & Zeidonis, 2001; Innovation, 2008). It might be due to the lack of trained staff and limited capacity of the institutions in transferring the technology or for shortage of budgets. Sometimes, it has been found that institutions originating high-tech inventions fail due to inability in identifying the market niche, creating the market or short of skills in preparing the investors friendly business plan (Swamidass & Vulasa, 2009). Because, marketing is a challenging task.

IV. Entrepreneurial Academic Institution: Searching for and Development of a Framework

What would be the pathways or framework by which institutions will transform them or be entrepreneurial?

In this direction Clark, (1998) identified five elements that make the institution entrepreneurial. Every institution should have ***strong capacity to steer them*** with superior managerial ability and motivation to serve the society. Institutions that are ambitious and concerned about their marginality can strengthen them with the strategies of reorienting their programmatic capabilities, operationally to reconcile the new managerial values. Keeping pace with the societal demands these institutions ***promote a new periphery and paradigm*** through creativity and innovations with flexibility and initiatives. They also develop an adaptive nexus with internal departments and outside the world. With these initiatives institutions are involved with knowledge transfer, industrial contact, intellectual property development, fundraising and other alumni affairs along with other paradigmatic shifts. For sustainability of operations every institution needs to have strong financial base with discretionary funding ability. ***Innovations of diversified funding sources*** like stretching the funds from research activities, collaborating with business organizations for funding through different services activities, creating intellectual properties and contracting with emerging entrepreneurs group, creating multi-oriental nexus with different government entities and creating other non-traditional options for generating funds through students services, alumni association and social services to the community where the institution is operating may provide the differential opportunities and help for a significant upward move. Obtaining significant academic transformation through diversifying the academic programs and research activities provides modified beliefs systems with ***expanded and stimulated entrepreneurial hub of education***. In the hub of the educational institutions it creates, embraces and diffuses ***change oriented beliefs and work culture*** which is started with the ideas and ultimately becomes institution wide culture through the interaction of the practices. By the continuity of the interactions and integration of the structures, processes and procedures, institutional systems are transformed and expressed through the distinctive perspective. As per the authors' assumption integrated application of this model leads to the transformation of the values and beliefs in distinctive ways that provide long term sustainable presence of the institution.

Bronstein & Reihlen, (2014) after conducting 27 cases of entrepreneurial universities by using qualitative methods of meta-syntesis of empirical literature found there is no single best model for the entrepreneurial university. Rather, all entrepreneurial universities are classified into four archetypes as: *the 'Research-preneurial' or research driven; 'Technipreneurial' or industry driven; 'Inno-preneurial' or service innovation driven; and the 'Commerce-preneurial' or knowledge commercialization driven.* However, all the universities are characterized by different structures, strategies and resources. By using inductive analysis in their study, 176 coded attributes are generalized into 32 general organizational elements and grouped into five internal and two external dimensions. Each of the archetypes has its own ─ ***internal:*** structure, financial resources, human resources, tangibles and intangibles and ***external:*** environmental and contingency ─ dimensions.

Mission of the ***research-preneurial or research driven institution*** is to broaden the knowledge and academic excellence supported by public policies, socio cultural attitudes and participatory governance structure. Here, faculty members are adept in research, mostly they conduct project based applied research occasionally in cooperation with government or industries for achieving the highest academic and research standards. ***Techni-preneurial institutions*** are experts in applied sciences served the surrounding by transfer of specialized knowledge more specifically technical knowledge contributes towards the regional economic development by the incremental innovations and technical cooperation using formal and informal networks. ***Inno-preneurial institutions*** are service oriented to pursue knowledge innovations for customer oriented entrepreneurial endeavours. These types of institutions are being adaptive to the market and surroundings by involving in novel internal changes and structural flexibility and allowing autonomy in the governance practices. Generally, interdisciplinary cooperation and problem focused exercises with varied structures like incubators, intellectual property and knowledge transfer offices to foster the service driven innovations. The aims of ***commerce-preneurial institutions*** are commercializing the knowledge created from sector specific high-tech research and disruptive innovations. It develops marketable products and service

es, stimulates high-tech start-up venturing by applied research and spin-off strategies of enterprise initiation. The steering core of these institutions are providing an autonomous and empowered governance structure that creates excellence in knowledge-intensive professional services like consultancy, mentoring, institutional advisory services, project management and so on. Meta-synthesis depicts that institutional archetype appropriate for a region and strategies and structures for appropriate for specific archetypes are determined by some influences, such as, organizational heritage, legal policies and framework, regional industrial base, socio-political attitudes and competitiveness of the higher education markets.

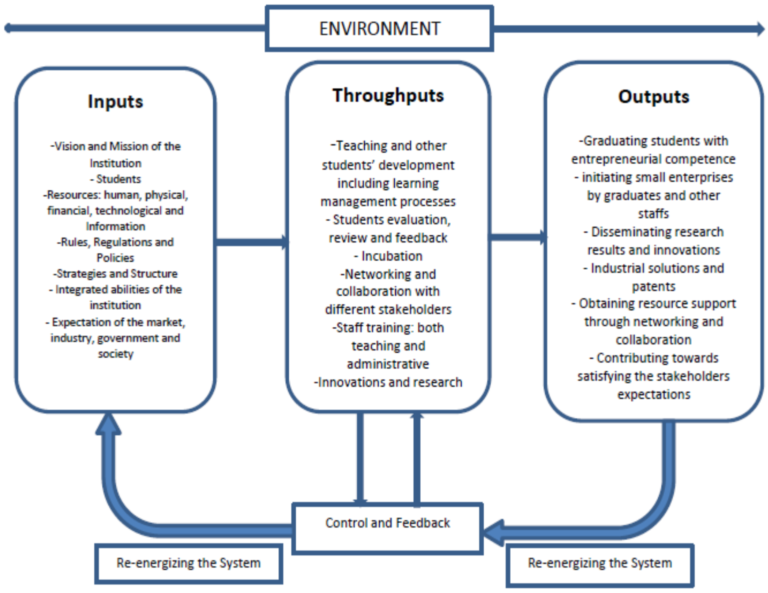
A guiding framework for entrepreneurial universities or higher academic universities or higher academic institution has been developed by European Commission and Organization for Economic Cooperation and Development (OECD) for the European Higher Academic Institutions to inspire the effective management and institutional and cultural changes. This framework has been designed as self-assessment tool to help the institutions identify their current situation and to determine potential areas of actions considering the local and national environment. According to this framework seven areas have been identified to assess the status of an academic institution. These are:

- Leadership and governance,
- Organizational capacity, people and incentives,
- Entrepreneurship development in teaching and learning,
- Pathways for entrepreneurs,
- University / business external relationship for knowledge exchange,
- The entrepreneurial university as an internationalized institution,
- Measuring the impact of the entrepreneurial university.

By using this framework institution can improve its concepts and practices through innovation in different operational areas: research, knowledge exchange, teaching and learning, governance and external relations. Here, academic institutions and businesses bring together to develop the mechanisms for cooperation for transferring and sharing knowledge. Good governance and strong leadership are crucial to the development of the entrepreneurial culture (EC & OECD, 2012).

Rather than being isolated an entrepreneurial institution will be linked to the industry and society in order to identify and meet their needs through teaching entrepreneurial skills in higher education to facilitate the employment generation objectives. Here, entrepreneurial people and enterprises are associated with and supported by providing education and training, research, need based consultancies, product development, marketing and finance, access to the laboratory, information and other kinds of services for the creation of value. Entrepreneurship development is an integrated effort containing series of events with multi step academic, administrative and developmental processes by the involvement of dynamic leadership and effective governance systems complying with the demands of society and environmental forces (Azma, Alizadeh Majd, & Torki, 2015). In another study entrepreneurial institution has been explicated as a strategic approach linking decision making processes, stakeholders' needs and interests as well as assuming long term responsibility to deal with the opportunities and challenges. In the evolutionary processes of the knowledge based economy organic relationships and interactions among institutions, industry, government and society are maintained (Raceanu, 2016). However, organic characteristics can be maintained effectively by applying the concepts of Open Systems Approach to input-throughput-output relationship having dynamic feed-back and continuous surveillance on the macro and global environment. By considering the above review of the literature on entrepreneurial academic institutions and its developmental processes following framework can be proposed to study the case of Politeknik Brunei (PB).

Figure-1: A Framework for Application of the Systems Approach to Development of the Entrepreneurial Institution



So, from the Figure -1 it is evident that development of the entrepreneurial institution is dependent on the combination and integration of various sub-systems into the overall system of the institution. Institution is continuously receiving various kinds of inputs from the environment, transforms them and exporting the outputs again to the environment. Systems are getting into the new shape and updated continuously by maintaining and sustaining interactive relationships with specific environmental factors. After completing desired cycles of the interaction and performance certain outputs are produced and get review and feedback for re-energizing the system and interacting among the subsystems in the next phase of the operations.

V. Education Policy of Brunei Darussalam and Entrepreneurial Insight of PB

Under the vision of developing a peaceful and prosperous nation Ministry of Education Brunei Darussalam (MOEBD) has framed its mission to provide holistic education for exploiting full potentials of the students including marketable and valuable entrepreneurial attributes that provides lifelong learning orientation. In the strategic map of the MOEBD development of values and norms like teaching and learning excellence with professionalism and accountability, achievement motivation, efficiency, innovativeness and fostering the culture of continuous improvement and innovations have been emphasized. Education policy has been framed for comprehensive development of the ICT skills and continuous benchmarking of international best practices in education. Thus, to comply with needs for developing entrepreneurial institutions PB has the optimistic stance to develop systems and processes that focus on the development of values driven individuals having the entrepreneurial mind-sets and performance. Accordingly, all the activities like teaching and learning, curriculum design, development and execution, students' evaluation and performance appraisal and other co-curricular activities are tailored to meet the stakeholders' needs and adaptability with the change requirements to stimulate the creative ability and innovative acumen of the students.

VI. Genesis on the Politeknik Brunei and Its Distinctiveness

Politeknik Brunei (PB) starts its operations on 30th of January 2012 to offer Advanced Diploma Programmes. It was established to provide training, promote and exchange knowledge in engineering, technology, sciences, business and other relevant areas. After the inception it has been growing in number of students and academic programmes with sagacious plan and effective utilization of its resources. Guided by its participative and collective vision of being ***'a reputable polytechnic producing innovative, skilful and marketable graduates'*** and consistent mission, ***'to equip students with sustainable skills through holistic and quality education in a supportive teaching and learning environment'*** PB has been continuing its operations through implementing the collaborative goals and strategic plans in response to the socio economic demands of Negara Brunei Darussalam (Politeknik Brunei, 2014).

To cater to the needs of human resources development and complying with National Education Systems for the 21st Century or Sistem Pendidikan Negara Abad ke-21(SPN21) that emphasized on changing structure of education system, curriculum and assessment as well as transforming the technical education, PB come into existence to supply skilled professional through systematic comprehensive set of qualifications and training on different technical and technological trades to enhance the skills and competence of the students. It is also the first polytechnic in Brunei established by the consent of His Majesty in his Titah during the Teachers' Day Celebration in 2008 to mitigate the needs of technically skilled human resources. This is to ensure the quality of life and to achieve dynamic as well as sustainable economy, which is envisioned in the National Development Plan and National Vision 2035.

VII. Distinctiveness in Curriculum Design, Review and Development

To make internationalized its programmes PB focuses on dynamism in designing, implementing, reviewing and development of curriculum. Internationally followed Systematic Curriculum and Instructional Development (SCID) model includes five phases ─ Analysis, Design, Development, Implementation and Evaluation ─ are applied in the curriculum design, review and development processes of PB. According to this model participation of all concerned like teaching and administrative staffs, programmes development and evaluation committee, representative from industry in the program advisory committee and sometimes expert members from other outside organization including from abroad may participate in the curriculum design and development of the institution. To extend the horizon of knowledge, skills and ability of the students PB offers some enrichment modules to the students to make diversified their level of achievement and make them market competent graduates to serve the actual needs of the corporate world as per as Brunei Darussalam perspective and global demands. Curriculum review for improvement is the continuous process in PB which gives the opportunity to align curriculum with the contemporary needs of corporate world. Presently, entrepreneurship module has been integrated with the overall syllabuses of the Level 5 Diploma programmes in PB, which provides basic entrepreneurial orientation on entrepreneurship and small enterprise development to the students. Under School of Business one major area is offered, Diploma in Business Studies (Entrepreneurship), to focus on needs for initiating business enterprises by graduated students after completing their Diploma Program rather than running after the job by considering the limited employment opportunities in the job market.

VIII. Learning Management System (LMS) of PB

LMS has been considered as one of the potent instruments for facilitating the effective communication among the participants in the learning processes of the academic institutions. Application of LMS has been showing remarkable increase in academic institutions throughout the world. Universities and colleges of USA, Europe, Australia, Africa and Asia are showing significant growth of adopting e-learning system to make the learning management system effective, efficient, dynamic and catalytic. The demand of the e-learning and other related products and services have been expanding in the academic and non-academic corporate sectors due to their easy access, effectiveness, engaging and interactive characteristics and flexible as well as diversified usability through the smartphones, tablets and other mobile devices and wearable technology (DOCEBO, 2016). It enables delivery and wide sharing of educational resources anywhere, anytime and just time by using computer networks and electronic devices through internet access. Under the blended teaching and learning philosophy PB use LMS platform equipped with state of art technology for effective interactions between teachers and students through information supports and technology based communication for exchange of knowledge and sharing of ideas to continuously better the systems of learning. Muliadi (2016) states the benefits of LMS in PB: creates learning contents and activities in flexible and powerful ways, provides interactive forums and collaboration between students' and teachers and maintains consistency of information through a uniform interface. However, outside of the traditional learning environment mobile learning has gained popularity provides contents to the learners by considering their own context in an adaptive way that is accessed through their mobile devices. LMS provides the best learning forum for creating, managing and delivering the contents in an effective and artisanal ways and gradually leads toward the paradigm shift in learning management systems to make it more learners oriented. As LMS provides independence of learning by the learners using their own ways it enhances the motivation to learn and creates entrepreneurism and spirit of learning among the learners. And learners can create the contents, contexts and processes by autonomous endeavours, interactions and inquisitiveness.

IX. Team Teaching and Embracing Diversity in Teaching Methods

Team teaching is one of the innovative methods of teaching whereby teachers together involve in designing syllabus, preparing lesson plan, teaching students and evaluating results of the students. It provides the opportunity to learn from different teaching styles, ideas, perspectives and experiences. It is considered as one of the creative and thoughtful mechanisms to foster the dynamism through students centered learning in a particular module whereby they can get relatively best blends of satisfaction. PB provides the faculty members autonomy in designing and executing syllabuses, teaching the students, evaluating them by using blended methods of teaching. To teach, different modules follow different methods in an integrated manner under the purview of the flexible institutional structure whereby students can maximize their learning using interactive processes.

Team teaching ensures collaborations among the faculty members, although, some studies argue that collaborative culture takes long time to develop, requires trust and mutual understanding that derives from day to day interactions and long-term relationship among the participants which is really difficult to achieve and problematic. Teacher isolation is one of the dominant impediments. Again, team teaching can contribute little unless teachers observe, help and interact with each other willingly (Lieberman, 1995). Even, sometimes when all the teachers in a team are not alike in terms of ability, knowledge, performance and complying with the decisions in regards to execution of the module it creates inconsistency in achieving the objectives.

In spite of having some criticisms team teaching is important for the institution to make the faculty members more participative, dynamic and entrepreneurial, so that, each faculty can reap benefits from others maximally through effective interactions. Factors create the inconsistency also has to be addressed and solved by applying the proper coordination mechanism and adaptability. Finally, in the attainment of the maximum results it is better to have a best blending of teachers having similarity in background, knowledge, expertizes and experiences.
Another option is that along with team teaching some other teaching techniques, such as, case study, group discussion, short visit of the industrial enterprises, preparing assignment, internship, conducting interactive sessions and dialogue among the faculty members or between the teachers and industry players or relevant government representatives etc. will provide the best blending of teaching-learning practices that add to the process of value creation. However, application of all these options may provide flexibility to the institution to achieve best possible outputs in the open systems approach.

X. Multilevel Control Mechanism and Facilitating Human Resource Development

An institution is attributed with the excellence of performance when its functions are done purposively using proper control mechanism by balancing the interest of all internal and external stakeholders and maintaining quality in different levels of operations. PB is using effective administrative systems and control mechanisms throughout different functional levels specially the teaching and learning processes as well as performance evaluation of the students, teachers and staffs. The application of coherent systems in all the functional levels generates feedback to reorient the processes through consultation, modification, changes and adaptation. PB applies different administrative and coordination system to perform all functional operations effectively in the administrative departments. In its various academic schools controls and co-ordinations are applied in different levels too, such as, in vertical levels different positions among the faculties are assigned to coordinate and control the academic activities properly in addition to their teaching responsibilities. The head and assistant head of schools, programme leaders, group coordinators, module coordinators, research coordinators all are working as teams coherently to attain the goals of the institution.

In its continuous improvement process PB emphasized on continuous development of its human resources throughout the institution. Towards this end it provides training facilities to its faculty members and administrative employees both internally and externally for their continuous professional development and makes their skills adaptive and dynamic. Even, training facilities are provided at home and abroad outside the PB. After training the knowledge and skills are shared through presentation sessions to relevant participants in PB and applied the same for performance improvement through their works.

XI. Quality Assurance Programme and Globalization of Education

PB strives to get time based momentum in the movement of the total quality management. To implement its vision and achieve excellence in teaching, learning and administration PB is highly committed to assure and improve quality which is again demonstrated by its movement to design and implement a comprehensive ISO 9001:2015 Quality Management System (QMS). Under the quality assurance department quality assurance officers and quality controllers are responsible to attain the predesigned quality standards in different functional areas including academic activities. Obtaining certification will serve as endorsement of quality in teaching and learning systems, approaches and practices as compared to the prevalent international standards.

In the process of achieving global competitiveness PB has the global education programmes that facilitate overseas internship for students and exchange programmes for the staffs' development. Centre for Student Development and Innovation (CSDI) serves as linking pin to make nexus among the various institutions locally and globally. To build its positive corporate image and keep abreast with the job markets PB continues with the quality movements having global focus and emphasizing on regular communication and dissemination of desired information to all its stakeholders. However, quality consciousness along with global orientation and intends to build the corporate image pave the way of being entrepreneurial by the PB.

XII. Incubation Centre at PB

To support the potential students for Entrepreneurship Development School of Business at PB has got the approval to initiate Incubation Centre. Business Incubation Centre provides supports, such as, allocating production rooms, equipment, and organizational, legal, financial, advisory as well as informative services for small business start-up. Initially potential students are selected from the entrepreneurship major area and then placed them in incubators for grooming with the entrepreneurial skills through different need based training, marketing, consulting, and management services[1]. International Business Innovation Association (INBIA), a global association represented by 2200 entrepreneurship support organizations throughout the world extending the networks over 62 countries includes following services for incubators: providing management guidance, technical assistance and consulting, access to appropriate rental space and flexible leases, sharing business services and equipment, technology support services and assistance in obtaining finance etcetera[2]. Generally, business incubation programmes assists new business owners to get access to resources and support services that they need to grow their enterprises successfully and thereby they are improving struggling economies, creating jobs and encouraging innovation. The main goals of these programmes are to develop sustainable business enterprises through accelerating development of entrepreneurial companies and making them financially viable and freestanding by an array of business support services and resources (Lewis, Anderson, & Molnar, 2011). However, PB incubation centre has been approved to assist the potential students in the School of Business especially in the mainstream area of entrepreneurship through providing need based consultancy and support services to make fruition of their ideas into the successful business ventures. PB incubation centre will operate with the collaboration of Entrepreneurship Village, Darussalam Enterprise and some industry players of Brunei Darussalam. Entrepreneurship Village will assist the budding entrepreneurs through consultation and industry players provide the mentorship services and necessary training to groom them up and their ideas into the viable economic venture.

[1] Business Incubator Model: Business Road Map 2020, USAID Macro Economic Project Report.

[2] Source: http://www.nbia.org/resource_library/what_is/index.php

XIII. PB Enterprise as Networking and Training Centre

PB enterprise has been established based on Cube Store Concept (CSC) ─ renting out to vendors selling foods and beverages, with a view to realizing the dream of entrepreneurship development in PB. By using CSC, it provides open opportunities to the PB family members to operate in the entrepreneurship domain and start their enterprise by innovative business ideas in food and beverage sector. From the revenue generated, profit sharing will be in the following manner: Politeknik Brunei 70%, PB Enterprise 20% and School of Business 10%. However, as SBS teachers and students are directly involved here through investing collective funds and execution of the enterprise, they can exercise their creative abilities in different dimensions: initiation, execution, operations, finance, marketing, administration and training etc. throughout the enterprise development and growth processes. Even, success has been evidenced with few months' operations of collective venture by the team performance of SBS members.

XIV. Leadership Dynamics as Driving and Balancing Factors

According to Warner Burke, (1994) leadership plays the very important role to change the individual and organizational performance by making the right coordination among various components of the organization, like, mission and strategy, structure, work units, systems, culture, tasks and structure; individual skills, values, needs and motivation. Another model explicated that leadership is the central factor to bring appropriate balance among other factors through interaction, by choosing between the formality and informality which one is best for the organization. Leader as a kingpin make balance among the purpose, structure, relationship and rewards through helpful mechanism, that is, right coordination. So, through helpful mechanism leader findout the best way to manage the organization by closing gap between what is happening and what is supposed to be happened to attain the organizational goals in the dynamics of environmental changes by the adaptability (Weisbord, 1983). Leaders role is vital to the development and acquiring of strategic resources and capabilities and utilizing them properly for betterment of the institutional performance to make it more competitive. Leadership practices in PB are really a right combination of check and balance that provide the cycles of growth and development by the involvement of different members in the various levels of administration. Under the dynamic leadership of

Director, Assistant Director and all the administrative heads: in the academic schools and non-academic administrative departments are operating through the networking systems by using the concepts of management by objectives. So, everyone is linked in the administrative chain to provide the inputs and get feedback inter alia to contribute to the overall development of the institutions from top to the bottom and again by the bottom-up systems of opinion sharing, forums, team meeting and administration. Thus, leadership in PB is playing interactive and dynamic role to create the changes through flexibility and autonomy among the people of the organization and by effective helpful mechanism it is providing right control to bring all factors in a desired level of performance.

XV. Driving Forces to Make the PB Entrepreneurial

From the historical genesis of PB and analysis of its entrepreneurial insight it is demonstrated that there are many driving forces under the purview of its macro, intermediary and operational environment. However, all these forces need to be identified in time and utilized properly by maintaining consistency with the specificity of the stakeholders' demands. To be entrepreneurial the institution needs to be market oriented and very specific in designing and implementing all its programmes by making nexus with the change management strategies and orientation. The notable driving forces of PB are as follows:

1. Under the National Development Plan and National Vision 2035, PB is complying with Sistem Pendidikan Negara Abad ke-21(SPN21) and accordingly framed its five year development plan from 2015 to 2020 with the philosophy of holistic education and lifelong learning to develop the students with marketable and sustainable skills.
2. Its learning management systems designed with state of the art technology is user friendly and flexible which empowers the learners and provides interactive learning environment. Team teaching and embracing diversity in teaching methods creates scope of brainstorming, collaboration among the faculty members, idea generation, innovation and finally improvement in the teaching methods and practices. Ensuring participation of learners in teaching is more supportive of developing enterprising spirit among them which is one of the salient features of teaching practices in PB.

3. PB is more adaptive in designing, reviewing and developing the curriculum. Now entrepreneurship development module has been integrated in almost all the diploma programmes offered by PB which, in fact, will contribute in the development of the entrepreneurial mind-set among the students. In addition one separate major area in the SBS is offered on entrepreneurship development. So, its sagacious outlook and future enterprising alignment as well as dynamism in curriculum management provide wide angle future vision in this perspective.

4. Control and coordination throughout the organization with a view to attaining the quality in teaching and other administrative functions are some other commendable characteristics that give the PB distinctiveness in the competitive market. To ensure quality PB is highly committed to design and implement a comprehensive ISO 9001:2015 Quality Management System (QMS) for obtaining certification. Again it creates favourable infrastructure for continuous professional development of the teachers and administrative staffs. All these bear the testimony of institutional sagacity and open systems relationship with the greater environment.

5. Now-a-days it is argued that incubation process is one of the most effective methods of teaching entrepreneurship in the academic institutions. International Business Innovation Association (INBIA), a global association represented by 2200 entrepreneurship support organizations throughout the world extending the networks over 62 countries, which is focusing on teaching entrepreneurship through incubation centre. The more sanguine is that PB enterprise is started with the participation of the PB fund and collective funds of SBS where all participants from students, teachers and staffs can obtain the learning by doing entrepreneurship and exercise their creative abilities in different dimensions throughout the enterprise development and growth processes.

6. However, leadership is the only factor that creates energy and motivation to other factors to be coherent in designing and implementing the collective vision and achieving the overall goals of the institution. Leaders bring alignment among strategy, structure, technology, people and other kinds of resources. Basically, PB is rich with this dynamic leadership not as a factor only but also as a process ensures performance improvement throughout the organization and facilitates the application of management by objectives principles.

XVI. Analysis of the Problems, Suggestions and Recommendations

Despite the fact that PB has some positive features, still has a long way to go, to cherish its dream to be entrepreneurial in competitive market and as per as institution concerned. Some factors are really hindering the entrepreneurial perspectives in its total environmental and operational dominion. More specifically, following factors encumbers the process that need to be addressed properly to exploit the expected benefits of entrepreneurism:

1. Although PB is committed to be entrepreneurial development its overall infrastructure is still lagging behind in achieving this goal. It is continuously achieving progress in academic achievement but as per as research, needs initiatives to solve the corporate and societal problems and to provide the solutions for improvement in the business practices.

2. Collaboration with the industry players are also not as the expected level. For enhancing knowledge continuous participation of the industry players are foremost. Relationship with them can be built in a different way like curriculum design, students' internship, idea sharing and conference, conducting some project works etc. Even by extending the relationship through providing need based services, consultancy, product development, assisting in enhancing human skills and capacity, providing management services, helping promotion and marketing and providing functional training to the corporate partners may generate more revenues and strengthen the corporate relationship that can be used to proliferate the entrepreneurial movement in PB .

3. As per as entrepreneurial mind-set all the schools are not similar. Although, recently module on entrepreneurship has been integrated in almost all the schools but School of Science and Engineering (SSE) and School of Information and Communication Technology (SICT) are not taking entrepreneurship as it is treated in the School of Business. Recently, along with SBS some teachers of SSE and SICT have been assigned for training at Livewire Brunei on ─ entrepreneurship: idea development and business planning ─ but still it is in rudimentary stage to develop the mind-set of entrepreneurship. Even in the SBS, compared to other major areas of study in entrepreneurship major, students' response are dismal which reflects that even at the national level mind-set regarding entrepreneurship is not up to the mark. So, for inculcating the values of entrepreneurship more efforts and programmes are required to design and implement at the micro level of PB and mass awareness programmes at macro and national level.

4. In the incubation centre of PB, the participants are provided with some soft services, mentoring and need based counselling with the partnership of some industry players in some cases but lagging the hard infrastructure as there is no proper place for incubation. So, it would be worthwhile to arrange place for students' incubation and their work centre.

5. It has already been discussed that multilevel control and coordination systems provide better results and performance improvement but sometimes vertical organization delayed the process in performing the jobs and because of more layers it might lengthen the operational procedure. So, innovations in allowing more autonomy at the individual, departments or school levels by applying some implicit control mechanisms may generate more possibilities of soft infrastructure development for idea generation, process simplification, minimizing the utilization of resources, reducing the cost and finally expediting the entrepreneurship development objectives.
6. Employees of different academic and administrative levels may be provided with the opportunities for sharing brilliant ideas intermittently on any issue that may enhance the possibilities of overall development more specifically entrepreneurship development in the institution. For this purpose weekly one day can be opened in a formal way to the members of PB to share their ideas.

7. In addition, the institution may find out more avenues continuously to innovate the partnership possibilities wherever is possible with some government, private, and / or social organizations that may contribute through creating surpluses by curriculum and service innovation, functional improvement, synergy in cooperation, marketing and serving the stakeholders interest in anyway or any form.

XVII. CONCLUSION

With the passage of changing the environment now it is hard for any organization to survive through competitiveness and innovations of the operational strategies with the traditional operational activities. Academic institutions are not exception to that, so, present study explores how PB as an academic institution for providing technical education can be entrepreneurial by facing all the challenges from the greater environment. The study found many of the positive attributes possessed by PB. These are commitment towards the government policies, curriculum design and development, quality in education, control and coordination mechanism along with some direct entrepreneurial intervention such as incubation centre and establishment of the PB enterprise etc. Some problem areas have been identified the addressing of which may provide more extended opportunities for harnessing the objectives to make PB more entrepreneurial. The notable suggestions are improvement of the hard and soft infrastructure, innovating research avenues to solve the corporate or social problems, finding out meaningful and innovative ways to make collaboration with industry players and / or any government, non-government or social organizations, allowing more autonomy in the organization to ensure participation of the employees for generating ideas, improvement of the services, functional operations and best way to fulfil the stakeholders interest. It is expected that if all these suggestions are implemented, PB will be entrepreneurial gradually by improving the nexus with greater environment through open systems approach and maintaining balance in the organization by upholding driving forces and minimizing restraining forces through continuous interventions of adaptability.

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Competitive Advantage Strategy Creation Through Innovation, Entreprenuership and Market Orientation: Empirical studies on Small and Medium Entreprises (SMEs) in Indonesia

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Abstract- Indonesian SMEs are the most among the ASEAN countries and continued to grow up about 57.9 million businesses. Currently the population in productive age more than the number of jobs available in Indonesia. This triggers the creation of opportunities to open a new business. Most new businesses classified as Micro, Small and Medium Enterprises (SMEs) industrial sector businesses. Indonesian SMEs has high durability and can sustain the country's economy, even as the global financial crisis, SMEs have become the backbone of Indonesia and ASEAN the economy, because 88.8 to 99.9% of ASEAN SMEs is established with 51,7% to 97.2% employment reaching. However, Indonesian SMEs still has many weaknesses, such as a lack of ability to adapt to the effects of the strategic environment, less nimble in finding business opportunities, lack of creativity and innovation in anticipating the challenges of business. Thus, the most internal factors of Indonesia SMEs also is a challenging that must find a solution, namely the lack of managerial ability and skill lack of access to information technology, capital, and market access. Internal weakness is due in part of the human resources of SMEs entrepreneurs are less qualified to anticipate the problems being faced. A competitive advantage for SMEs can be obtained by observing the superior value for customers, culture, and climate to bring any improvement in efficiency and effectiveness. With the advancement of technology that cannot be dammed, a product of SMEs will be able to evolve to a point, where these products will be difficult to distinguish from one another. To win in a competition, SMEs in marketing products based not only on product quality, but also relies on common strategies used which market orientation and innovation, and entrepreneurial orientation. This study analyzes the influence of market orientation, innovation, and entrepreneurial orientation to competitive advantage at Indonesian SMEs. Meanwhile, the issue raised is how to create a competitive advantage for Indonesia SMEs. Selected population in this study is the Indonesian SMEs engaged in various sectors, totaling 5,7 million industries. And the number of samples in this study were 150 industries. Collecting data using a questionnaire, while data analysis using Structural Equation Modelling (SEM). The results of this study found that there are three factors that can significantly affect the competitive advantage, namely market orientation, innovation, and entrepreneurial orientation. The market orientation factor has the strongest influence on competitive advantage compared to innovation and entrepreneurial orientation. These findings indicate that Indonesian SMEs engaged in the manufacturing sector must create products that are in accordance with the wishes and needs of customers. This study provides some of the limitations of the study and future research agenda that can be done in advanced research.

Keywords: Competitive Advantage, Entrepreneurship Orientation, Innovation, Market Orientation

BACKGROUND

In the current era of globalization, companies are faced with an increasingly fierce competitive environment that has an impact on the decline in sales growth. It should be noted as the business world will continue to grow and increase. Every business must have a competitive advantage, in order to survive and run well. Porter (1990, p.20) explains the determinants of the competitive advantage of a business related to quality, labor skills, accessibility, availability of knowledge resources, the amount and cost of capital resources in the structure of the financial industry, and the availability and quality of physical infrastructure, Demand conditions comprising the composition of market demand, the size, and growth of markets and related industries and supporting industries in coordination and sharing of activities within the value chain.

Meanwhile, the emergence of competition in the business world is inevitable. The business competition will be exposed to various opportunities and threats, both from outside and from within the country. Thus, every company is required to be able to understand what happens in the market and what the consumer wants, as well as various changes that exist in the business environment, so as to compete with competitors. Companies must strive to minimize their weaknesses and maximize their strengths. Companies are also required to choose and set strategies that can be used to deal with business competition. Given such intense competitive pressures, it will directly affect the performance of corporate organizations, including Small and Medium Enterprises (SMEs) in the manufacturing sector. The rapid changes in business climate in this SME manufacturing sector, both in terms of technology, customer needs, and shorter product cycles, it will cause serious problems for SMEs to be able to survive in the competition. SMEs that do not loose with the tight competition will be faced with a decrease in sales, this beginning due to the global market, namely the entry of imported goods China, especially cheap and innovative manufacturing products, and always update in each product which flooded the local market that became a competitor for Indonesian SMEs in the manufacturing sector. Almost 60% of imported manufactured products from China are flooding the local Indonesian market. Because of this tight competition, SMEs must have a competitive advantage in order to survive and continue to develop their business. Meanwhile, SMEs are required to be more innovative in the development of products to increase added value. Successful new products on the market will benefit the SMEs themselves, which will improve the performance of SMEs that can be seen from sales, competitive advantage and productivity. In producing new products is usually associated with process innovation where every new product benefit comes from process innovation (Crawford and Benedetto, 2008).

On the other hand, the existence of the government in terms of improving the performance of SMEs has been very serious as evidenced by the provision of soft loans to business owners to be able to improve their capability in improving their performance, but the credit distribution by the government is still uneven, due to the large number of SMEs in Indonesia. The tendency of lending is too large companies rather than SMEs due to marketing managerial weaknesses (Sugiarto, 2008). Some SMEs in Indonesia still have external weaknesses, such as the lack of ability to adapt to strategic environmental influences, to be less dexterous in capturing business opportunities, lack of creativity and innovation in anticipating challenges as a result of a prolonged economic recession. In addition, internal factors of some SMEs are a lack of managerial skills and skills, lack of access to information technology, capital, and markets. Internal weakness is caused by some human resources managers of SMEs are less qualified in anticipating the various problems that are facing (Sugiarto, 2008).

The various deficiencies mentioned above is required a special attention to the existence of SMEs as a supporter of the real economy of society in Indonesia. Competition is so tight business requires having a competitive advantage, if not then, the SMEs can not last long. Competitive advantage for SMEs can be gained by paying attention to superior value for customers, culture, and climate to bring improvement to efficiency and effectiveness. With the advancement of technology that can not be dammed then an SME product will grow to a point, where the product will be difficult to distinguish between one another. In order to win in a competition, in marketing, today's products, SMEs are not only based on product quality but also depend on the commonly used strategy of market orientation (Never and Slater, 1990) and innovation (Wahyono, 2002) and orientation Entrepreneurship (Weerawerdena, 2003).

According to Kohli and Jaworski (1990, p.1-18), market orientation is a corporate culture that can lead to increased marketing performance. Never and Settler (1990, p.34) defines market orientation as the most effective and efficient organizational culture to create the behaviors required to create superior value for consumers and generate superior performance for SMEs. SMEs that have made market orientation and organizational culture will be based on external basic needs, market desires and demands as a basis for developing strategies for each business unit within SME organizations, and determining business success. According to Nerver and Slater (1990), market orientation has a positive effect on marketing performance, while Greenley (1995) has found that the relationship between market orientation and marketing performance is less significant. In addition to market orientation, innovation can also serve as one of the strategies in achieving competitive advantage. The main goal of innovation is to meet market demand so that innovation product is one that can be used as a competitive advantage for SMEs (Wahyono, 2002). Customers generally want innovative products to their liking. For SMEs, their success in innovation means that SMEs are one step ahead of their competitors. This requires the ability of SMEs to recognize the tastes of its customers so that innovation will eventually be in accordance with the wishes of its customers. Thus innovation must be thoroughly planned and done carefully by SMEs to be able to compete in the market competition.

On the other hand, the business world is now beginning to embrace new thinking, where entrepreneurship is called as one of the factors to realize sustainable and competitive high economic growth of the company. Entrepreneurship means a human activity by exerting mind power or body to create or achieve a work that can manifest noble human beings (Weerawerdena, 2003). According to Frees (2002, p.276), entrepreneurship orientation is the key to improving marketing performance. Companies whose leaders are entrepreneur-oriented have a clear and bold vision to face risks so as to create a good performance. Hart (1992) states that organizations with entrepreneurial types will be associated with low marketing performance. The results of his findings indicate that companies whose top managers are entrepreneurs are more low performers than those whose top managers are not entrepreneurs, including SMEs.

Research Gap

Nerver and Slater (1990) argue that the relationship between market orientation has a positive effect on marketing performance, while the relationship between market orientation and marketing performance is less significant. It shows there are differences of opinion about the effect of market orientation on marketing performance. Unlike Frees (2002); Hart (1992) states that entrepreneurship orientation is the key to improving company performance. An organization with entrepreneurship type is related to the low performance of the company. This suggests that there is a difference of opinion about the entrepreneurial orientation to the performance of the packaging. While Kohli Jaworski (1993) states that innovation affects marketing performance. Innovation is less influential on marketing performance, so there are differences of opinion about innovation on marketing performance.

Formulation of the Problem

Kandampully and Duddy (1999, p.51-56) revealed that innovation is an important factor for achieving competitive advantage. While other research conducted by Burden and Proctor (2000, p.90-96) instead finds that customer focus is one of the elements of market orientation is also an important factor to create competitive advantage. For SMEs, success in creating competitive advantage is believed to be one way to improve its performance. Hamel and Prahalad (1994) argue that the competence of marketing knowledge becomes the key to the success of marketing performance significantly. Furthermore, this research will make the three factors are innovation, market orientation, and entrepreneurship orientation as factors that influence competitive advantage to improve marketing performance.

The problem of research as has been explained earlier that the existence of competition SMEs in various sectors that cause the decline in marketing performance. The key to its success to survive in the midst of competition lies in its ability to develop its superiority. Based on research gap and research problem, it can be taken several questions that become research questions, namely: (1) how the influence of market orientation, innovation, and entrepreneurship orientation to the competitive advantage of SMEs in Indonesia; (2) how the effect of competitive advantage on SME marketing performance in Indonesia.

Porter (1993, p.87) defines competitive advantage as a corporate benefits strategy that collaborates for more effective competencies in the marketplace. Thus, the company will be able to dominate the old market and new markets. Something important to the success of a strategy is to identify a real, tangible and intangible corporate asset that makes the organization or product produced a better quality. The complexity and dynamics of the business environment have intensively encouraged the company to strengthen its strategic base with a focus on customers in order to remain able to access its markets and ensure sustainable growth. Narver and Slater (1995, p.134) argues that firms have made market orientation and organizational culture will focus on external market needs, market demands and demands as a basis for strategy development of each business unit within the organization, and determine success company. To support a market-oriented organizational culture, the commitment and participation of members of the organization ultimately become a continuous learning by the organization and its members to generate more value for customers. With these conditions, it is necessary to build an organizational learning capability that is one way to improve the ability of the company, then the SME is a suitable company to be the object of research, because in the SMEs there is a relationship between organizational learning, organizational memory, market information collection, market, innovation, and marketing performance (Baker and Sinkula, 1999, p.412). A market-oriented organizational culture that is supported by innovation strategies will produce the ability and competence to adapt to the rapid changes called learning, followed by the factors of creating new ideas and innovation from the company (Hurley & Hult, 1998), so that innovation products will be one of the competitive advantages of marketing performance. Baker and Sinkula, (1999, p.413) defines innovation as a corporate mechanism to adapt to dynamic environments to create satisfying customer service performance. Innovation concepts are divided into two groups; innovation culture and innovation capacity that are differentiated in technical innovation and innovation Administration (Han et at, 1998, p.35). Product innovation is one that can be used as a competitive advantage for the company. Baker and Sinkula (1999, p.300) suggest that market orientation is significantly related to firm performance. While Han et al., (1998, p.33) states that market orientation has a positive, but not significant effect on performance, but in the market, orientation has a significant effect on performance through innovation as a variable intervening. Anshori (2010) in his research indicates a significant influence between market orientation and manager's orientation to innovation and performance. According to Lin and Chen (2007), innovation is one of the decisive aspects of corporate performance when the competitive environment becomes increasingly tight. Another opinion is Gray et al, (2002) states that the innovation ability of a company will ensure the ability to a competitive company. Meanwhile, research by Adi Sismanto (2006) found that the result of model testing applied to SME food product in Bengkulu Province of Indonesia shows that; innovation can be improved through learning orientation and market orientation, where product innovation and competitive advantage generated by SMEs can improve marketing performance, learning orientation, market orientation, and product innovation on competitive advantage.

Competitive Advantage

Basically, every competing SME in a business environment has a desire to be superior to its competitors. Generally, SMEs apply the explicit competitive strategy of competing through the activities of various functional businesses. The basic idea of creating a competitive strategy begins with the development of a general formula for how the business will be developed. What exactly is the goal and what policies will be needed to achieve that goal?. Competitive advantage has two differences but related meanings. The first sense emphasizes superiority or superiority in terms of resources and expertise of the company. Companies that have competencies in marketing, manufacturing, and innovation can make it as a source to achieve competitive advantage. Through these three areas of competence, SMEs can develop strategies so as to produce products that sell in the market. While the second understanding emphasizes the advantages in achieving performance over the years. This understanding is related to the position of SMEs compared to what competitors are. SMEs that continue to pay attention to the progress of their performance and strive to improve the performance have the opportunity to achieve a good competitive position then the company actually has the strong capital to continue to compete with other companies (Dogre and Vickrey, 1994, p.669-670). In the meantime, Bharadwaj et al., (1993, p83-84) state that competitive advantage is the result of implementing strategies that utilize various resources owned by the company. Unique expertise and assets are seen as sources of competitive advantage. Unique expertise is the ability of the company to make its employees as an important part of achieving competitive advantage. The company's ability, especially for SMEs in developing the skills of their employees, will make the company a winner and the implementation of human resource-based strategies will be difficult to imitate by its competitors. Being a unique asset or resource is the real resource the company needs to run its competitive strategy. Both of these resources should be directed to support the creation of low-cost enterprise performance and different from other companies. A similar opinion was expressed by Porter (1990, p.3) which states that competitive advantage is the heart of marketing performance to face competition. Competitive advantage is defined as a benefits strategy of companies that collaborate to create a more effective competitive advantage. This strategy should be designed to realize continuous competitive advantage so that the company can dominate the market. Competitive advantage basically grows from the values or benefits created by the company to the consumer. Consumers generally prefer to buy products that have more value than expected. However, the value will also be compared with the price offered. Purchase of products will occur if consumers consider the price of the product in accordance with the value offered. Bharadwaj et al., (1993, p83-84) states that competitive advantage is the result of implementing strategies that utilize various resources owned by the company. Unique expertise and assets are seen as the source of competitive advantage. This unique skill is the company's ability to make its employees an important part of achieving competitive advantage. The company's ability to develop the skills of its employees well will make the company superior, and the implementation of human resource-based strategies will be difficult to imitate by its competitors. Being a unique asset or resource is the real resource that a company needs to run its competitive strategy. Both of these resources should be directed to support the creation of low-cost enterprise performance and different from other companies.

Meanwhile, Narver and Slater (1990, p.21-22) state that market orientation consists of three components: customer orientation, competitor orientation, and inter-functional coordination. Customer orientation and competitor orientation include all activities involved in obtaining information about buyers and competitors on targeted markets and disseminating through business, whereas inter-functional coordination is based on customer and competitor information and consists of coordinated business ventures. The concept of customer orientation can also be interpreted as an adequate understanding of the target customers to buy in order to create a superior value for buyers on an ongoing basis. Understanding here includes an understanding of the entire value chain of buyers, both current and future developments. This effort can be achieved through the process of seeking information about the customer (Uncles, 2000, p.1). SMEs as sellers will understand who their potential customers are, whether in the present or in the future and what they want for the present and the future. From this description, it can be understood that the application of market orientation requires the ability of SMEs in finding a variety of market information so that it can be used as a basis for the company to make the next step or strategy. On the other hand, competitor-oriented are often seen as companies that have a strategy and understand how to acquire and share information about competitors, how to respond to competitors 'actions and also how top management responds to competitors' strategies (Jaworski and Kohli, 1993, p.55). While competitor orientation means the company understands the short-term strengths, weaknesses, long-term capabilities and strategies of its potential competitors (Never and Slater, 1990, p.22). The competitor's orientation can mean that the salesperson will attempt to gather information about the competitor and share that information with other functions within the company, for example in the research and product development section or discuss with the company leader how competitors' strengths and strategies are developed (Ferdinand, 2000, p.18). Meanwhile, Nerver and Slater (1990, p.22) state that inter-functional coordination is the use of coordinated enterprise resources in creating superior value for targeted customers. Inter-functional coordination refers to a particular aspect of organizational structure that facilitates communication between different organizational functions. Inter-functional coordination is based on customer and competitor information and consists of business alignment efforts, typically involving more than the marketing department, to create superior value for customers. Inter-functional coordination can enhance communication and exchange between all organizational functions that concern customers and competitors, and inform the latest market trends. This helps the development of both trust and independence among separate functional units, which in turn leads to a company environment that is more receptive to a completely new product based on customer needs.

Akimova (1999, p.1140-1141) proves that market orientation has a positive influence on competitive advantage. Companies that implement market orientation have advantages in terms of customer knowledge and these advantages can be used as a source to create products that suit the wants and needs of customers. Market orientation is very effective in obtaining and maintaining a competitive advantage by planning and coordinating on all parts of the organization to satisfy the needs and wants of consumers. Therefore, market orientation should emphasize the importance of needs analysis and target market desires more efficiently and effectively than competitors in an attempt to achieve competitive advantage. The emphasis of market orientation on competitiveness is based on the identification of customer needs, thus each company is required to be able to answer the needs of the consumers either through the creation of new products or the development of existing products, in order to create superior value for consumers in a sustainable and can become the main capital for companies to be able to win the competition, especially for SME scale companies. Market orientation is a corporate culture that places the market as the key to the company's survival. Therefore, in order to maintain the growth rate of companies in the midst of increasingly complex competition, the market must be managed with systematic efforts by digging information and recognizing customer needs. In addition, the market must be approached by digging information about the characteristics and background of the customer, so that the anticipation of the market can be done in a proportional way. In essence, markets must be well served thoroughly and responsive to customer and competitor in the market. Some of the indicators used to measure market orientation are customer orientation, competitor orientation, and market information. Customer orientation is the company's willingness to understand the needs and wants of its customers. The competitor's orientation is the company's willingness to monitor its competitors' strategies. Market information is the company's effort to seek information about the market conditions of the industry. Based on the above, the hypothesis that can be proposed is:

H_1: Market orientation positively affects on the company's competitive advantage.

Innovation

According to Amabile, at.al. (1996, p.117), innovation is a broad concept that addresses the application of new ideas, products or processes. Innovation is also defined as a successful application of the company's creative ideas. Therefore, the company is expected to form new ideas in the face of both competitors, customers and existing markets. The similarity of similar product display or similar company system from competitors is a factor driving the occurrence of innovation, usually, competitor products that appear without experiencing significant changes even tend to be static. The situation can be a profitable thing because the competition that arises with the emergence of competing products can be overcome by innovating the product. In addition to product innovation, the system within the company also needs innovation. Innovation is something that can be seen as a functional advance that can take it a step ahead of competitors if it has a surplus that is seen as a value added for the consumer.

The development of an effective new product will be a determinant of the success and viability of a company. The development of new products requires effort, time and capability including the magnitude of risk and the cost of failure. Cooper (2000, p.38) explains that the benefits of new products are very important in a highly competitive global market circle. These advantages can not be separated from the development of innovative products produced, so it will have a market advantage which will then win in the competition. Li and Calantone (1998, p.17) stated that the uniqueness of the product is defined as an important attribute of the superiority of the product and influenced by innovative power and high technology to produce products according to the consumer's wishes. Wahyono (2002, p.28-29) explains that continuous innovation in an enterprise is a basic need that will lead to the creation of a competitive advantage. Conventionally, the term innovation can be interpreted as a breakthrough associated with new products. But in its development, the notion of innovation also includes the application of new ideas or processes. Innovation is also seen as a corporate mechanism in adapting to its dynamic environment.

Changes in the business environment have forced companies to create new thoughts, new ideas, and offer innovative products. Thus, innovation increasingly has significance not only as a tool to maintain the survival of the company, but also to excel in the competition. According to Gatignon and Xuerob (1997), in the product innovation, there are three important things that must be considered namely; product superiority, product uniqueness, and product cost. Product innovation can fail because of many possibilities. Mistakes in applying the strategy are the most common cause, for others such as non-innovative product designs, misjudging competition, the problem lies in the design or the production cost is much higher than expected. Not fast moving can also cause problems, the rapid growth rate of most products on the market. Droge and Vickrey (1994, p.687) in his study stated that the products serve as one source of competitive advantage. Companies that are able to design their products according to customer wishes will be able to survive amid the competition because the product remains in demand by customers. Meanwhile, Bharadwaj et al (1993, p.89) stated that the company's ability to continue to innovate its products will keep the product in accordance with the wishes and needs of customers. Product innovation is basically to meet market demand so that product innovation is one that can be used as a competitive advantage for the company (Han et al., 1998, p.35).

Based on the above description, innovation can be used as a source of competitive advantage of the company. Some of the indicators used to assess innovation are creativity, technical innovation, design changes, changes in distribution systems, and payment administration systems. Technical innovation is an innovation in the company's process of producing products. The design change is the ability of the company to produce products according to customer desires, while the creativity is the ability of the company to create or develop new ideas. The change of the distribution system is the company's effort to develop the right distribution facilities. Payment administration system is the company's effort to make the administration payment system according to customer's wishes. From the above description it can be taken the following hypothesis:

H_2: Innovation has a positive effect on competitive advantage.

Entrepreneurial Orientation

Entrepreneurship is the creative and innovative ability that is the foundation, and the resources to look for opportunities for business success. There are three cornerstones of business organizational trends in entrepreneurship management processes, namely innovation ability, risk-taking, and proactive nature (Weerawerdeena, 2003, p.411). According to Sigauw, Simpson, and Baker (1998), entrepreneurial competence is required in the implementation of marketing strategies to gain competitive advantage through responsiveness to customer needs. While the entrepreneurial base itself includes five things, namely: autonomy, innovative power, risk-taking, proactivity, and competitive aggressiveness. Meanwhile, according to Kottler (2001), entrepreneurial marketing is an integrated concept in the current full of changes. The entrepreneurial marketing itself is defined by Morris and Lewis (2002) as an act of proactively identifying efforts to achieve and retain profitable customers through innovative approaches to risk management, resource effectiveness, and value development. Entrepreneurship is known as a new approach in corporate performance updates. A positive response by a company needs to be done by trying to rise from the economic downturn due to a prolonged crisis. Entrepreneurship is called a spearhead to achieve sustainable and highly competitive corporate economic growth. The shape of the entrepreneurial application can be indicated with an entrepreneurial orientation through an indication of innovation, proactive, and risk-taking ability. The ability of innovation relates to perception to new and unique business activities. The ability to innovate is an important point of entrepreneurship and the essence of entrepreneurial characteristics. Some research results and entrepreneurial literature suggest that entrepreneurial orientation has a significantly more innovative ability than those lacking in entrepreneurial skills (Koh, 1997, p.9). The proactivity of a person to strive for achievement is another indication of the application of the entrepreneurial orientation personally. Similarly, if a company emphasizes the proactivity in its business activities, then the company has engaged in entrepreneurial activity that will automatically drive high performance (Weerawardena, 2003, p.424). Companies with high entrepreneurial activity are visible from the high spirit of surrender to obstacles, challenges actively and dynamically. Courage in taking risks can be defined as an opportunity-oriented action in the uncertainty of the decision-making context. Risk constraints are a key factor that differentiates a company from an entrepreneurial spirit and does not. The main function of high entrepreneurship orientation is how to involve optimal risk measurement and risk taking.

Meanwhile, the role of effort also plays an important role in the ability of the leader, in addition to the level of education and risk-taking ability, because with high business experience, the ability of the leadership to see consumer desire on a product becomes very high (Hadjimanolis 2000, p.237). The attitude of entrepreneurship and the consequences of behavior to innovation is strongly influenced by the background of his leadership concerning his leadership experience. The ability of the leadership will greatly affect the attitude of the company in influencing the attitude of the company in paying attention to the market company, being responsive to the company, the market needs, often requires the designing of new products to adjust to the changes and exploitation of consumers, thus creating competitive advantage of the company.

Meanwhile, things related to entrepreneurship orientation are flexible, proactive, risk-taking, effort, and anticipatory experience. Taking risks can be defined as an opportunity-oriented person in the uncertainty of the decision-making context. Flexible is the ability to change in accordance with the wishes of customers. Proactive is a company with leaders who have the ability to recognize opportunities and commitment to innovation. The experience is the attitude of entrepreneurship and the consequences of behavior to innovation that is influenced by the background of his leadership concerning the experience of his leadership. Anticipatory is the company's ability to overcome or anticipate any changes. Based on the above thought then the hypothesis that can be followed is:

H_3: The entrepreneurial orientation has a positive effect on the company's competitive advantage.

Marketing Performance

The ability to compete because the product will still have the power to compete with other companies because the product will remain in demand of customers. Thus the competitive advantage has a positive effect on improving the company's marketing performance. Some of the indicators used in assessing marketing performance are sales turnover, sales return, the range of marketing area, and sales increase. Sales turnover is the number of sales of the company's products. Sales return is a number of product sales return. The reach of the marketing area is the breadth of the marketing area of the product. Increased sales are the number of sales increased from the previous period. Based on the above thought then the hypothesis that emerged:

H_4: Competitive advantage positively affects on marketing performance.

THEORETICAL CONCEPTUAL, FRAMEWORK AND RESEARCH METHOD

Development of Research Model

As has been explained that competitive advantage is the key to facing the existing competition. Various studies indicate there are three important factors that support the formation of competitive advantage that is market orientation, entrepreneurial orientation, and innovation. In addition, the creation of competitive advantage is seen to have a positive impact on improving marketing performance. The relationship between innovation, market orientation, entrepreneurial orientation, competitive advantage, and marketing performance will then be presented succinctly in the following theoretical model of thought:

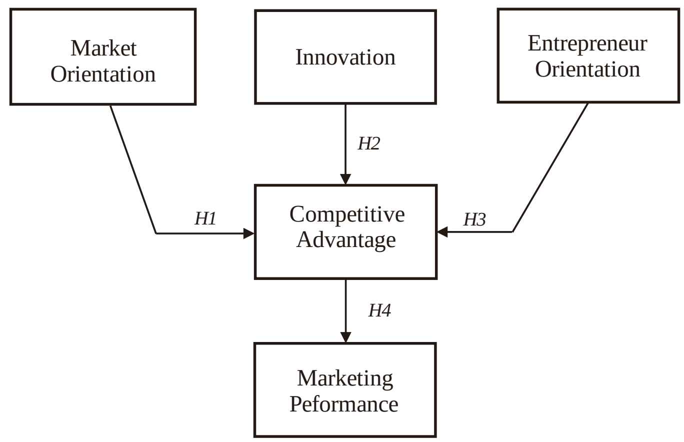


Figure 1. Theoretical Model
Source: Bharadwaj et al., (1993); Dogre dan Vickrey (1994); Nerver dan Slater (1995); han, kim and Srivastava (1998). Uncles (2000); Hadjimanolis (2000)

Operational Definition of Variables

There are five variables that can be developed, namely innovation, market orientation, entrepreneurial orientation, competitive advantage, and marketing performance. Displayed operational definitions of each variable used in this study. Operational innovation is the ability of SMEs to create new ideas or products. The measurement indicator is more on the application of new ideas, products or processes (Amabile et al., 1996, p.117). There are five indicators of innovation measure, namely: (1) technical innovation; (2) design change as per customer's requirement; (3) creativity; (4) change of distribution system, and; (5) payment system according to customer's wishes (Dogre and Vickrey, 1994; Han, Kim and Srivastava, 1998).

Meanwhile, the operational definition of market orientation is the overall effort of SMEs to implement market-oriented culture. This indicator of variable measurement is the process and activity associated with customer creation and satisfaction by continually assessing the needs and wants of customers (Uncles, 2000, p.1). There are three indicators used to measure market orientation, namely (1) customer orientation; (2) the company's willingness; (3) competitor's orientation, and; (4) market information (Nerver and Slater, 1995 and Uncles, 2000). While the operational definition of entrepreneurial orientation is the effort of SMEs to implement a spirit-oriented culture. The entrepreneurial orientation is the creative and innovative capabilities that are used as the basis, and the resources to seek opportunities for success with indicators; (1) taking risks; (2) flexible to customer's wishes; (3) anticipatory changes; (4) proactively recognize opportunities and commitments; (5) business experience (Weerawerdena, 2003; Hadjimanolis, 2000). Next is the operational definition of competitive advantage that describes the ability of SMEs to deliver more value to their products. Competitive advantage is defined as a benefits strategy of companies that collaborate to create more competitive advantages in their markets. There are five indicators used to measure competitive advantage in this research, namely (1) product uniqueness; (2) competitive prices; (3) rare in competition; (4) is not easily imitated; (5) Not easily replaced means not having the same substitute (Bharadwaj et al., 1993). Then is the operational definition of marketing performance that sees the performance of SMEs in terms of marketing aspects. Marketing performance is a measure of achievement gained from the overall marketing process activities of a company or organization. There is five indicators used to measure marketing performance in this research, namely: (1) sales turnover; (2) increased sales; (3) return sales; (4) market area coverage and, (5) competitors (Ferdinand 2002, p.23). Based on the five variables, then developed the questionnaire instrument to be used in collecting data.

Types and Data Sources

The type of data to be used in this study is the subject data (self-report data), i.e. the type of research data in the form of attitudes, opinions, experiences, or characteristics of a person or group of people who are the subject of research or respondents (Indriantoro and Supomo, 1999, p. 145). While the data source used in this research is a primary and secondary data source. According to Cooper and Emory (1995, p.191), primary data were collected specifically and directly related to the problems studied. For this study, the primary data were obtained from questionnaires distributed to respondents who in this case were the owners of SMEs in Indonesia. While the secondary data obtained from the literature-literature, marketing journals, document data from the Ministry of Industry of the Republic of Indonesia (Kemenparin)[1], and the Central Statistics Agency related SMEs manufacturing sector in Indonesia. Meanwhile, the population in this study is SME sector manufactured in Indonesia with a population of 56.7 million industries including small and medium scale (Kemenparin, 2016). While the sample used in this study is at least 150 respondents. It refers to Hair et al., (2010) that the appropriate sample size for the Structural Equation Modeling (SEM) tool is between 100 and 200 respondents, in order to be used in estimating the interpretation with SEM.
This study requires a data analysis and interpretation that will be used to answer research questions to uncover certain social phenomena. So data analysis is the process of simplifying the data into a form that is easier to read and interpret. The model to be used in this research is the model of causality or relationship or influence and to test the proposed hypothesis, the analysis technique used is SEM. The reason for using SEM is because of this multivariate technique that combines aspects of multiple regression and factor analysis to estimate the interrelated sequence of interrelated relationships simultaneously (Hair et al., 1999, p.621). Research modeling through SEM allows to answer research questions that are regressive or dimensional, that is measuring what the dimensions of a concept.

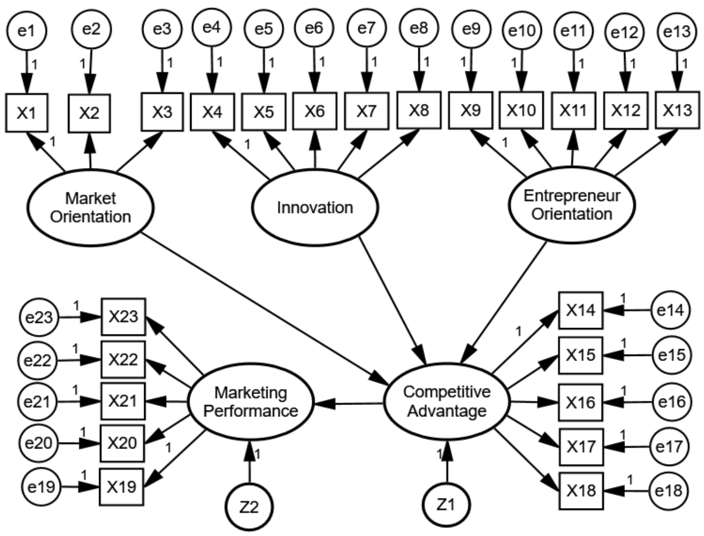
FINDINGS AND DISCUSSIONS

Theoretical Model Development

The first step is to conduct a series of scientific explorations through literature review in order to obtain justification for the developed theoretical model. After that, the model is empirically validated through SEM processing. Thus, a model with strong theoretical justification can be developed. SEM is not used to form or produce a theory of causality but is used to justify the existence of the causality of existing theories. Therefore, the development of a scientifically justified theory is a key requirement in using SEM modeling. The second step, the theoretical model that has been built in the first step will be described in a flowchart. The flow diagram will make it easier for researchers to see the causality relationships to be tested. In SEM operated with AMOS 24 to illustrate the causality relationship in a flowchart. The straight arrow represents a direct causal relationship between one variable and the other. While the curved lines between constructs with arrows at each end illustrate a correlation between constructs. Constructs in the flow chart can be distinguished in two groups of constructs namely (1) exogenous or independent constructs of variables unpredictable by other variables in the

[1] Ministry of Industry of the Republic of Indonesia abbreviated Kemenperin RI is the ministry within the Government of Indonesia in charge of industrial affairs. The Ministry of Industry is under and responsible to the President, and headed by ministers from 27 July 2016 held by Airlangga Hartarto.

model; (2) endogenous constructs, are factors predicted by one or more constructs. Endogenous constructs can predict one or more exogenous constructs, but exogenous constructs can only be causally related to endogenous constructs.



Note: e = error
x = indicator variable
Z= koefisien pada variable tergantung

Figure 2. Path Diagram

DATA ANALYSIS

The data analysis used in this research is confirmatory factor analysis and full model of Structural Equation Modeling, which typically includes seven steps to evaluate the goodness of fit criteria, ie the degree of difficulty between the reality of the research results in the field supported by the theoretical framework with research model developed with predetermined criteria. Respondents in this study were small and medium scale apparel industry managers in Java, Bali, Kalimantan, and Sumatera, which amounted to 150 respondents. Meanwhile, descriptive describes several conditions of the research object in summary obtained from the collecting and answer questionnaires by respondents, ie managers in each manufacturing SMEs in Indonesia. Descriptive data of this research object provide some information simply from research object related to research model developed. SME manufacturing sector that made the object of research amounted to 150 industries. Data were obtained through interview method and direct distribution of a questionnaire to respondent, that is a manager in each industry. Questionnaires that have been filled by the respondents then compiled and processed into research data.

Furthermore, the validity test is used to find out whether or not the question in the questionnaire is feasible. The decision criterion is to compare Corrected Item-Total Correlation value compared with r_{table} value with (a) 0,05 ie 0,159. If the value of Corrected Item-Total Correlation is greater than r_{table} then the indicator is feasible and vice versa (Imam Ghozali, 2005). After testing the validity, the next step is the reliability test is related to the accuracy of a data, while for reliability testing through the value of coefficient alpha compared to the value of 0.60. Constructs or variables are said to be reliable if they have alpha values above 0.60 and vice versa (Imam Ghozali, 2005). Based on the results of construct validity analysis, the value of the coefficient of market orientation (0.878); Innovation (0.879); Orientation of entrepreneurship (0.917); Competitive Advantages (0.910) and Marketing Performance (0.898). While the value of coefficient Cronbach alpha on each indicator (X1 - X23) > 0.8. This indicates that all indicators (observed) are valid, this is indicated by the Corrected Item-Total Correlation > r_{table} (0.159). This proof shows that all indicators (observed) deserve to be used as an indicator of the constructs (latent variables). Alpha coefficient (Cronbach alpha) has a value above 0.60 so it can be explained that research variables (constructs) in the form of market orientation, innovation, entrepreneurship orientation, competitive advantage, and marketing performance is reliable or have high reliability, High accuracy to be a variable (construct) in a study.

The next step after compiling a covariance sample to determine the estimation technique. After converting the data into a covariance matrix then the next step is to determine the estimation technique. The estimation technique to be used is the maximum likelihood estimation method because the number of samples used ranges from 100 to 200. This technique is carried out in stages, namely the measurement model estimation by confirmatory factor analysis and structural equation model technique, which is intended to see the suitability of the model and the causality Built. The phase of exogenous construct confirmatory factor analysis aims to test the uni-dimensionality of the constituent dimensions of each latent variable. These latent or escalating constituent variables consist of 23 observed variables as their formers.

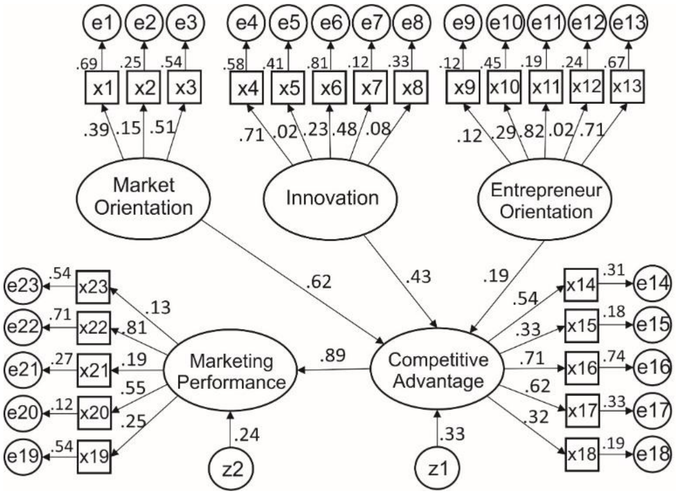


Figure 3. Structural Equation Modeling Analysis

Structural Equation Model Analysis

The next analysis is SEM analysis in Full Model which is intended to test the model and hypothesis developed in this research. Testing model in Structural Equation Model done with two test, that is conformity test model and significance test of causality through regression coefficient test. Results of data processing for SEM analysis seen in Figure 3.

Kriteria	Cut of Value	Hasil	Evaluation
Chi-Square	χ^2 with df: 209; p: 5% = 256,176	291,531	Baik
Probability	> 0,05	0,067	Baik
GFI	> 0,90	0,887	Marjinal
AGFI	> 0,90	0,882	Marjinal
TLI	> 0,95	0,924	Baik
CFI	> 0,95	0,976	Baik
CMIN/DF	< 2,00	1,192	Baik
RMSEA	< 0,08	0,042	Baik

Source: Data Analysis

Based on the observations in the graph of full model analysis can be shown that the model meets the fit criteria, it is marked with the value of the calculation results meet the criteria worthy full model. The calculation result of chi-square test on the full model obtained chi-square value of 256,176 still under chi-square table for degrees of freedom at the level of 209 significant 5% of 291,531. A probability value of 0.067 where the value is above 0.05 and other criteria that largely meet well. These results show that the overall model meets the fit model criteria. In addition to the above-observed criteria (indicators) of exogenous 1, exogenous 2, exogenous 3, endogen 1 and endogen 2 are valid because they have values above 0.5 so that none of the observed indicators are dropped.

Based on Figures 3 and 1, each indicator of latent variables indicates results that meet the criteria of CR values above 1.96, with *p values* smaller than 0.05 and lambda or loading factor greater than 0,5. These results can be said that the indicators of latent variable formers are significantly an indicator of latent factors that are formed. Thus, the model used in this study is acceptable.

Table 2. Regression Weights, Structural Equation Modeling Analysis

			Estimate	S.E	C.R	p	Label
Competitive Advantage	<---	Innovation	,300	,092	3,244	,001	par_18
Competitive Advantage	<---	Market Orientation	,302	,080	3,799	***	par_18
Competitive Advantage	<---	Entrepreneur Orientation	,250	,103	2,466	,015	par_18
Marketing Performance	<---	Competitive Advantage	,808	,099	8,201	***	par_18
X1	<---	Market Oriention	1,000				
X2	<---	Market Oriention	1,601	,081	10,001	***	par_1
X3	<---	Market Oriention	1,014	,052	10,205	***	par_2
X4	<---	Innovation	1,000				
X5	<---	Innovation	1,016	,024	11,023	***	par_1
X6	<---	Innovation	1,005	,054	10,029	***	par_2
X7	<---	Innovation	1,031	,017	10,008	***	par_3
X8	<---	Innovation	1,035	,011	10,061	***	par_4
X9	<---	Entrepreneur Orientation	1,000				
X10	<---	Entrepreneur Orientation	1,016	,028	11,043	***	par_1
X11	<---	Entrepreneur Orientation	1,005	,072	11,119	***	par_2
X12	<---	Entrepreneur Orientation	1,031	,016	10,054	***	par_3
X13	<---	Entrepreneur Orientation	1,035	,054	10,022	***	par_4
X14	<---	Competitive Advantage	1,000				
X15	<---	Competitive Advantage	1,016	,028	11,043	***	par_1
X16	<---	Competitive Advantage	1,005	,072	11,119	***	par_2
X17	<---	Competitive Advantage	1,031	,016	10,054	***	par_3
X18	<---	Competitive Advantage	1,035	,054	10,022	***	par_4
X19	<---	Marketing Performance	1,000				
X20	<---	Marketing Performance	1,086	,021	11,055	***	par_1
X21	<---	Marketing Performance	1,095	,082	10,123	***	par_2
X22	<---	Marketing Performance	1,054	,096	11,041	***	par_3
X23	<---	Marketing Performance	1,145	,012	10,032	***	par_4

Source: Data Analysis
Note: *** less than 0,001

Evaluation of Goodness of Fit Criteria and Univariate Outlier

The evaluation of goodness of fit is intended to assess how well the research model developed. At this stage, the suitability of the research model evaluated the level of goodness of fit, but what needs to be done before is to evaluate the data used in order to meet the criteria required by SEM. While the outlier is an observation with extreme values both univariate and multivariate which arise because of the combination of unique characteristics it holds and looks very much different from other observations. Testing whether or not the univariate outlier is done by analyzing the Z-score value of the research data used. If there is a larger value of Z-score ± 3.0 it will be categorized as an outlier. This univariate outlier test uses the help of SPSS 24 software. Outliers at the multivariate level can be seen from the distance Mahalanobis (Mahalanobis Distance). Calculation of distance of

Mahalanobis can be done by using Computer program AMOS 24. Based on the result of data processing can know that minimum distance of Mahalanobis is 17,447 and maximum are 88,867. Based on the value of chi-square with the degree of free 22 (number of indicator variables) at the level of significance of 0.001 is 48.268 then the Mahalanobis value exceeding 48.268 in Mahalanobis table (Ferdinand, 2005).

Classic Assumption Test

The next testing data is to analyze the level of normality of data used in this study. The assumption of data normality must be met so that data can be further processed for SEM modeling. The univariate and multivariate normality of the data used in this analysis can be tested for normality, as presented in. Univariate normality testing is to observe the value of skewness data used, if the value of CR on skewness data is between the range of +2.58 at the level of significance 0.01, then the research data used can be said to be normal. Normality testing is done by observing the skewness value of the data used if there is a CR value exceeding +2.58 at the 0.01 significance level. The analysis shows that there is no CR value outside of +2.58. So it can be concluded univariately is good. Normality test is done by using criteria of the critical ratio of +2.58 at the level of significance of 0.01 (1%) (Ghozali, 2004, p.105), so it can be concluded that there is no deviating data. The data normality test for each indicator is normal. Furthermore, the evaluation of multicollinearity and singularity in order to see whether there is multicollinearity or singularity in combinations of variables in the research data, so what needs to be observed is the determinant of the sample covariance matrix. Indications of multicollinearity and singularity suggest that data can not be used for research. The presence of multicollinearity and singularity can be known through the determinant value of the covariance matrix which is really small, or close to zero (Tabachnick & Fidell, 1998 in Ferdinand, 2005). From the results of data processing in this study, the determinant value of the sample covariance matrix is 75.901. The results indicate that the determinant value of the sample covariance matrix is far from zero, thus it can be said that the research data used does not have multicollinearity and singularity, so the data is feasible to use. Next is the heteroscedasticity test to test whether in a regression model there is a variance inequality of the residual of an observation to another observation. If the variance of the residual is fixed, it is called homoscedasticity, and if the variance is different, it is called heteroscedasticity. To detect whether variables occur heteroscedasticity can be seen by looking at the presence or absence of a particular pattern on the scatterplot chart, where the X axis is predicted Y, and the X axis is the residual (Y predicted - Y actually) that has been standardized. From the calculations using SPSS 24, the scatterplot diagram shows that the dots describing the data are randomly distributed, do not form a clear specific pattern, and spread out above or below the number 0 on the Y axis, this means no heteroskedasticity in the regression model is feasible Wear (Imam Ghozali, 2005). Next is the suitability testing of the research model used to test how well the goodness of fit level of the research model. Based on the test results presented above, it is known from the eight criteria that exist, seven of which are in good condition and two (ie GFI and AGFI) are still in marginal condition. With this result, it can be said that the research model has a goodness of fit level.

Reliability Test and Variance Extract

The reliability test shows the extent to which a measuring instrument can deliver relative results The same when the measurements are returned on the same object. The minimum reliability value of an acceptable latent variable forming dimension is greater than or equal to 0.8 (Hair et.al, 1995, p.642). Meanwhile, variance extract shows the amount of variance of the indicator extracted by the latent variable developed. The minimum variance extract value of the acceptable latent variable dimension is 0.50 (Hair et.al, 1995, p.642).

Descriptive of Variables

This analysis is conducted to obtain a description of the opinions of respondents of this research, especially regarding the research variables used. This analysis is done by using index analysis technique, to describe the respondent's perception of the items of the question asked. In the submission of an empirical picture of the data used in the study descriptively, statistics is by index number. Through the index number will be known how far the degree of perception of respondents on the variables that become indicators in the study. The answer ranges from filling in the dimensions of each question of the variables studied, determined by the three-box method. The index value obtained from the range 1 to 10 obtained range 10 (10-1 = 9) divided by 3 will produce a range of 3 that will be used as the basis of interpretation of the index value, that is; Index value of 1-3,9 as Low Interpretation; Index value from 4.1 to 6.9 as Medium Interpretation, and 7-10 Index value as High Interpretation.

Three indicators have been used in the study of market orientation, namely: customer orientation, competitor orientation, and market information. Based on the mean values for the market orientation variables on the results of this study indicates that the market orientation is generally moderate (6,744). The respondent's open answer to the constructs through existing indicators is expressed by summarizing with similar or similar statements combined in a single representative sentence, if not summarized or combined, presented as separate points. Based on the process, the following qualitative descriptive can provide an overview of research findings on the variables of market orientation.

Five indicators have been used in the study of innovation, namely: creativity, technical innovation, design changes, changes in distribution systems, and payment administration systems. Based on the mean for the market orientation variables on the results of this study indicates that the average innovation is moderate (6,898). The respondent's open answer to the constructs through existing indicators is expressed by summarizing the same or similar statements combined in one representative sentence, if not summarized or combined, presented as separate points. Based on the process, the following qualitative descriptive can give an overview of research findings of the variables of innovation.

Five indicators have been used in the study of entrepreneurial orientation, namely: the experience of business, proactive, risk-taking, flexibility, and anticipatory. Based on the mean for market orientation variables on the results of this study indicates that the entrepreneurial orientation is generally moderate (6,8604). The respondent's open answer to the constructs through existing indicators is expressed by summarizing with similar or similar statements combined in one representative sentence, if not summarized or combined, presented as separate points. Based on the process, the following qualitative descriptive can provide an overview of research findings on the variables of entrepreneurial orientation.

Five indicators have been used in the study of competitive advantage: unique, competitive, rare, not easily imitated, and not easily replaced. Based on the mean for market orientation variables on the results of this study indicate that the general competitive advantage is moderate 6.634. The respondent's view of what is questioned through an open questionnaire is summarized by the same or similar statements combined in one sentence that is representative, if not summarized or combined, are presented as separate points. Based on the process, the following qualitative descriptive can provide an overview of research findings of the variables of competitive advantage.

Five indicators have been used in the review of marketing performance, namely: sales turnover, sales increase, low sales returns, market coverage, and competitor. Based on the mean for market orientation variables on the results of this study indicate that marketing performance is generally moderate (6,492). The respondent's view of what is questioned through an open questionnaire is summarized by the same or similar statements combined in one sentence that is representative, if not summarized or combined, are presented as separate points. Based on the process, the following qualitative descriptive can give a description of research findings of marketing performance variables. The result of the analysis shows that male business entrepreneurs have the highest marketing performance (35.7%), while the female has the highest marketing performance (42.4%). The results show that female entrepreneurs have higher marketing performance compared with male. Employers in the age group of 25 years to 36 years have high marketing performance (49.1%), in the age group of 37 years to 48 years showed high marketing performance (30%) and in the age group of 49 years to 60 years old High perceived marketing performance (37.1%). These results indicate that rulers aged 25 to 36 have higher marketing performance compared to other age groups. Company age between 1 year to 10 years has high marketing performance (40,2%), age group 11 years up to 20 years shows high marketing performance (40,5%) and in the age group, 21 year up to 31 years old Has a high perceived marketing performance (18.2%). The results indicate that the age of companies 11 to 20 have higher marketing performance compared with other age groups.

Hypothesis Testing

The testing phase of this hypothesis is to test the proposed research hypothesis. Hypothesis testing is based on data processing research by using SEM analysis, which analyzing regression value. Testing the hypothesis is to analyze the value of Critical Ratio (CR) and probability (p) value of the data if compared to the required statistical limits, that is above the value of 1.96 for the CR value and below 0.05 for the *p-value*. If the results of the data show the value that meets the requirements, then the proposed research hypothesis can be accepted. Detailed testing of research hypotheses will be discussed gradually in accordance with the hypothesis that has been proposed. In this study, four hypotheses are proposed which are then discussed in the following section.

Hypothesis H_1 in this study market orientation has a positive influence on competitive advantage, which means the higher the market orientation, the higher the competitive advantage. Based on the result of data processing known that Critical Ratio (CR) value of influence between market orientation variable to competitive advantage is 3,792 with probability (p) value equal to 0.000. The results of these two values provide information that the effect of market orientation variables on competitive advantage is acceptable, as it qualifies above 1.96 for Critical Ratio (CR) and below 0.05 for probability (p) value, hence it can be said that the hypothesis H_1 is acceptable.

Hypothesis H_2 in this research is innovation has a positive influence on competitive advantage, which means that high innovation is a highly competitive advantage. Based on the result of data processing, it is known that the Critical Ratio (CR) value between the variables of innovation to competitive advantage is 3.244 with probability (p) value is 0.001. The results of these two values provide information that the effect of innovation variables on competitive advantage is acceptable, as it qualifies above 1.96 for Critical Ratio (CR) and below 0.05 for probability (p) value, hence the hypothesis H_2 of this study acceptable.

Hypothesis H_3 in this study is entrepreneurial orientation has a positive influence on competitive advantage, which means that the higher the orientation of entrepreneurship, the higher the competitive advantage. Based on the result of data processing, it is known that the Critical Ratio (CR) value of influence between entrepreneurial orientation variable to competitive advantage is 2,431 with probability (p) value is 0.015. The results of these two values provide information that the effect of entrepreneurship orientation variables on competitive advantage is acceptable, as it qualifies above 1.96 for Critical Ratio (CR) and below 0.05 for probability (p) value, hence it can be said that hypothesis H_3 is acceptable. Hypothesis H_4 in this study is competitive advantage has a positive influence on marketing performance, which means the higher the competitive advantage, the higher the marketing performance. Based on the result of data processing, it is known that the Critical Ratio (CR) value of competitiveness variable to marketing performance is 8,201 with probability (p) value is 0.000. The results of these two values provide information that the influence of competitiveness variables on marketing performance is acceptable, as it qualifies above 1.96 for Critical Ratio (CR) and below 0.05 for probability (p) value, hence it can be said that hypothesis H_4 is acceptable.

CONCLUSION

Hypothesis testing performed proves that there is a significant positive influence on market orientation and competitive advantage. It can be concluded that the willingness of Indonesian SMEs to implement market orientation strategy will have an impact on the ability of Indonesian SMEs to compete with other companies. Hypothesis testing performed to prove that there is a significant positive influence between innovation with a competitive advantage. This shows that the willingness of SMEs to develop product innovation has an impact on increasing the ability of SMEs in the face of market competition. Meanwhile, hypothesis testing performed to prove that there is a significant positive influence on entrepreneurial orientation with a competitive advantage. This shows that the ability of Indonesian SME leaders in managing the company turned out to have an impact on the ability of SMEs to compete against other companies. Hypothesis testing performed to prove that there is a significant positive influence between competitive advantage with marketing performance generated by Indonesian SMEs. This shows that the ability of SMEs to compete with other companies has an impact on improving the performance of SME marketing.

As has been described earlier that the problem studied is how to create a competitive advantage to improve marketing performance. The results of this study found that there are three factors that can significantly affect the competitive advantage, namely market orientation, innovation, and entrepreneurial orientation. The market orientation factor has the strongest influence on competitive advantage compared to innovation and entrepreneurial orientation. These findings indicate that Indonesian SMEs engaged in the manufacturing sector must create products that are in accordance with the wishes and needs of customers, by observing customer behavior or conduct more aggressive surveys of customers. Customers preferred products that fit their needs and wants and were less interested in buying innovative products or innovative company systems. According to them, entrepreneurial orientation is actually just a positive attitude SMEs to face the competition and out of the various obstacles that facing. However, these three factors remain an important factor to create a competitive advantage of Indonesian SMEs.

In addition, the research in this study found a relationship between competitive advantage to marketing performance. The results of this study prove the existence of a positive and significant influence between competitive advantage on marketing performance. This means that Indonesian SMEs need to recognize and be able to determine exactly what is actually a source of their superiority in the competition, by continuing to maintain and develop a source of competitive advantage then the continuity of SMEs will be maintained.

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An Assessment of Potential: Entrepreneurial Intentions Among Students in Brunei Darussalam

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Abstract - Today's young generation will become tomorrow's spirit of a nation. One of the biggest and fundamental issues common to every nation is youth unemployment. With limited opportunities for employment by the government and few corporate organizations in the state, entrepreneurship becomes a viable alternative for job creation, social development and a proper tool for economic diversification in Brunei Darussalam. This study has designed to provide understanding about the potential entrepreneurial intentions from the perspective of students in Brunei Darussalam. This was an explanatory research to identify and understand the entrepreneurial intentions of students in Brunei Darussalam and examined the factors affecting their decisions. A cross-sectional study has been utilized whereby the individuals have been examined as the unit of analysis. The study presented is based on other entrepreneurial intentions models from other literature. The ultimate dependent variable was the entrepreneurial intentions of students. The survey was conducted based on a self-administered questionnaire on 450 students in selected higher learning institutions in Brunei Darussalam. The results revealed that more students have positive intentions to pursue entrepreneurship. An array of factors was discovered to the formulation (or not) of entrepreneurial intentions. Personality traits, family and friends, experiences and education and economic conditions, and perceived motivations and obstacles. In this study, we report the results of potential influences on entrepreneurial intention: personality factors, social factors (personal experiences and education) and societal factors. It was also interesting to note that students perceived a high level of risk associated with entrepreneurship.

Keywords: Entrepreneurial intentions, pro-active personality, risk-taking propensity, Students, Brunei Darussalam

Research Background:

Like other nations, young Bruneians are also facing many challenges, but the prospect of long-term unemployment after school paints a particularly bleak picture for social development and the future of youth. There is a lack of systematic results available on Brunei youth's intentions towards entrepreneurship and their plans and consequently, more information is required for the development of suitable policy interventions to improve the employability of learners. The government will accelerate efforts to diversify the economy by putting greater emphasis on SMEs development and job creation for young Bruneians.

Several initiatives have already been laid out as a foundation for the government's efforts to expand Brunei's local economic activities that can develop SMEs and providing more job opportunities for locals. Various steps have been taken to reduce Brunei's dependency on oil and gas while preparing a basis for a more resilient and competitive economic development. SMEs could play a very important role for the country's future in achieving Wawasan 2035. SMEs are valuable assets that need to be resilient and competitive in any situation, especially when the country one day no longer relies heavily on oil and gas production.

The government has also taken various steps to help SMEs build their capabilities, including the Energy Department's local business development directive which has opened up more opportunities for local SMEs to expand in a monopoly-free and corruption-free business environment. Various assistance and incentives have also been provided by various government agencies such as tax incentives from the Ministry of Finance (MOF), training schemes under the Department of Planning and Economic development (JPKE), Ministry of Education (MOE), Ministry of Industry and Primary resources (MIPR) and Universiti of Brunei Darussalam (UBD) and many more. These evidenced the support of government for youth to enhance their skills and to motivate them to start their enterprises.

While there has been significant previous research on the causes and effects of entrepreneurship, only a limited number of studies focused on entrepreneurial intent among students (Lüthje and Franke, 2003). Some models on entrepreneurial intent have been developed, yet widely unknown whether personality traits or contextual founding conditions drive the students' career decision towards self-employment (Lüthje and Franke, 2003). Personality traits have a strong impact on the attitudes towards self-employment. These entrepreneurial attitudes show a direct effect on intentions. Thus, the students' personality is considered to have an indirect effect (through attitudes) on his or her intentions to start a new venture (Lüthje and Franke, 2003). The latter mentioned contextual founding conditions consist of for instance: legal conditions, financial support, infrastructure, economic environment, education, etc. These contextual founding conditions have a direct effect on intentions to start a new venture.

Current research is still not totally clear about whether personality traits or rather academic entrepreneurship education have the strongest impact on students' entrepreneurial intentions. University courses and activities would be less likely to stimulate start-ups if the underlying intentions were more personality than education focused. Since personality traits are often thought to be rather constant over time; it will be difficult to stimulate university spin-off companies when students do not have the personality needed to become successful entrepreneurs. For this reason, it is important to know the exact relationship between personality traits, entrepreneurship education and entrepreneurial intentions. To contribute to an improvement of entrepreneurship education in the Brunei Darussalam, this thesis explores the influence of personality traits and the participation in entrepreneurship courses on entrepreneurial intentions among students too.

The research in this thesis studies two effects. On one hand, the effects of personality traits and participation in entrepreneurship education on the entrepreneurial intentions of students. On the other hand, the moderating effects of personality traits on the attitude towards entrepreneurship and the participation in entrepreneurship education are investigated. Students who participated in entrepreneurship courses might have certain common personality characteristics. On the contrary, entrepreneurship education could positively influence certain entrepreneurial characteristics of students.

This research attempts to understand about Potential Entrepreneurial intentions among Students in Brunei Darussalam and to support the problem statement four sub-questions will be discussed:

- To understand the relationship between Entrepreneurial knowledge and entrepreneurial intentions (EI)
- To understand the relationship between Attitude towards entrepreneurship and entrepreneurial intentions (EI)
- To understand the relationship between subjective norms (SN) and entrepreneurial intentions (EI)
- To understand the relationship between perceived behaviour control (PBC) and entrepreneurial intentions (EI)

Literature Review:

Since its introduction 26 years ago Theory of Planned Behaviour (TPB) by Ajzen has become one of the most frequently cited and influential models for the prediction of human social behaviour. A considerable body of literature has addressed the concept of entrepreneurial intentions, viewing much of entrepreneurship as intentional behavior and the formation of an intention to start a business as an initial step in the process of founding an organization (Bird, 1988; Kolvereid, 1996; Krueger et al., 2000; Hessels, Van et al., 2008). The most commonly used theoretical framework in this stream of research (Schlaegel and Koenig, 2012) is the theory of planned behavior (TPB), which conceptualizes strength of intention as an immediate antecedent of behavior (Ajzen, 1991, 2011). For all its popularity, the TPB has also been the target of much criticism and debate. Some researchers (Wegner and Wheatley, 1999) reject it outright as an adequate explanation of human social behaviour. They tend to deny the importance of consciousness as a causal agent (Wegner and Wheatley, 1999) and view much human social behaviour as driven by implicit attitudes (Greenwald and Banaji, 1995) and other unconscious mental processes (Anik Kusmintarti et al., 2014; Mery Citra Sondari, 2014; Uhlmann and Swanson, 2004; Brandstatter et al., 2001; Aarts and Dijksterhuis, 2000; Bargh and Chartrand, 1999; Bargh, 1989).

Initial studies of TPB were mostly attempted to test the theory's predictive validity in various behavioural domains. The combined weight of much empirical evidence lends clear support to the theory. TPB does, in fact, predict intentions and behaviour quite well; investigators turned their attention to more sophisticated questions (intended entrepreneurial behaviour after five years period, future intentions on business expansion) although straight-forward applications to new behaviours or behaviours in novel settings continue to appear in print.

However, intentions are sometimes found to be poor predictors of behaviour even over relatively short time periods, as illustrated in the study by Kor and Mullan (2011). In the TPB, lack of actual control over behaviour will tend to reduce the predictive validity of intentions.

A frequently voiced criticism of the TPB and other reasoned action models is that they are too 'rational,' not taking sufficient account of cognitive and affective processes that are known to bias human judgments and behaviour. It is true, of course, that the TPB emphasises the controlled aspects of human information processing and decision making. Its concern is primarily with behaviours that are goal-directed and steered by conscious self-regulatory processes. This focus has often been misinterpreted to mean that the theory posits an impassionate, rational actor who reviews all available information in an unbiased fashion to arrive at a behavioural decision. In reality, the theory draws a much more complex and nuanced picture most importantly, there is no assumption in the TPB, that behavioural, normative and control beliefs are formed in a rational, unbiased fashion or that they accurately represent reality. Beliefs reflect the information people have about the performance of a given behaviour, but this information is often inaccurate and incomplete; it may rest on faulty or irrational premises, be biased by self-serving motives, by fear, anger and other emotions, or otherwise fail to reflect reality. This is a far cry from a rational actor. However, no matter how people arrive at their behavioural, normative and control beliefs, their attitudes towards the behaviour, their subjective norms and their perceptions of behavioural control follow automatically and consistently from their beliefs. It is only in this sense that behaviour is said to be reasoned or planned. Even if inaccurate, biased or otherwise irrational, our beliefs produce attitudes, intentions and behaviours consistent with these beliefs (Geraerts et al., 2008; Sandberg and Conner, 2008; McKee et al., 2003).

Perhaps the most frequently mentioned biasing factors ostensibly neglected in the TPB are affect and emotions (Rapaport and Orbell, 2000; Conner and Armitage, 1998; Van der Pligt et al., 1998). In the TPB, affect, and emotions enter in two ways. First, they can serve as background factors that influence behavioural, normative and control beliefs. Thus, it is well known that general moods can have systematic effects on belief strength and evaluations. Compared to people in a negative mood state, people in a positive mood tend to evaluate events (such as the consequences of behaviour) more favourably and to judge favourable events as more likely to occur (Forgas et al., 1984; Johnson and Tversky, 1983; Schaller and Cialdini, 1990). Also, affective states can also help to select the behavioural, normative and control beliefs that are readily accessible in memory (Clark and Waddell, 1983; McKee et al., 2003). Thus, reported by McKee et al. (2003) that, in a free-response elicitation session, participants in a negative mood state were more likely to emit unfavourable beliefs about smoking compared to participants in a positive mood state.

In the TPB, the most detailed substantive information about the determinants of behaviour is contained in a person's behavioural, normative and control beliefs. The theory does not specify where these beliefs originated; it merely points to a host of possible background factors that may influence the beliefs people hold factors of a personal nature such as personality and broad life values; demographic variables such as education, age, gender and income; and exposure to media and other sources of information. Factors of this kind are expected to influence intentions and behaviour indirectly by their effects on the theory's more proximal determinants. Most empirical studies assess a few demographic characteristics if only considered as control variables. Some studies, however, focus on one or more background factors that, for intuitive or theoretical reasons, are considered to be relevant to the behaviour under investigation (Kor and Mullan, 2011; McEachan et al., 2011; Conner et al., 2000).

To date, applications of the TPB in the business start-up context have been limited to explaining the formation of intentions. Twenty-five years after the appearance of Bird's (1988) seminal article, Schlaegel and Koenig's (2014) meta-analysis on determinants entrepreneurial intentions discovered only three published entrepreneurship studies that have applied the full TPB, and thus include the intention–behaviour relationship. However, those studies do not focus on business start-up intentions, for instance (Kolvereid and Isaksen, 2006), use samples that are limited in size (Kautonen et al., 2013), or analyze data that concerns a niche population (academic scientists) and suffers from non-random sample attrition (Goethner et al., 2012). The scarcity of studies including the intention–behaviour relationship is somewhat surprising. After all, entrepreneurship is about actions rather than mere intentions, and the extent to which entrepreneurial intentions translate into action defines the relevance of intention research. Moreover, the existence of a sizeable intention–action gap would point to the importance of studying additional factors rather than mere intentions for predicting and explaining entrepreneurial behaviour.

This analysis contributed to the entrepreneurial intentions literature by presenting a test of the TPB model in the context of Brunei students' potential entrepreneurial intentions. The analysis adopts the theory as its originator (Ajzen, 2011) and has made some additional co-relationships to further understand the existing relationship patterns. Moreover, the size and scope of the sample allow running an extensive range of robustness tests. It has found out substantial support for all hypothesized relationships, and also finds them to be robust across a range of different demographic and biographical characteristics of individuals like gender, family backgrounds, and educational attainments.

This study preferred the TPB because of its consistent and detailed specification, the great volume of research across disciplines dedicated to applying, criticizing, and advancing the model (Armitage and Conner, 2001; Sheeran, 2002). Further, it provided an opportunity to compare, thus cross-validate, findings with those found in a range of other research domains.

The variability of these findings suggests that although support for the TPB is substantial, entrepreneurship research cannot rely solely on evidence from other domains to validate intention as a predictor of start-up behaviour. Moreover, many intention–behaviour studies concern single acts such as taking medicine, using contraceptives, exercising, or voting (Armitage and Conner, 2001; Sheeran, 2002; Mery Citra Sondari, 2014). In contrast, starting a new venture is a complex mid-term goal that requires considerable effort to complete, and involves multiple actions that may be performed in any number of sequences (Lichtenstein et al., 2007; Liao et al., 2005; Newbert, 2005). Furthermore, the role of intentions may not be as straightforward in new venture creation as it is in other research domains. It has been suggested that not all behaviours that eventually lead to a start-up are intended as such when they are performed (Bhave, 1994). The classic case is the hobbyist who gradually discovers that a business can be made out of the hobby. Similarly, effectuation theory (Anik Kusmintarti et al., 2014; Sarasvathy, 2001) posits that means-driven individuals can take enterprising action without necessarily having the ultimate goal of an independently owned business in mind. Thus, the intention to start a business is not necessarily the starting point of the entrepreneurial process.

Also necessity entrepreneurs who, although they may not prefer to become an entrepreneur, still intentionally take steps to set up their venture; and perhaps even “accidental entrepreneurs” (Fitzsimmons and Douglas, 2010) who may later say that “they never intended to become entrepreneurs,” but at some point in time must have taken deliberate steps to make the business operational.

Finally, although some research on the TPB has raised a number of contested issues concerning the specification of the model and its individual components (Conner and Armitage, 1998), including a number of studies on entrepreneurial intentions (Anik Kusmintarti et al. 2014; Liñán and Chen, 2009) these modifications have not become established parts of the TPB. Therefore, the present study adopts the model as currently specified (Ajzen, 2011), and sets out to test its predictive relevance in the potential entrepreneurial intentions context.

Research Methods:

This research is designed as a cross-sectional research which uses the individual as the unit of analysis. Quantitative methodology is utilized in this study. Quantitative research approach primarily follows the confirmatory scientific method, because its focus is on hypothesis testing and theory testing. Quantitative researchers consider it to be of primary importance to state one’s hypotheses and then test those hypotheses with empirical data to see if they are supported.
Since the study has analysed the potential entrepreneurial intentions of the Brunei youth, both primary data and secondary data were utilized. Furthermore, there were many advantages of using primary data as the researcher is collecting information for the specific purposes of the study. In essence, the questions were tailored to elicit the data that will help with the study.

The study has been gathered numerical data to assess the relationship between the variables. This made possible to produce statistical information on entrepreneurial intentions among students in Brunei Darussalam. Further secondary data were important in the study since secondary sources helped to define the research problem; understand the previous research conducted in the similar nature and also to estimate the population and in structuring the sample. For instance, the government statistics on a country will help decide how to stratify a sample and, once the sample estimates have been calculated, these can be used to project those estimates to the population or previously collected and published data often consist of articles, books, newspaper and magazine articles, internal and external case company material and Internet material. For this study, secondary data gathered from various sources such as the Brunei government web sites, various national development plans and statistical reports, economic surveys, government reports and publications, journal, periodicals, internet sources and websites.

600 questionnaires were distributed among the students in randomly selected higher learning institutions in Brunei. 450 questionnaires were received (75% response rate). This sample size is derived based on 114,000 population of young people (age 18-29), takes into considering the margin of error (the deviation between the opinions of the respondents and the opinion of the entire population) 5%

and 95% confident level (how sure you can conclude your findings). However, the respondents are not restricted to students by area of study to find out various intentions towards entrepreneurship.

Results and Discussion:

Entrepreneurial knowledge and Entrepreneurial intentions:
Respondents had the average understanding of the basic entrepreneurial knowledge. This kind of understanding is undertaken through formal learning, informal activities, from newspapers and journal and the media. Entrepreneurial knowledge is only a single way to interpret the intention to become future entrepreneurs. Because even having knowledge is not enough because people have to have the willingness to pursue a career in entrepreneurship. During the socialization period, students learned about different skills and obtained new experiences, which they will realize, both positive and negative consequences before they opt to select a lifelong career. Therefore entrepreneurial knowledge is only a single determinant of entrepreneurial intention.

The relationship between subjective norms and Entrepreneurship intention:
The subjective norms refers to the degree to which family, friends, peers and society at large expect or pressure the individual to perform the behaviour in question. In this study, it is noted that the expectation is invariably linked to the prestige and respect accorded to entrepreneurship as a career choice by society. Similar findings were also documented by (Audet, 2001) that emphasize the family/parents' degree of influence be stronger on children's intentions. The study results confirmed that the social environment and family could influence children's career selection. This confirms the TPB models' suggestion of that the greater the expectation or pressure, the greater the gravitation towards the behaviour.

Gender, immediate career preference & Area of study:
Furthermore, across the world, awareness of female entrepreneurship has increased and is characterised by the increasing numbers of women in business (Buttner, 1993). Female entrepreneurs are thus recognised as making an important contribution to the economy, both as a source of employment and potential growth (Acs, 2005). Nonetheless, entrepreneurship is frequently described as a form of masculinity (Bird and Brush, 2002; Bruni et.al. 2004) and women remain under-represented in the entrepreneurial population. So that, a significant gender gap exists in rates of entrepreneurial activity across genders (Acs, 2005). Moreover, there are considerable differences between male and female entrepreneurship; motivations, financing strategies, risk perception and even success criteria are not the same (Galloway et al., 2002; Buttner and Moore, 1997). There are also considerable variations between countries; (Acs, 2005) notes that, except Brazil, Peru, Japan, men are more likely to engage in entrepreneurial activity. For example, the activity rate for US females is 25 percent, but in Thailand 95%.

Gender differences in entrepreneurial activity are well documented in the literature (Gatewood et al., 2003; Reynolds et al., 2004).Though in recent years the number of women entrepreneurs has increased dramatically (De Bruin et al., 2006), empirical evidence indicates that still, almost twice as many men as women become entrepreneurs and that these differences are consistent across countries (Acs et al., 2005).

However, this study confirmed that females have very high entrepreneurial intentions than males. Business related study areas also have a direct impact on intentions towards entrepreneurship. Combined effects of several factors have greatly impacted towards entrepreneurial intentions of Brunei youth.

Preferred business to be started:
This finding concluded that irrespective of the type of venture, females are more interested in entrepreneurship than males. However, among the males, the majority preferred food and beverage businesses. Most of the females were more likely to start their business on a very small scale to cater only for niche markets. They preferred baking and catering industry. It is assumed that female and male entrepreneurs have different profiles. For example, they have different ways of doing business and may start and run different types of firms. Thus, it is noted that female entrepreneurs can contribute to the diversity in entrepreneurial activities and economic performance, by way of their distinctive characteristics. Chaganti and Parasuraman, (1996), stated that regarding products and services it might be argued that female entrepreneurs tend to operate in niche markets like most female dominated cottage industry such as baking and catering. Female entrepreneurs often pursue a specialization strategy offering tailor-made goods and services. The study confirmed that females have more intentions on entrepreneurship and most preferred industry is food and beverages among females. Females tend to do the businesses in niche products and services. They are willing to do information technology related businesses which are a growing industry in the Brunei and globally. This strongly suggests that females have more risk taking propensity and proactive personality than males.

Education attainment qualification and the probability of becoming an entrepreneur:
Diploma and Higher National Diploma students had a high probability of becoming entrepreneurs due to their exposure on entrepreneurship related activities at their colleges. They were likely to participate in more business related activities. They preferred the kind of group activities (e.g. soft skills development programs, group assignments, apprenticeship programs) than conventional classroom learning. However, there might be some other influential factors outside this subject focus as well.

Immediate career preference and career preference after five years:
The majority of the students were more likely to work in the public sector immediately after their graduation. However, 16% preferred to be involved in entrepreneurship. These were the respondents, who possess more proactive personality and risk taking propensity. However, after five years, the proportion of government job preference (42%) and the entrepreneurship preference (41%) is getting very close. This preference to work from the public to enterprises can be a reflection of the transformation process of beliefs, attitudes and intentions due to the growth of knowledge, and experiences Lent et al., 1994). Prior research suggests that entrepreneurial careers fit this pattern (Davidsson, 1991). This study also supports that career related decision is a process in which beliefs, attitudes and intentions evolve. The future is becoming better for Brunei to have more talented young entrepreneurs. It is clear if the students have proper guidance, support and motivation, there will be more entrepreneurs in the future to support Brunei economic diversification endeavours and to realize Brunei Vision 2035 (Wawasan 2035).

Conclusion

Emerging young entrepreneurs may create new ventures and new job opportunities over the next five years in all regions. It is widely documented that young people believe that they have the capacity to start a business and that there are good business opportunities. It has been reported that approximately a third of all young entrepreneurs are driven to entrepreneurship by necessity. Youth Business International (YBI) states that ten percent of the youth are involved in either nascent or new business with the majority (80%) of these youth businesses being opportunity-driven. Hence, entrepreneurship awareness and the drive among youth towards entrepreneurship are getting better globally.
The study examined the Brunei students' intention towards the pursuance into entrepreneurship. It also examined the level of influences of attitudes towards entrepreneurship, entrepreneurial knowledge, subjective norms and perceived behaviour of the youths' entrepreneurial intentions. The survey was conducted based on questionnaire survey on 450 students in selected public and private higher learning institutions in Brunei. The results show that more students have positive intentions to pursue entrepreneurship. The findings seem to be consistent with previous research (Boyd and Vozikis, 1994; Tubbs and Ekelberg, 1991; Carrier, 2005) which found a positive link between participation in entrepreneurship knowledge, attitudes, subjective norms and perceived behaviour control and entrepreneurial intention.

The results from the statistical tests largely validated the predictive power of the Theory of Planned Behaviour (TPB) model in the context of the Brunei students. The study is consistent with a growing body of empirical evidence from a variety of cultural and institutional contexts, such as Norway (Kolvereid, 1996), United State of America (Krueger et al., 2000), France and the United Kingdom (Soutaris et al. 2007), Spain (Liñan et al., 2011), Malaysia (Amran Md Rasli and Saifur Rehman Khan, 2013). In sum, the results from the exploratory study suggest the Theory of Planned Behaviour model (TPB) is an appropriate theoretical anchor to study the potential entrepreneurial intentions among Brunei students. Subjective norms have a strong positive association with entrepreneurial intentions, while entrepreneurial knowledge, entrepreneurial attitudes, perceived behaviour control failed to reach that significance. Furthermore, the study found out that respondents demonstrated a high dependence on the support of their immediate social groups. Due to this, the influence of subjective norms towards entrepreneurship is high. Brunei students are reluctant to accept the risk, demonstrate very low internal locus of control and less futuristic. Because of this nature of their behaviour, the results show the low influence of perceived behaviour control on entrepreneurial intentions. Entrepreneurial education also has a low level of impact on entrepreneurial intentions and entrepreneurial attitudes. It is a profound fact that formal education is the main agent that inculcates the attitudes and the behaviour of the young generation. Therefore entrepreneurship education should be embedded in the school curriculum. Thereby entrepreneurship will become an attractive concept and alternative career choice.

Relevant stakeholders' interventions to enhance entrepreneurial intention should be combined to include cultural factors such as values, attitudes, subjective norms and behavioural control or this can be institutionalized through the education system. Interventions directed at behavioural, normative, or control beliefs may succeed in producing corresponding changes in attitudes, subjective norms, and perceptions of behavioural control and these changes may further be able to influence entrepreneurial intentions in the desired direction. The intervention will still be ineffective, however, unless individuals are in fact capable of carrying out their newly formed entrepreneurial intentions. It is therefore incumbent on the investigator to ensure that there is a strong link to convert entrepreneurial intentions to entrepreneurial behaviour. When this relation is weak, steps must be taken to strengthen it.

Therefore it can be understood that through education, attitudes can be cultivated and developed. Therefore it is important for the government and relevant policy makers to understand how to develop and nurture potential entrepreneurs even while they are still at schools. Strong government commitment in this matter is a prerequisite if the country wants to produce vibrant young entrepreneurs and thereby to diversify the economy and to cherish the Brunei Vision (Wawasan 2035).

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Effectiveness of Organizational Management in Three Business and Technology Incubator

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Abstract - Small and Medium Enterprises (SMEs) plays an important role to accelerate economic growth by creating new business and employment, to increase income and foreign exchange, and to contribute in strengthening national economic structure. However, the business environment requires a shift in the ability of SMEs to become responsive toward changes in market demand as well as technological developments. Incubator is an institution that provide services and incentives to improve the competitiveness of SMEs, in improving the efficiency and effectiveness in incubator management, it needs supported by suitable activities. This study aims at (1) to identify the incubator management in three incubator business and technology (IBT), (2) to analyze the key factor in incubator management and to identify priority setting of key factor of incubator management in three IBT, and (3) to compare the effectiveness of organizational management at three IBT. The data tabulation and analysis were carried out using literature study, in-depth interview, Principal Component Analysis (PCA) and Analytic Hierarchy Process (AHP) and analyze the effectiveness of organizational management in three incubator. The result has been identified the key factors in the incubators management, sequentially from the criteria of resources, services, selection system, strategies, goal and management. Incubator A has strong significance in service criteria compared to the two other incubators but less significance in objective and management and strategy criteria; Incubator B has strength in objective and management, strategy, resources criteria. Goal and management criteria provide a strong significance as a factor that encourages improvement in the incubators management while the service criteria as a factors that provide a less significance. Incubator A and C focus on external activities such as strengthening strategies, goal and management. Nevertheless, Incubator B, reinforce the activities on strategy and services criteria. Based on analysis of effectiveness, Incubator B has been manage the incubator more effective than A and C.

I. Background

The role of Small and Medium Enterprises (SMEs) in the domestic economy is increasing especially after crisis in 1998 (Tambunan, 2010). They plays an important role to accelerate economic growth by creating new business and employment, to increase income and foreign exchange, and to contribute in strengthening national economic structure. In times of crisis, SMEs demonstrate their ability to cope with the crisis, when many large companies cannot be survive. It can be seen from the contribution of SMEs, to employment opportunities reach more than 90% although the contribution to the value-added national economy is only about 58% (Hubeis, 2011).

However, the business environment requires a shift in the ability of SMEs to become responsive toward changes in market demand as well as technological developments. Incubator is an institution that provide services and incentives to improve the competitiveness of SMEs (Bergek and Norman, 2008), in improving the efficiency and effectiveness in incubator management it needs supported by suitable activities and factor that can be determined as a successful incubator in term of improving SMEs capability. Incubators play a role in accelerating value creation by reducing the level of risk of financing and failure with conducive environment support (Khalid et al, 2012).

As a manifestation to grow technology-based entrepreneurs, various parties are making efforts to develop incubators as part of the mandate implementation of Government Regulation No. 27 of 2013. Recorded until 2016, the Indonesian Business Incubator Association (AIBI) as an organization that accommodates the entire Indonesian incubator association has had 94 Members, with a total of 73 Universities or about 77% of registered incubators are incubators initiated by universities.

II. Literature review

The National Incubator Association provides the following incubator definitions: Business Incubator is a Dynamic process of Business enterprise development. Incubators nurture young firms, helping them to survive and grow during the startup period when they are almost vulnerable. Incubators provide hand-on management assistance, access to financing and orchestrated exposure to critical business or technical support services. They also offer entrepreneurial firms shred office services, access to equipment, flexible lease and expandable space – all under one roof. (www.nbia.org, 2014).

Lalkaka (1997) states that the performance of an incubator should be measured, as it shows the development and survival of the tenant companies in it. In the various literatures concerning the determination of key successes of incubators, each expert expresses a different but no contradiction between one and the other. Wagner (1997) identifies that proximity to the center of science as one of the keys to the success of the incubator establishment. Wagner also reveals that feasibility study as one of the keys to a project's success in an incubator. Arlotto et.al (2011) states that the performance of the incubator is largely determined by the performance of the incubator manager, who has a good entrepreneurial spirit and also can motivate his team.

Smillor (1987) reveals at least 10 factors managing incubators, namely business and management knowledge, financial consulting, internal service, community support, business networking, development and strengthening of technology education in accordance with industry needs, vision, networking with research institutions, clear planning, policies and procedures, and appropriate industrial development policies.

Lee (2000) revealed in his research that the key to success in incubator management in Taiwan is:

1. A clear background is supported with goals and policies. The Taiwan incubator with clear objectives and technological transfer capabilities has a greater success rate than similar incubators.

2. Managers and Supporters. It would be very beneficial for an incubator if it is affiliated with a college that not only provides technological support, but also provides access to college facilities.

3. Type of company established and standard of establishment. The establishment of a company in an incubator is in line with the business being run.
4. Service, is one of the strengths of incubator, because this service is useful for tenant business and alliance development.

Lalkaka (1997) suggests that the key factors of successful incubators are strongly influenced by the incubator environment itself, the national and international environmental conditions. And each environment conditions such as the influence of supportive government policies, business environment, market opportunities and so forth.
Chiu (2007) revealed that there are five factors of incubator management ie Resources, Service, Selection System, Strategy, Objectives and Management. In his description, Chiu states that in the resource, an incubator must have the ability to innovate and commercialize, have a good management system, supported by managers who have entrepreneurial spirit and good business management skills, supported by good relationships with parent institutions.

In factor services, incubators must have the capability to assist in the development and transfer of technology, this should be supported by the incubator's ability to understand business and legal operations. The incubator should be able to provide office services to its tenants, as well as the ability to provide quick solutions for tenants or other stakeholders.
In the selection system, the incubator should choose a high-initiative team, which can manage the project. The incubator should be able to see technology or products that have market potential and appropriate funding source. The incubator should be supported by a good strategy, by applying the selection of industrial development according to the core capability of the parent institution, improving the ability to grow the business and promotion, recruit the knowledge-based company or service. The incubator should be able to promote to the strategic alliance of incubators, and encourage the incubator staff to initiate their business. In terms of objectives and management, incubators should have clear objectives, supportive government policies and comprehensive incubator management systems.
On the other hand, incubators have performance indicators, expressed by the amount of employment created, tenant profit, the amount of commercialized research, export earnings, policy impacts, the number of alumni and income increase (Mubaraki, 2011). In order to meet the achievement of the indicator, the incubator requires activity parameters that have important contribution in achieving performance.

III. Research methods

The Study was conducted in, Cibinong, Bandung and Solo form July until November 2016. The data were primary and secondary data. Primary data were collected by using questionnaire and interviewing the experts. The secondary data were collected by literature review. The sampling technique was carried out using purposive sampling, using certain consideration. The samples of this study were 16 experts from Incubator A, B and C.

The data tabulation and analysis were carried out using literature study, in-depth interview, Principal Component Analysis (PCA) and Analytic Hierarchy Process (AHP) and analyze the effectiveness of organizational management in three incubator. The research has been identify the profile of organizational management at three business and technology incubator.

IV. Result and Discussions

Based on the literature study, the incubator management factor is grouped into five main factors: resources, services, Selection, Strategy, objectives and management. This grouping refers to the groupings performed by Chiu (2007). Factors that will be the objects in the study are listed in Table 1

Variables 1		Variables 2		Variables 3		Variables 4		Variables 5	
R	Resouces	S	Services	SS	Selection System	Sa	Strategy	GM	Goal and Management
R1	Ability to innovate and commercialisation	S1	Assistance in developing and Transfer of Technology	SS1	Have a high initiative team	Sa1	The ability to choose industrial development according to the core capabilities of the parent institution	GM1	Clear organizational goals
R2	Good Management system	S2	Knowledge of business operations and law	SS2	Good project management	Sa2	Ability to develop business and promotion	GM2	Supportive Government Policy
R3	Good Entrepreneur Manager	S3	Office Services	SS3	Have good development potential	Sa3	Recruit knowledge-based or service-based companies	GM3	Comprehensive Incubator Management System
R4	Good Relationship with parent institution	S4	Ability to solve problems	SS4	Have an appropriate funding source	Sa4	Strengthen promotion of strategic alliances from incubators	GM4	Vision
R5	Good Business ability	S5	Internal services	SS5	Tenant selection criteria	Sa5	Encourage staff for business	GM5	Appropriate industry development policies
R6	Community Support	S6	Financial consultation	SS6	Tenant graduation criteria	Sa6	Networking with research institutes	GM6	Clear planning, policies and procedures
R7	Advisory Board	S7	Mentoring and Networking	SS7	Selection criteria for incubated technology	Sa7	Development and strengthening of technology education required by industry	GM7	Consensus of Stakeholders
R8	Good Financial ability	S8	Access to funding and other support	SS8	Evaluation Business Selection and Strategy to be developed	Sa8	Business network	GM8	Supportive government finance administration
R9	Stakeholder support					Sa9	Conduct a professional manager's recruitment process		
R10	Entrepreneur Funding					Sa10	Planning to attract investors		
R11	Ability of Incubator Manager					Sa11	Proximity to the University		
R12	Facility and location					Sa12	Feasibility Analysis		
R13	Age and Size of Incubator					Sa13	Recruiting good quality entrepreneurs		
R14	Infrastructure Support					Sa14	Sustainability factor		
R15	Initial Funding from government					Sa15	Map of Alumni Incubator		
R16	Sponsor Board					Sa16	Incubator management policies		
R17	Local Consultant					Sa17	Selection of incubator types		
						Sa18	Market opportunity		

Table-1: Research Variables
Adapted from: Chiu(2007), Hubeis (2011), Kuo (2001), Lalkaka(2000), Smilor (1987), Mbewana (2006), Verma (2004)

1. Identifying Incubator Management Profile

The measurement of incubator profiles in this study, based on the five main activities in incubator management ie resources, services, selection systems, strategies, objectives and management along with sub-activity therein. Measurements are structured to provide an overview of the actual condition of incubator. Based on the measurement results obtained Incubator A has a resource value of 47.06%, services 75%, 62.5% selection system, 44.44% strategic, and the goals and management 37.5%.

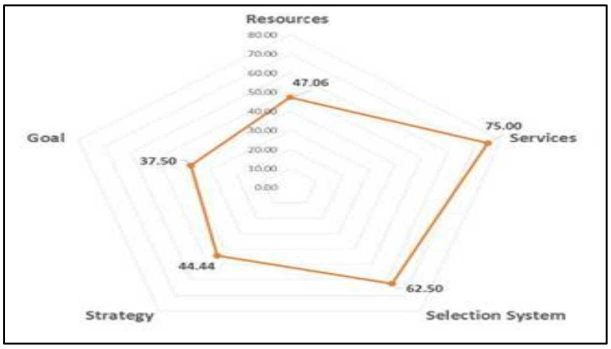

Figure-1: Profile of Incubator A

The value of services factor, which is high because Incubator A has the capacity to transfer technology as stated in the duties and functions, by providing office services for tenants. Incubator A has human resources (HR) with different educational background, especially business and commercial law that provides business and legal views. But from mentoring services, Incubator A does not have a standard mentoring pattern yet, the mentoring is still relying on formal internal HR.

However, Incubator A has a low value in goal and management, because the incubation program that was born was not from the consensus of the parties, but was born from the initiation of several individuals. The impact is, not every individual within the organization understands the vision and purpose of the incubator organization. In addition, the incubator is not a stand-alone organization, but part of the program that embraces the existing organizational structure, the consequently incubator planning, policy formulation and procedures still overlap with the organizational structure. The data in Figure 1 shows the Incubator A allocating the largest incubator management plan on service activity and selection system activities. While the smallest activity on resources, strategy, goals and management.

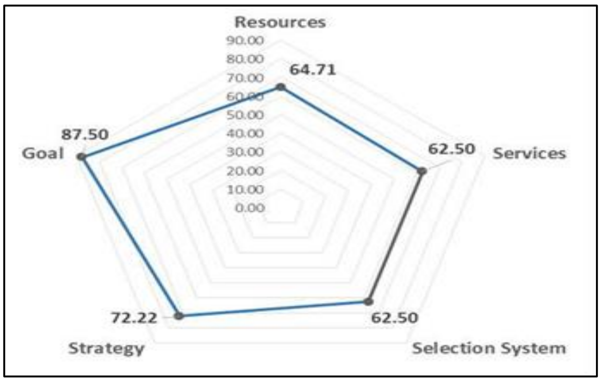

Figure-2: Profile of Incubator B

Incubator B has a profile as shown in Figure 2, has a resource value of 64.71%, services 62.5%, 62.5% selection system, strategy 72.22%, and the goal and management 87.5 %. The advantages possessed by Incubator B are early adopter factors, Incubator B puts SOEs as early adopters of technology. In the selection of tenants, the field focus of incubator development is in line with the core business of the parent company. In addition, Incubator B established by the University has sufficient access to support the needs, lecturers who act as mentors, students who are positioned as aspiring entrepreneurs. But also access to campus facilities needed in product development. There are about 40 accessible laboratories, which are part of the services of Incubator B to the tenant.

One of the weaknesses in implementing strategy in Incubator C is the low involvement of human resources. Incubator C has 52 employees but the human resources involved in the incubation program are only four people. Most of the human resources are focused on managing the training, which is a source of income. Organizationally, Incubator C simply understands the vision and goal of the organization. It causes high value for goal and management factor.

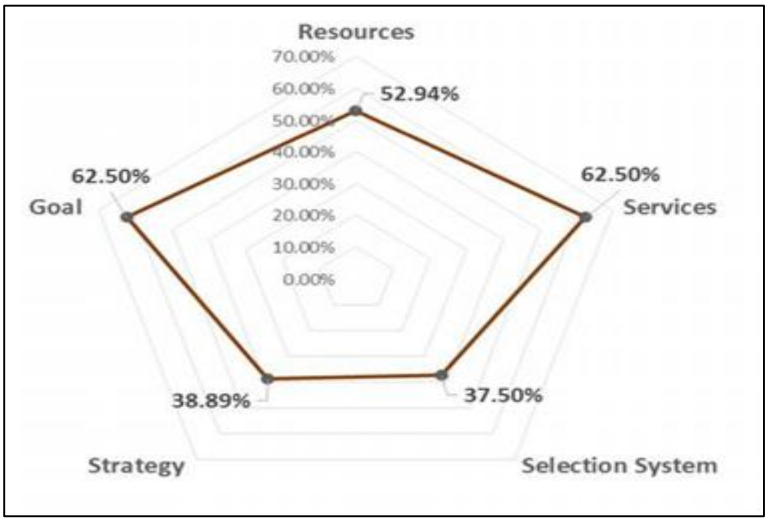

Figure-3: Profile of Incubator C

On the other side, Incubator C is an independent organization in the search for funds, able to do business so have a wide enough network, Incubator C has become a mature organization in providing services, except mentoring services that have not run properly. Figure 3 shows that Incubator C allocates the largest incubator management plan on service, goal and management activities. While the smallest activity is in resources, strategy, selection system.

2. Analyzing the key factor and priority setting in incubator management

Jung and Marron (2009) mentioned that The High Dimension, Low Sample Size (HDLSS) data situation occurs in many areas of modern science and the asymptotic studies of this type of data are becoming increasingly relevant. In the case of incubator management, the sample number of incubator managers is limited but the variables are 59, so this study is relevant enough to see the dominant factor in the management of the incubator. Based on Bartlett's Test of Sphericity with Chi-Square 129,536 (df 66) and the sig = 0,000 <0.05 value that the correlation matrix is not an identity matrix in order to analyze the main components. In addition, the resulting KMO value is 0.537 and p-value 0,000 (<0.05), the value falls within the "adequate" category appropriate for the purposes of factor analysis.

Principal component analysis for resources factor shown, there are three factors were obtained: first factor (F1) was the most dominant factor having eigenvalue of 5,534 and able to explain the total diversity of 46,114% (see table 2). This factor comprises R3 = Manager who has a good entrepreneurial spirit, R5 = Have good business management skills, R9 = Support from stakeholders, and R12 = Facilities and Location. The first factor which is consist by three dominant factor, combine into a new factor called professional incubator manager.

The second factor (F2) is called the supporting factor has an eigenvalue of 2.405 and is able to explain the total diversity of 20.041%. The second factor consist only one factor, initial funding from government.

The third factor (F3) is called an additional factor having an eigenvalue of 1.138 and is able to explain the diversity of 9.28%. The third factor consist by two factor, R7=advisory board; R14=infrastructure support, combine into a new factor called infrastructure support. Table 3-6, Shows the results of analysis of various factors. Table 7 summarize a new variable which is reduction result by principal component analysis.

No	Factor	Variance	Eigenvalue	Factor Loading	Variance %
1	F1	R3	5,534	0,843	46,114
2	F2	R5	5,534	0,816	46,114
3	F3	R9	5,534	0,714	46,114
4	F4	R12	5,534	0,762	46,114
5	F5	R15	2.405	0,928	20,041
6	F6	R7	1.138	0,764	9,48
7	F7	R14	1.138	0,701	9,48

Table-2: Dominant factor of Services Variables

No	Factor	Variable	Eigenvalue	Faktor Loading	Variance %
1	F1	S7	2,970	0,906	42,434
2	F2	S2	1,172	0,877	16,743
3	F2	S3	1,172	0,784	16,743

Table-3: Dominant factor of Services Variables

No	Factor	Variable	Eigenvalue	Faktor Loading	Variance %
1	F1	SS2	4,461	0,737	55,756
2	F1	SS3	4,461	0,955	55,756
3	F1	SS6	4,461	0,748	55,756
4	F2	SS1	1,082	0,896	13,521
5	F2	SS7	1,082	0,752	13,521

Table-4: Dominant factor of Selection System Variables

No	Factor	Variable	Eigenvalue	Faktor Loading	Variance %
1	F1	Sa1	5,519	0,818	50,171
2	F1	Sa11	5,519	0,932	50,171
3	F1	Sa16	5,519	0,756	50,171
4	F1	Sa18	5,519	0,739	50,171
5	F2	Sa4	2,319	0,706	21,081
6	F2	Sa8	2,319	0,819	21,081
7	F2	Sa9	2,319	0,837	21,081
8	F3	Sa2	1,137	0,816	10,333
9	F3	Sa3	1,137	0,905	10,333

Table-5: Dominant factor of Strategy Variables

No	Factor	Variable	Eigenvalue	Faktor Loading	Variance %
1	F1	GM1	4,036	0,861	50,455
2	F1	GM4	4,036	0,796	50,455
3	F1	GM5	4,036	0,843	50,455
4	F2	GM6	1,509	0,788	18,867
5	F2	GM7	1,509	0,950	18,867
6	F3	GM2	1,221	0,872	15,259
7	F3	GM8	1,221	0,716	15,259

Table-6: Dominant factor of Goal and Management Variables

Factor		**New Variable**
Resoruces	A1	Proffesional Manager
	A2	Initial Funding from Government
	A3	Infrastructure Support
Services	B1	Mentoring and Networking
	B2	Jasa Perkantoran dan Konsultasi Bisnis
Selection System	C1	Tenant Graduation Criteria
	C2	Selection criteria for tenant and incubated technology
Strategy	D1	Opportunity-Based Incubator Management Policy
	D2	Developing Strategic Alliance Incubator
	D3	Recruitment Process Knowledge-based Enterprise
Goal and Management	E1	Vision
	E2	Clear planning and management policies
	E3	Appropriate Government Policy

Table-7: New Variable

3. Analyzing priority setting key factor of incubator management

The result has been identified the key factors in the incubators management, sequentially from the criteria of resources, services, selection system, strategies, goal and management. This criterion consists of various activities that support the management of incubators, it should be analyze the priority level of each activities.

In Table 8, shows that strategic criteria are a top priority on Incubator A with a priority value of 0.325. Based on these results shows that incubator management is focused on strategic activities, the sustainability of the incubator is determined by the application of an incubator growth strategy in capturing potential project from outside the organization. The strategy aspect is closely related to the external environment of the incubator.

Factor	Value	Variable	Value
Resoruces	0.168	Proffesional Manager	0.647
		Initial Funding from Government	0.12
		Infrastructure Support	0.232
Services	0.16	Mentoring and Networking	0.862
		Jasa Perkantoran dan Konsultasi Bisnis	0.138
Selection System	0.172	Tenant Graduation Criteria	0.306
		Selection criteria for tenant and incubated technology	0.694
Strategy	0.325	Opportunity-Based Incubator Management Policy	0.437
		Developing Strategic Alliance Incubator	0.323
		Recruitment Process Knowledge-based Enterprise	0.239
Goal and Management	0.175	Vision	0.696
		Clear planning and management policies	0.188
		Appropriate Government Policy	0.116

Table-8: Priority Factor in Incubator A

The next priority is the objective and management criteria (0.175). Understanding the objectives and incubator management is a preliminary factor determining the success of incubator management, incubator vision is a high priority for all incubator managers to understand. The service criteria has a low value in the incubator A (0.160). The activities on mentoring and network development as internal incubator factors is a part of service criteria, which should be the major concern in supporting the success of tenants in developing their business. Relan (2012) states as many as 90% of startup companies in the United States or the world are failed. They grow in the incubator, but inadequate mentoring support. Mentoring activity is an auxiliary activity for tenants in development of production aspect, market aspect and legal aspect.

In Table 9, shows that strategic criteria also as a top priority on Incubator B with a priority value of 0.293. Based on these results shows that incubator management is focused on strategic activities, the sustainability of the incubator is determined by the application of an incubator growth strategy in capturing potential project from outside the organization. The activity on the strategic criteria in incubator B that has the highest priority is the opportunity-based incubator management policy, in accordance with actual conditions occurring. Incubator B has a good relationship with the university since they are initiated by the parent university which is positioned as a resource pool and technology pool and proximity to the parent institution that has always adopted the various technological developments developed by tenants as long in-line with their core business.

The next priority is service criteria (0.240) within the activities on mentoring and network development as internal incubator factors should be the major concern in supporting the success of tenants in developing their business.

Factor	Value	Variable	Value
Resources	0.16	Proffesional Manager	0.671
		Initial Funding from Government	0.146
		Infrastructure Support	0.183
Services	0.24	Mentoring and Networking	0.837
		Jasa Perkantoran dan Konsultasi Bisnis	0.163
Selection System	0.103	Tenant Graduation Criteria	0.272
		Selection criteria for tenant and incubated technology	0.728
Strategy	0.293	Opportunity-Based Incubator Management Policy	0.527
		Developing Strategic Alliance Incubator	0.268
		Recruitment Process Knowledge-based Enterprise	0.205
Goal and Management	0.203	Vision	0.706
		Clear planning and management policies	0.186
		Appropriate Government Policy	0.109

Table-9: Priority Factor in Incubator B

The criterion that has low priority weight is the selection system (0.103), indicating the selection system is not currently a priority in the management of the incubator, incubator B is quite comfortable with the selection system already running because the technology that goes into the incubator comes from students and lecturers, the system Initial selection is done from the selection of research proposals conducted by the university. Indirectly the selection process is tiered.

Incubator C quite similar with Incubator A, strategic criteria become top priority (0.325), it shown on table 10. Based on these results shows that incubator management is focused on strategic activities, the sustainability of the incubator is determined by the application of an incubator growth strategy in capturing potential project from outside the organization. The strategy aspect is closely related to the external environment of the incubator.

Factor	Value	Variable	Value
Resources	0.083	Proffesional Manager	0.711
		Initial Funding from Government	0.193
		Infrastructure Support	0.096
Services	0.112	Mentoring and Networking	0.833
		Jasa Perkantoran dan Konsultasi Bisnis	0.167
Selection System	0.092	Tenant Graduation Criteria	0.366
		Selection criteria for tenant and incubated technology	0.634
Strategy	0.422	Opportunity-Based Incubator Management Policy	0.494
		Developing Strategic Alliance Incubator	0.285
		Recruitment Process Knowledge-based Enterprise	0.221
Goal and Management	0.291	Vision	0.709
		Clear planning and management policies	0.21
		Appropriate Government Policy	0.081

Table-10: Priority Factor in Incubator C

4. Measurement of Effectiveness of Incubator Management

Government and higher education institutions are currently competing to develop incubators, hoping to lead to an increase in the commercialization of research results, growth of technology based companies, job creation and attracting investment in areas where incubators are established. Further incubators are seen as one way in the stages of value creation of ideas, research through a combination of utilization of facilities and services together (Bruneel et.al., 2012; Hackett & Dilts, 2004).

This research was conducted to identify the management factors in the incubator institution in Indonesia, can be identified influential factor in the management according to the character of each incubator. Based on the literature study, there are 59 factors that are considered to have a positive contribution in the management of incubators. Once through priority setting, it is necessary to measure the effectiveness of the incubator management of each institution.

Incubator A and B have the same conditions in conducting a selection system on the management of the incubator (see table 12). While Incubator C and B have similarities in implementing services. However there is a considerable gap between the three incubators, Incubator A and C have not positioned the strategy as an important part of the incubator management activity as Incubator B. Even for Incubator C, in addition to strategic criteria, the activities in implementing the selection and optimization of resources have not optimal yet. As a new incubator, Incubator C only prioritizes activities on service aspects and improves understanding of goals and management. From these findings, although three incubators were established in the same year but in its development it has a different pattern of incubator management.

No	Variable	A (%)	B (%)	C (%)
1	Resources	47.06	64.71	52.94
2	Services	75.00	62.50	62.50
3	Selection System	62.50	62.50	37.50
4	Strategy	44.44	72.22	38.89
5	Goal and Management	37.50	87.50	62.50

Table-11: Comparison of management profile of three incubators

Factor	Priority Value		
	A	B	C
Resoruces	0.168	0.16	0.083
Services	0.16	**0.24**	0.112
Selection System	0.172	0.103	0.092
Strategy	**0.325**	**0.293**	**0.422**
Goal and Management	**0.175**	0.203	**0.291**

Table-12: Comparison of Priority Value of three incubators

In Table 12, a strategy factor is generated into an activity that has a high priority weight on the three incubators. At the strategic factors contained therein incubator activity-based management policy opportunities, is one strategy to sustain growth in an incubator with capturing all the potential that comes from outside the incubator. In actual conditions, Incubator B has made implementation of this strategy, by keeping the mutual relationship between the Incubator B, an affiliate of the University and the parent Company. Incubator A and C have not been a lot of activity related to the growth strategy of the incubator, so that the weight of the priority is the input that should be prioritized in the subsequent management. This is evident from the weight sclale, although three incubators prioritize the strategy but the weight values Incubator B was lower (0.293) compared with A (0325) and C (0422).

Another priority-setting equality in the objectives and management factors, similarities are found in Incubator A and C, because based on the incubator management profile at both incubators has a low value. Incubator A institutionally, the incubator has not become an independent institution. It cannot be distinguished between the incubator function and the intermediary or technology transfer office. Though this is usually a separate function, resulting in low internalization understanding of the vision and goals incubator. At Incubator C, priority activity improves understanding of goals and incubator management is seen as an effort to shift the organizational mindset. Incubator C has grown into an institution that provides education and training, not technology providers or developing technology and business products such as incubator functions.

The obstacles faced by government-affiliated incubators are management policies related to administration, especially financial. It faced by Incubator A and C, as two government-sponsored incubators. These obstacles are not met by Incubator B, which is fully run by the private sector, so this activity should be given attention by Incubator A and C to implement administration and other government policies efficiently. To measure the effectiveness of incubator management, calculations were performed based on the self-profile value of each incubator with the weight generated from the priority setting of the incubator management. From these two data, the effectiveness score of incubator management as contained in Table 13 shows.

	A			B			C		
Criteria	Profile Value (%) [a]	Weight [b]	Score (%) [a x b]	Profile Value (%) [c]	Weight [d]	Score (%) [c x d]	Profile Value (%) [e]	Weight [f]	Score (%) [e x f]
Resources	47.06	0.168	7.91	64.71	0.16	10.35	52.94	0.083	4.39
Services	75.00	0.16	12.00	62.50	0.24	15.00	62.50	0.112	7.00
Selection System	62.50	0.172	10.75	62.50	0.103	6.44	37.50	0.092	3.45
Strategy	44.44	0.325	14.44	72.22	0.293	21.16	38.89	0.422	16.41
Goal and Management	37.50	0.175	6.56	87.50	0.203	17.76	62.50	0.291	18.19
Total			51.66			70.71			49.44

Table-13: Effectiveness of Organization Management in Three Incubators

Based on the assessment of management effectiveness generated, Incubator A has a score of 51.66% of 100%, Incubator C 49.44% and B 70.71%. From that result Incubator A set the wrong priority. Incubator A has a 75% profile score on service criteria but based on priority weighting, service criteria are the lowest priority criteria compared to other criteria. While the main priority of such a strategy, goals and management, Incubator A does not allocate enough activity, especially in activities to improve understanding of the purpose and management of the incubator it has a score of 6.56%. Whereas goals and management are second priorities after strategy.

In common with Incubator A, Incubator C assigns the wrong priority, but Incubator C successfully conveys an understanding of the objectives and management criteria of the incubator management personnel, despite its limitations in resources and selection systems. Incubator C with minimal experience in managing incubators, has laid the right foundation for developing incubators, prioritizing on understanding the vision and purpose of the incubator, although other criteria have not been a priority in the management of incubators.

The best practice is found in Incubator B, with a score of 70.71% of 100% indicating that incubator management in Incubator B runs effectively compared to Incubator A and C. Activity distribution focuses on priority criteria such as strategy, service, objectives and management. However, the selection criteria have low scores, as the selection system in Incubator B has been running in stages from campus to incubator, so the validation level in the incubator is not too tight.

V. Conclusion

The result has been identified the key factors in the incubators management, sequentially from the criteria of resources, services, selection system, strategies, goal and management. Incubator A has strong significance in service criteria compared to the two other incubators but less significance in objective and management and strategy criteria; Incubator B has strength in objective and management, strategy, resources criteria. Goal and management criteria provide a strong significance as a factor that encourages improvement in the incubators management while the service criteria as a factors that provide a less significance. Incubator A and C focus on external activities such as strengthening strategies, goal and management. Nevertheless, Incubator B, reinforce the activities on strategy and services criteria. Based on analysis of effectiveness, Incubator B has been manage the incubator more effective than A and C.

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Logistics Improvement Strategies for Thailand-Malaysia Cross Border Trade

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Abstract* — *The objectives of this research are to 1) study logistics costs in the Thai-Malaysia border trade and develop a conceptual framework to reduce the logistics costs. This research approach is qualitative research using Delphi technique with 17 participants. The results indicate an overwhelming number of aspects of reducing logistics costs in the Thai-Malaysia border trade. For example, Thai authorities should reduce the fee, and also eliminate the over-time cost in the border trade. Likewise, the authorities should introduce a free tax of the first 30,000 tons of perishable goods that are transited to Singapore. Additionally, setting up official patrols and security desks are needed in the border-trade area in order to eliminate crimes caused by cultural differences. The consignment of illegal oils and the use of illegal vehicle license plates must be investigated by the patrols too. To encourage Thais to understand Malaysia's law is also important. With respect to mutual agreement, both countries should introduce transshipment regulations to balance their own advantages with expectation of a win-win outcome. Also, Thai authorities should support contributions in form of finance and people to increase the efficiency of the border trade. As well as private sectors, they should cooperate with the authorities in order to reduce logistics costs in the border-trade area such as a collaboration of logistics-people development. Inland Container Depot (ICD) should be established close to the border between Thailand-Malaysia. With regards to port of the entry, the development of infrastructure will be speed up of goods transit. Moreover, this should include new immigration mechanisms in the port of entry such as a singlewindow system. Additionally, more logistics infrastructure should be developed such as double track railway, high speed train, and terminal port. Furthermore, the martial law should be abolished in safety areas. On the other hand, a special law against corruptions should be seriously implemented in the border trade.

Keywords: Border Trade, Logistics, Cost

I. Introduction

The current competition is likely higher. From the current globalization (Globalization) that trade liberalization has increasingly pushed the business sector must enhance both business operations to reduce costs and create new value-added offers customer management processes, the delivery of goods and services from producers to consumers throughout the supply chain. Logistics management is therefore an important goal that operators can be used as a source of competitive advantage in both the business and the level of the country, although over the years, and the Agency's various countries Thailand both the public and private sectors. Academic institutions, the Institute of mass communication Get together in the development of the logistics systems of Thailand. But found that effective performance management, logistics, also lower than a partner due to economic trends, global trade and domestic economic factors (the Office of the Director of the national economic and social development, 2556:2).

From the circumstances in which economic competition is high, so said. The development of logistics is key to the development of the competitiveness and economic development of the country. Where senior management and operating levels, both public and private sectors must develop logistics systems. Integrated). It covers all forms of transportation links. Including system management, logistics modernization. Effective Considering the competitiveness of the logistics of the country is considered to be a relatively slow development compared with other countries in the Asia-Pacific region. The performance indicators logistics (Logistics Performance Index: LPI) of the world bank in 2014 found that the country be ranked in order 35 while Singapore ranked 5, and Malaysia ranked 25 which is the dimension with the rank index of logistics capability Inferior to Malaysia and Singapore in terms of service, both private and public (Service Level) in the field of trade. Including the customs performance of domestic logistics providers. Transport infrastructure and information technology. Monitoring and inspection of goods (National Reformation Council, the 2558: 4). The advantage in location with the border with neighboring countries. The route links between regions along the area economy. However, there are still major obstacles to increasing the competitiveness of logistics Including the transport infrastructure. The lack of personnel with knowledge in management of logistics Skills in using English in communication. The laws and regulations of international standards and development entrepreneurs (Department of international trade negotiations, the 2555).

The framework agreement on the facilitation of performance according to goods in transit will help make the export value at the border crossing from Thailand to countries with the adjacent border is worth rise. (for more suchart somprayoon biology household pong and chitti by the critical success factors for the international trade in this region. For business owners) can be shipped to the customerat the place and time of need. To know the process delivery of basic facilities, all available in border trade and transit trade in this region. As well as various regulations and related policies, trade between China and countries in The country will develop into a center of trade. Investment and logistics in the region of Southeast Asia this. It is very important to the development of infrastructures. Interconnected with By balancing the demand and supply in terms of trade, investment, production, shipping out to cause economic benefits along the route. And utilities, the benefits of public investment real (estate pilgrimages to New, 2555).

The country is faced with several conditions that will impact the development of logistics and transportation system in the future. In addition to operating under the direction of national development into a logistics hub in Indo-China. There are also other factors to determine the needs of logistics and transport. Is the expansion of population and economic activities, including trade integration into the ASEAN Economic Community (AEC) which is trade liberalization, transport and that are likely to increase in the future. Make the limitations and trade barriers in the form of a tax reduction, and the trade volume between the countries has expanded rapidly, and are vital to the economic system. Country of Thailand, therefore, prepare them with the business. Logistics and transport of Thailand to allow more efficient and can compete with the best in the country (Office of development. The national economic and social, 2556:55).

The importance of international trade from Thailand and Malaysia. The study review of relevant documents, and have found the issue of logistics system in Thailand and Malaysia problem found. Are the laws and regulations such as the law on truck weight and height of the truck to transport efficiency, quality of the entrepreneurs. Law and practice about customs clearance is not conducive to the business of the assembly. The lack of law, supervision, and promote business Logistics Service Provider and law only transportation obsolete is act placement tracks. And the lack of law on air transport. (Office of the national economic 2548:, 30). The infrastructure of the transportation sector. The water transportation is the main transportation of the country. 95 percent of transportation products But the water transportation's lack of promotion and development of coastal port Private port most get no help or support from the government. And the government no road or path where users can enter the private port can be conveniently. The railway transportation still lack suitable infrastructure such as no double track rail Table of rail freight transportation delay and uncertainty. (Office of the national economic 2548:, 34) Difficulties in the development of information systems Part of the problem is the lack of entrepreneurial knowledge. Understanding and recognizing the benefits of bringing information systems used in logistics and the lack of a central unit, which consists of public and private responsibility in the whole of the standard. (Standardization) databases and logistics. Lack of knowledge of information technology and logistics at all levels in both the public and private sectors. (Office of National Economic and Social Development, 2548: 35) Problems and knowledge in logistics. These issues caused by logistics provider of lack of competitiveness with the responsible state. Whether it is the network of cooperation, skills, knowledge and access to resources. Including a number of logistics service providers that are Thai is not enough. Factors affecting the development of centrality in the logistics system of the region's future. (Office of the national economic 2548:, 36) And the development of logistics services. Issues discovered The lack of legislation favorable to business logistics. Cause unclear to operate as a barrier to entrepreneurship development is enormous. The operators logistics Thailand. In the absence of a network connection to a foreign country. Because there is no partner in the international business. As a result, network management, logistics narrower entrepreneurs from abroad.

The transport is to reduce the cost of logistics as much as possible. Screened or selected third parties (outsource) is the main factor that operators and service providers will need to focus on delivering the very best products and services on time. The comparison of the views of the two organizations in the same opinion. The border trade is considered to play an important role in promoting competitive ability of Thai products market in neighboring countries. Due to the geography advantage, which is connected to the neighbouring countries that even low freight and also as a source of paint over supply industry. As well as also a channel in finding cheap raw materials to enter into the factory, product in the country. Which is to reduce production costs to make the goods is low. Is beneficial to domestic consumers of Thai and can export goods with cost price. Low cost down is to increase the competitive capability in the world price increase. Thailand and Malaysia have traded the border with high proportion. The two countries have territory in both land and water. By land is in transportation, both cars and trains. Waterway is port navigation for both in the Gulf Coast, and the Andaman Sea. According to the agreement, the ASEAN Free Trade Area (AFTA) that promote trade between domestic สมาชิกอาเซียน. Made Malaysia trading partners with total trade value with the highest in the group.) Stepping into the ASEAN economic community. Entrepreneurs and trade service in the district border of Thailand at a disadvantage Malaysia will have an advantage only retail, wholesale trade. And repair of vehicles only. The disadvantage to Malaysia Thailand almost every branch. What country is the chance to grow through the border trade. That's the business logistics. Due to the development of infrastructure and transport routes across the border under the framework of the ASEAN economic community. Effective support activities, transportation is increasing. Is the opportunity of the logistics business of Thailand toget better results from the demand for logistics services international freight transportation route that increasing the growth of trade and investment under. The ASEAN economic community. The cargo business along the border needs to accelerate adjust the business to have a more international to compete with the major operator. To compete in logistics is an important goal of ASEAN Economic Community (AEC) to reduce the cost and the protectionist trade tax. To promote free trade within the region and establish production bases together for regions. The development of transportation and logistics. Especially the infrastructure (Infrastructure) and management system is important to develop the economy. Because it will help push for upgrading competitiveness of industry and trade to increase. The issue of logistics Thailand. - The Malaysia To minimize problems, it is required to review the development plan the logistics of the two countries. The context of the ASEAN Economic Community links. Analysis and evaluation of logistics systems. As well as determine the right strategy The key tool in the evaluation of logistics and supply chain has many masks elements. In terms of logistics and supply chain, such as LPI to assess the logistics system as a whole. To contribute to the strategic SCOR is a tool to assess the viability of the entire supply chain, from upstream enterprise level businesses. Midstream and downstream devices to a lower value of Malaysia in the future.

II. The purpose of the research.

1. To study the context logistics Thailand - Malaysia supports the AEC.
2. To study the potential of internal and external logistics Thailand - Malaysia for the ASEAN Economic Community.
3. strategies to develop logistics Thailand - Malaysia for the ASEAN economic community.

III. Research Methodology

This research study The study Strategic Development of logistics Thailand - Malaysia for the ASEAN Economic Community. Primary purpose Study context and the potential development of logistics Thailand - Malaysia for the ASEAN Economic Community. The research was conducted by Research methodology and consistent with the objectives set. The research procedures conducted research into three stages.

Step 1, the context and the potential development of logistics Thailand - Malaysia for the ASEAN Economic Community. The key informants (Key Information) by study and documentation. How to choose specific (Purposive Selection) using in-depth interviews (In-Depth Interview) with those involved, including the customs and the customs chief Sadao, Songkhla, Songkhla Chamber of Commerce. FTI Operators logistics. Academic logistics of 30 people.

Step 2 the information from the analysis of step 1 create tools to assess potential logistics system by utilizing the Logistic. Performance Index (LPI) or index efficiency Logistics and interviews from experts, the 30 people, which is the main contributor to the same group as step 1.Step 3 Strategic Logistics System Thailand - Malaysia to accommodate the ASEAN economic community. By analyzing the internal and external environment by application of the Value Chain analyzed factors inside and PESTEL were analyzed the external factors. The data were analyzed SWOT Analysis and preparation of TOWS MATRIX in strategic formulation. The construction and development strategy of logistics system in Thailand - Malaysia to cater to the ASEAN economic community by the Care Bear group. (Focus Group) to choose the strategy from experts, the 10 people.

IV. Research result

The results of the data analysis The results were as follows: Strategic Development of logistics Thailand - Malaysia for the ASEAN Economic Community under the Objective 1 found. Context logistics Thailand - Malaysia's first entry into the ASEAN Economic Community from the interview is that customs checkpoints neem-value cargo in the country. But the problem of agrarian outpost Consulate La

Nim is. Congestion The area of this side is restricted. But the customs NEEM project plans include three projects. The adjustment in the landscape Customs Improvement Project Nim (Sadao border checkpoint) was prepared in two phases, Phase 1 and Phase 2 of the outgoing and incoming of new construction projects Sadao Customs House. To reduce the narrowness of shipping to Malaysia. And implementation of the Customs checkpoint Padang Besar. Padang Besar checkpoint will focus on rail freight. The factors that have the greatest impact of the checkpoint is Padang Besar regulatory practices. Control imports Currently, Thailand has more than 30 departments to control imports. Law is not the only issue. The Department of Foreign Control Some agencies make public documents. Some organizations empower local entrepreneurs to make a trade permit delays and problems. Delays in the document should be prepared National Single Window (NSW) with other agencies involved as well. Customs Padang Survey that Freight rail will save up to 30% of its budget and cost-saving logistics. The monorail has a higher pair. There is also a plan to build a container Drug Mart (CY) to strengthen the distribution and transportation. There is also a special train for the extra freight. Freight will be certified and should improve the quality of service logistics. Including tracking searched products during production and transportation. Thailand, which requires the development of rail transportation and water to more households. The choice of transport than road widely used. Should have expertise in using technology to enhance operations so as to have more. Entrepreneurs need to choose the appropriate means of transport and are comfortable to do business with even more versatility. And be careful about security The transport system is required to prevent a loss to come up with the carrier.

According to the second. Find that the success factors of the logistics development of Malaysia. The study found that plans to develop logistics ofMalaysia does not have difference. Logistics development plan of much. But the remarkable success that Thailand should learn from Malaysia is a mechanism to propel the plan into practice. By Malaysia have established agencies by Only the direct responsibility clearly in the development planning of national logistics and driving เคลื่อนแผน into practice, that is, the Council of the national logistics. The members of the Council of logistics, also includes participation from the local government agencies and the private sector involved, especially the participation of. The private sector is the majority is to 9: 6 good practices. Make a plan into practice.) Achievement because private knowledge and insight problems from conducting งานจริง. It is an important part in making the planning can be driven to the practice in concrete. In addition, one of the members of the Council of logistics company is unit planned economy (Economic. Planning Unit: EPU), which is similar to the office of the national economic and social development board) of the country, but the difference that is interesting. EPU not only in the policy level, such as planning agency board only, but also plays a role as such, bureau of the budget sector. With the power of approval to the budget as well, and a monitoring and evaluating the operation of the project, thus making planning transformation plan. The plan into practice and driven in power in the EPU. And make the operation of logistics development Malaysia its efficiency and effectiveness.

For the purposes of Article 3. The strategic development of logistics Thailand - Malaysia for the ASEAN Economic Community. Consists of seven policy areas: 1) improving infrastructure. Logistics - Thailand, Malaysia, the land transport 2) improvement of infrastructure, logistics - Thailand, Malaysia, the rail 3) the development of information technology, logistics 4) development. management manpower logistics 5) the promotion of trade and services, logistics, 6) development of customs 7) the collaboration between the private sector policies 7 brings strategies 32 strategies.

V. Conclusion

The study also found that the issues first study context logistics Thailand - Malaysia's first entry into the ASEAN Economic Community was found in the analysis of 6 points can be summarized as follows. System-related laws and regulations, including international agreements. Whether a border trade agreement. Or international transport agreement The terms of trade, such as the FTA WTO grading Logistics Performance Index: LPI in 2557, the ASEAN countries, Singapore was ranked one. Malaysia is the second largest And Thailand's third Considering the points on each side. Found that Thailand has characterized the shipment on time (timeliness) ranked first, followed by the issue of ease of international transport. (International shipment), while the issue is the weakness of Thailand is the efficiency of customs clearance (customs). And the ability of business logistics (logistics competence) due to the customs of the area Sadao customs delays. The area is crowded The freight traffic jam And cross-border trade is the gateway to major international trade between Thailand and neighboring countries. In Malaysia, a country with the most trade with Thailand. The development of cross-border infrastructure is essential for the government. To provide support and care. The most common problem is that the customs. The clearance at border Both the applicant and the product release. There is also a delay And convenience Therefore, the development of such solutions. It is a matter of policy to facilitate the movement of goods. And should have modern technology to operators of logistics of international shipping. The operator currently has no knowledge of information technology, logistics very adequate. There is no investment in the installation of modern technology when compared to Malaysia. The government will support this fully. This requires the development of rail transportation service. The development of transport to reduce transport costs due to transport large quantities at a time. And reduces damage from road transport of goods by road. Context and logistics Thailand - Malaysia's first entry into the ASEAN Economic Community by interviewing the customs checkpoint at a neem worth of goods in the country. But the problem of agrarian outpost Consulate La Nim is. Congestion The area of this side is restricted. But the customs NEEM project has 3 projects. Projects include landscaping inside. Customs Improvement Project Nim (Sadao border checkpoint) was prepared in two phases, Phase 1 and Phase 2 of the outgoing and incoming of new construction projects Sadao Customs House. To reduce the narrowness of shipping to Malaysia. And implementation of the Customs checkpoint Padang Besar. Padang Besar checkpoint will focus on rail freight. The factors that have the greatest impact of the checkpoint is Padang Besar regulatory practices. Control imports Currently, Thailand has more than 30 departments of the import controls. Law is not the only issue. The Department of Foreign Control Some agencies make public documents. Some organizations empower local entrepreneurs to make a trade permit delays and problems. Delays in the document should be prepared National Single Window (NSW) with other agencies involved as well.

Customs Padang Survey that Freight rail will save up to 30% of its budget and cost-saving logistics. The monorail has a higher pair. There is also a plan to build a container Drug Mart (CY) to strengthen the distribution and transportation. There is also a special train for the extra freight. Freight will be certified and should improve the quality of service logistics. Including tracking searched products during production and transportation. Thailand, which requires the development of rail transportation and water to more households. The choice of transport than road widely used. Should have expertise in using technology to enhance operations so as to have more. Entrepreneurs need to choose the appropriate means of transport and are comfortable to do business with even more versatility. And be careful about security The transportation system is a must to prevent losses that would occur with the transportation issues, two were rated as important in the development of the logistics of the main data of 30 patients given. important The potential for the development of logistics. The key informants commented. Thailand has the potential to deal with shipping. Competitive Price (International Shipments) The first competency and quality of in-country logistics (Logistics Competence). # 2 potential delivery status tracking (Tracking & Tracing) is a potent sequence 3 with punctuality in delivery (Timeliness) is the sequence of operations performance 4-side Customs Department (Customs) potential is 5, and the quality of trade infrastructure. Individual transport (Infrastructure) is the last sequence, which shows that the country Thailand should give priority to infrastructure, trade and transportation, and most important in the potential development of logistics systems, customs, the main information provider by Neem, Neem Dan commented that Customs has the potential. Motthana delivery (Tracking & Tracing) is the first, punctuality in delivery (Timeliness) is the second. The ability and quality of in-country logistics (Logistics Competence). The third order, and efficiency of operations of the Department of Customs (Customs), the main information provider, ranked the fourth potential. With cargo management Competitive price (for International Shipments). Is the 5 and quality of infrastructure, trade and transport (Infrastructure) is final, which still shows. The quality of infrastructure, trade and transport (Infrastructure). Would be the point that should be developed to compete in logistics with neighboring countries. Potential of development of logistics system in customs Padang Besar. The main contributor to the opinion that The Padang Besar potential cargo handling with competitive price (International Shipments) is ranked first, followed by The ability and quality of logistics services in the country (Logistics Competence) followed by the track delivery status (Tracking & Tracing). Punctual delivery (Timeliness). The potential is the four. The efficiency of the operation of the Customs Department (Customs) has the potential to the five. And the quality of infrastructure, trade and transport (Infrastructure) is the last point 3 found. A strategic plan for the development of logistics system in the 2 (2556-2560). National economic and social development board. It can be seen that there are already some implementation strategies. During the operation and some strategies. The strategy was presented to make more consistent with the context and environment. Which are beneficial to the organization. However, research from a collection of concepts, theories, opinions and suggestions from key informants. Which can be useful to apply policy. And leads to the practice as well as the control and is a measure of the state at the local, regional and national level, both public and private sectors.

VI. Suggestions

The analysis Development of logistics Thailand - Malaysia for the ASEAN Economic Community. Researchers have suggested below.

1. Development of road infrastructure to facilitate trade and transport.

2. development of rail freight transport format, switching from a single pair of Rails for freight, with more volume, and as a way to transport goods from Thailand to Malaysia.

3. to improve the Customs side, there is the preparation of comprehensive and advanced technology used in the implementation of customs and transport logistics operators.

4. Human resources development knowledge and talents. And strengthen the language skills to personnel.

5. Creating a joint venture between the private sector as partners and services to promote trade and investment.

6. The private sector should be aware of the laws related to logistics, both at home and abroad even more.

7. Government should build the system and the mechanism of prevention and control corruption reduced.

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Exploring the Viability of Halal Food Manufacturing Industry in Republic of Korea

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Abstract*—*There are about 1.6 billion Muslims make up the total population of the world and they are not only within the confines of the Arabian Gulf states but widespread all around the world. Along with the spread of Muslim population to the world, halal industry is highlighted as significant growing industry – a new "Blue ocean" in global market, not an exclusive to Muslim nation-states. The concept of halal recognizes a standard for food, products, behaviors and services that are allowed for Muslims to consume. Halal certificate is given as an evidence of halal product. Current top exporters of halal products are non-Muslim countries, and many global corporations attempt to produce halal certified products. Republic of Korea("Korea") has step forwarded to join the stream and signed a memorandum of understanding with the UAE on cooperation in Halal food and agriculture – as a starting point, the government efforts to highlight Halal industry as a national economic strategy. This article is an introductory article to explore the viability of halal food manufacturing industry in Korea, specifically focus on slaughtered halal animal meat at initial stage in prior to establish the halal product manufacturing facilities with understanding of the current halal food industry.

1. Introduction

There are about 1.6 billion Muslim population in the world, which is one fifth of the world population, and they are not only within the confines of the Arabian Gulf states but widespread all around the world (Ireland & Rajabzadeh 2011; Pew Research Center 2012). Followed by an analysis conducted by Pew Research Center (2012), Muslims make up about 23 per cent of the world's population and is expected to reach 26 per cent of in a decade, which is equivalent to 10 per cent annual growth of the industry. Muslim communities were created by ties of Islam that bound all Muslims together, requiring them to comply with the basic requirement of the religion in their way of life. Along with the widespread and rapid growth of Muslim population globally, halal industry is highlighted as a significant growing global industry – a new "Blue ocean" (KPMG International 2015; MOTIE & KOTRA 2015).

Halal refers to "lawful" and "permissible" in Islamic law, which recognised as a standard for food, products, behaviours and services that are allowed for Muslims to consume (Esposito 2003). Initially, halal industry seems only relevant to Muslim majority countries; however, it is now increasingly spreading to non-Islamic nationstates. Muslim consumers identify halal food and non-food products as obligatory to consume and use, and non-Muslim consumers often recognize halal food and nonfood products as good quality (Riaz & Chaudry 2004) and healthy because of strict requirements to prevent harms and for the highest standards of *tahara* – physical sense of purity, hygiene and quality.

Halal certification increasingly gains its trust globally, not only as a religious matter of choice but as a method of accreditation of safety, for example, Malaysian government requests all halal certification applicants to submit Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Point (HACCP) to ascertain the safety of food to be consumed. Halal certification is given as a guarantee the 'halalness' of halal products and is given as an evidence of halal product. There are several halal certification agents globally and some are highly recognized, such as Jabatan Kemajuan Islam Malaysia (JAKIM) – Malaysia, Majlis Ugama Islam Singapura (MUIS) – Singapore and Islamic Food, Emirates Authority For Standardization and Metrology (ESMA) – United Arab Emirates, for example. Each halal certification requires different standards due to its differences in geographic location, Islamic school, customs or tradition and branch of Islam: Sunni or Shia and so are the requirements of those certification-awarding bodies. Also there are issues in importation and exportation of the halal food that countries differ in their recognition of halal standards or preferences on specific halal certification. Therefore, it may be important to choose convincing halal certification agents to avoid rage and offence from consumers or rejection by the government and such Islamic community.

Halal food industry is the most significant industry among the halal industries because of human beings eating habit and huge consumption for food and there are many well-established halal guidelines on food. Muslims spending on food and beverages reached US $1.3 billion in 2013 and the demand for halal food still increases although the global economy is in crisis (Thomson Reuters 2015). Therefore, the industry has been recognised as a safe investment market. Growth of halal food industry is expected along with increases in demand and consumption, which eventually leads to an increase of halal food supply.

Current top exporters of halal products are mostly non-Muslim majority countries: Brazil, India, USA and etc. Besides, there are many global corporations which attempt to accredit their products with halal certification for the purpose of entering halal industry market. Nestlé, Saffron Road, Coca-cola, and Danone are well-known major international halal food manufacturing corporations. Not only corporations but also in government level, several support and efforts have been made. In Rotterdam, the Netherlands, established halal warehouse thereby completely separate pork and alcohol, and Thailand announced its ambition to be the top halal exporter the establishment of halal centers for effective management of halal food and its manufacturing. China, Russia and France also have been benefiting from halal food industry since they have started to invest largely in halal industry from its great market potential. Currently Japan is keen on halal food industry, at about 230 Japanese corporations are positively seeking to introduce halal products (Kim 2015) and looking for global halal cooperation with halal certification agents. Accordingly, Republic of Korea (“Korea”) has shown interest in halal food industry recently.

In 2015, Korea signed a memorandum of understanding with the UAE on cooperation in halal food and agriculture. It is assuming as a starting point to venture into the industry that the government highlights halal industry as one of the economic strategies. The government also has planned to establish a halal industry complex to benefit its economy and to develop the suggested area. However, there are barriers to develop halal food industry as evidenced from recent movement against halal industry on the launching of halal food industry cluster in Iksan, Jeolla province. The plan has deferred due to campaigns held by publics against the plan (e.g.) Drop plan for Iksan Halal food (Hwang 2016b).

There are only 35,000 Korean-Muslims which considers as a minority in Korea, while 100,000 foreign-Muslims residing in Korea (KMF 2016), therefore it would be difficult to promote halal industry. Small Muslim population in Korea raises an issue on lack of manpower to process halal food manufacturing if to develop the industry. The Korea Muslim Federation (KMF) is a major halal certification-awarding agent in Korea, however, its recognition is only valid in Malaysia and local market but others. For example, Indonesia refused to authorize halal food products accredited by KMF due to the absence of KMF halal in its foreign accreditation halal list. If then, Korea should seek alternative method to overcome, it would be a matter of choice either to choose convincing halal certification or to promote current local halal certification to be more convincing globally. This article is to explore the viability of halal food manufacturing industry in Korea, particularly focus on halal animal meat manufacturing facility at initial stage prior to establishment of halal food manufacturing facilities with understanding of the current halal food industry.

II. Understanding “halal”

Islam is one of the largest religions in the world with a great increase of its population. Muslim population is estimated to be 2.2 billion by 2030 with an annual growth rate of 3 per cent (Grim & Karim 2011). Islam implies obedience to the commands of *Allah* – the Almighty God in Islam, and Muslims are those who become obedient to Islam. Muslim population is a transnational group united in a faith in Islam, regardless of nationality or any cultural background. The primary requirement for all Muslims is to declare no god but *Allah*, who has no partner and is everything above, and Muslims should dedicate all things and actions only to *Allah*. There are five fundamental pillars of Islam (*Arkan al-Islam*): believe the only God, *Allah*, and Muhammad as the last prophet (*shahadah*), pray five times a day (*salat*), pay almsgiving to the needy (*zakat*), practice fasting in Ramadan month (*sawm*), and pilgrimage to Mecca at least once in a lifetime (*hajj*) considered as an obligatory for Muslims (Esposito 2003). All Muslims must follow Quaranic guidelines and restrictions of Islam such as "the Shariah." The Shariah is the fundamental framework of Islam based on: the *Quran* – the scripture of Islam, the *Hadith* – collected reports describing the prophet Muhammad, and *Sunnah* – actions and sayings of the prophet. Five types of values (*al-ahkam al-khamsah*): Obligatory (*wajib*), Recommended (*mandub*), Permissible (*mubah*), Discouraged (*makruh*), Prohibited (*haram*) are a network of rules that guide Muslims in every aspects of life (Faruki 1966).

Halal stands for lawful and permissible things and actions that perceived as a guideline to be satisfied by all Muslims. The importance of consuming halal is stated in *the Quran.* The opposite concept of halal is haram, which is prohibited and unlawful sources for Muslims. Halal applies to food, products, and any actions or services (Burhan 2000) to ensure Muslims consume good things and to protect them from Haram. Although the definition of halal is in common, there are complexities in standards by each halal certification-awarding agent. General distinctions for nonhalal or haram products are pork and all swine by-products; animals not slaughtered by halal requirements; dead animals killed prior to slaughter; animals killed in a manner that prevents their blood from being fully drained from their bodies; animals slaughtered in the name of anyone other than *Allah*; blood and blood by-products; (halal) foods that have been contaminated by any of haram products; carnivorous animals such as lions, tigers, or wolves; birds of prey such as eagles, owls, falcons or vultures; pests such as rats, centipedes, scorpions and other similar animals; animals which are considered repulsive such as lice, flies, maggots and other similar animals; mules and domestic donkeys; animals live both on land and in water such as frogs, crocodiles and other similar animals; all poisonous and hazardous aquatic animals; intoxicants of all types, including alcohol and drugs; gambling and pornography; and *riba* (charging and paying of interest) (AAFC 2011; USHA 2012; Riaz & Chaudry 2004; FAO 2001).

III. Global halal market and halal food industry

Overviews on halal market were mostly negative in the past upon negative perceptions on Islam from the West that illustrate the religion in a link with terrorism and war. However, after the global economy crisis in 2008 the perception has been reoriented more towards to positive and now it turns out to be a remarkably expanding industry led by expectations on extending trend of Islamic finance and increasing value and market size of halal industry (Kong 2012). The leading factor of global trend of halal industry is the spread of Muslim populations worldwide, which increases the demand for halal products. Muslim population make up at about 24.1 per cent of the total global population in 2015 and is expected to consist 31.1 per cent of the global population by 2060 (Lipka & Hackett 2017). The reason for rapid growth of Muslim population can be explained by rapid spread of Islam, high fertility rate of Muslim woman. Based on Pew Research Center's research on Muslim and Non-Muslim fertility rates, Muslims tend to have more children than non-Muslims, with an average of 3.1 children, compared with 2.3 for non-Muslims.

The large Muslim-populated region and countries and its rapid population growth mean increasing the demand for halal products and therefore likely to exceed the current supply of halal products. This can disable self-sufficiency within the country, therefore necessitate the importation for halal products. Currently, Muslim population are mostly populated in the Middle East-North Africa and the Asia-Pacific, especially in the Southeast Asia, and they remain as a minority group in Europe and Americas. Currently, the strong markets for halal products are Southeast Asia and Middle East where most of the products are supplied (Riaz 1998). In addition, Muslim population in its minority regions are also expected to increase with a growing share of the countries' population, which eventually will increase the demand of halal products. Overall, in accordance with the trends of increasing Muslim population globally, the halal market and the value of halal food have also been increasing and are expected to increase further (Komitopoulou, 2015). Indeed, halal has emerged as one of the prominent Brand in recent times (Wilson & Liu, 2010), and the trend of halal food now has further extended to non-Muslim market beyond Muslim nations. Global halal market estimated at about US $2 trillion (exclude Islamic finance sector), and the value is expected to have great increase to reach US $3.7 trillion in 2019 with 20 per cent of an annual growth rate (Ainullah 2016; Thomson Reuter 2015; Othman, Sungkar, & Hussin 2009; Kim 2015).

There are perceptions that Muslims are only consumers of halal products. Non-Muslims are believed as huge consumers of halal products today as well who perceive halal products as wholesomeness that safe and hygienic to consume (Riaz & Chaudry 2004). The research carried by Rezai, Mohamed and Shamsudin (2012) shows that at least

79 per cent of non-Muslim consumers are aware of the existence of halal principles and admitted that their awareness of halal principles had improved a lot via advertisement, and 40 per cent of the respondents understood the concept of halal principle. Along with the promotion of halal, non-Muslim consumers interest in halal products and services may increase, which eventually increase the demand. In fact, the outlook of halal industry is promising that there is a strong and increasing demand for halal products for both Muslim and non-Muslim consumers in a number of non-Muslim countries since halal products are also growing in popularity due to the positive perception that halal products are healthier, safer and humane animal treatment (Berry 2008).

Top Muslim Food Consumption Market			
Country	US$ billion, 2013	Country	US$ billion, 2013
Indonesia	$ 190.4	Sudan	$ 27.0
Turkey	$ 168.5	Morocco	$ 24.5
Pakistan	$ 108.4	UAE	$ 21.3
Iran	$ 97.0	Malaysia	$ 16.6
Egypt	$ 94.8	Kazakhstan	$ 14.5
Bangladesh	$ 59.9	USA	$ 12.8
Saudi Arabia	$ 52.7	Azerbaijan	$ 12.5
Russia	$ 43.7	France	$ 11.9
India	$ 41.1	Yemen	$ 11.5
Nigeria	$ 37.7	China	$ 10.1
Iraq	$ 35.4	Germany	$ 9.9
Algeria	$ 35.4	Kuwait	$ 8.7

Table-1: Top Muslim Food Consumption Market by Size in 2013
Source: Thomson Reuters (2015)

Halal industry brought up to a national level agenda upon its growth and great contribution to nation's economy. Malaysian government supports the Department of Islamic Development: JAKIM to achieve the establishment of a global halal standard towards its ambition to become a central hub for halal industry. What is more, Malaysia's export of halal products helped its economy by creating 250,000 jobs and making nearly US $10 billion in 2015, which contributes about 5.1 per cent of the total export of the country (Naidu 2016). Many countries have been giving huge support and control the halal certification as accreditation bodies. For example, Brunei Darussalam established "Brunei Halal" brand as a method for economy diversification, Thailand is considered as a growing pioneer of halal industry in the region by increasing number of halal products manufactured within the country, and Singapore is also keen to establish its own halal brand that may aims to satisfy the demand from tourists, especially from its neighboring countries such as Malaysia and Indonesia.

Halal food industry is the most emerging market amongst halal industry. The industry value in 2013 was estimated at US $1,292 billion, which represents one-fifth of the global food industry, and the demand for halal food is expected to grow more than 70 per cent of today's figure by 2050 (Thomson Reuters 2015; Edbiz Consulting Limited 2013). Muslims' consumptions of halal food are estimated to reach US $2,537 billion in 2019, which consist about 21 per cent of global food expenditure (Thomson Reuters 2015). Halal food made a huge spread of halal products from low profile to high-profile that made its debut in major grocery chains such as Wal-Mart, Carrefour, Coles, Tesco and many other stores in non-Islamic countries. Additionally, social media network is assisting publics, especially Muslims to increase awareness of halal food (Reportlinker 2016). Such website and blog: The Halal Food, My Big Fat Halal, The Halal Food Project, Zabihah.com, halalfoodguy.co.uk, saltandsheikh.com and Halal Girl About Town Blog are well-known halal food blogs and websites in Australia, the UK and many Muslim minority countries that help Muslims to be aware halal food availability and furthermore for non-Muslims to be familiar with the concept of halal.

Asia-Pacific dominated the current global halal food market that represents more than 60 per cent of the total market (Reportlinker 2016). Owing to the largest number of Muslim population in Asia-Pacific, the region dominates the halal food market, although most of Muslim-majority countries are in the Middle East. Indonesia ranked the highest on food consumption among Muslim countries with the expenditure of US $19.4 billion (Table 1).

Halal has become a common term in the Western food industry in the last two decades because of their exporting products to Southeast Asia and Middle East (Riaz Chaudry 2004). Several multinational corporations (MNCs) have already facilitated its vendors in halal food markets such as Nestlé, KFC, Starbucks, Saffron Road, Coca-cola, Danone, Al-Islami, Kawan Foods, McDonalds, Marrybrown, Tesco, Carrefour and many others. Nestlé is one of the top corporations that produces the largest halal food products in the world. Malaysia, as the first market for its halal food market, Nestlé applied halal certification for all of its food products by introduction of voluntary halal certification of Malaysian government in 1994, then it extended its halal production to Indonesia, the Middle East, Europe and the United States (Nestlé 2012).

Slaughtered halal animal meat and live animal is one of the core sectors of halal food industry according to Thomson Reuters in State of the Global Islamic Economy Report 2015, where the top exporters of halal slaughtered animal meat and live animals are identified as the top halal food exporters. The recent top halal food exporters are countries indicated in Table 2(a) where most of the major exporting countries are non-Islamic countries. Live animals can produce slaughtered animal meat, and the meat and by-products can be used to manufacture other processed food products. The current large halal exporting countries have been benefiting from whole supply chain of halal food. As shown in Table 2(b), the top five halal meat importing countries: Saudi Arabia, UAE, Egypt, Malaysia and Iraq have been estimated to have spent US $7.26 billion for importing halal meat and live animals in 2013. In addition, the report stated that 85 per cent of slaughtered halal animal meat and live animal imports are from non-Islamic nation-states.

Top Exporters to OIC Countries	
Country	US$ billion, 2013
Brazil	$ 4.7
India	$ 2.1
Australia	$ 1.6
USA	$ 1.2
France	$ 0.8
Turkey	$ 0.5
New Zealand	$ 0.3
Netherlands	$ 0.2
Pakistan	$ 0.2
Germany	$ 0.2

Table-2(a): Meat and Live Animals (Top Exports to OIC Countries)

Top Importers within OIC Countries	
Country	US$ billion, 2013
Saudi Arabia	$ 2.70
UAE	$ 1.51
Egypt	$ 1.29
Malaysia	$ 0.90
Iraq	$ 0.86
Jordan	$ 0.63
Qatar	$ 0.60
Indonesia	$ 0.59
Kuwait	$ 0.58
Libya	$ 0.51

Table-2(b): Meat and Live Animals (Top Importers within OIC Countries)

From the above documentation and analysis which highlight the existing and potentials of the market size and values of halal industry, the focus in considering the industry certainly should not only in the Middle East or Muslim population majority regions but globally. Owing to the rapid growth of Muslim population, the escalating expenditure on halal food and non-food products and increasing awareness of halal, the demand of halal products will certainly increase. Halal food industry has turned from marginal industry to the spotlight in global industry market. The industry is now regarded as a safe and the foremost industry that has revealed huge amount of benefit in both Muslim majority and minority countries and MNCs.

IV. Muslim population and muslim's halal food consumption in Korea

Halal industry in Korea seems still a meagre industry. Islam is still considered as minor religion in Korea due to its small Muslim population. There is no certain statistics to measure Muslim population in Korea, however most research statistics observe the population at about 100,000 to 140,000 (Hwang et al. 2015). KMF (2016) estimates Muslim population in Korea at about 135,000, which Korean Muslims make up only 26 per cent (approximately 35,000) and foreign Muslims consist about 74 per cent (approximately 100,000). The convert rate to Muslim in Korea and Japan is considerably low that only total up at few hundred people (Fathiah Fathil 2011), which is supported by KMF's statistics that only 71 Koreans converted to Muslim in 2006. However, an increase of Muslim tourists to Korea is remarkable.

Based on Muslim tourism status announcement by Korea Tourism Organisation (KTO) in 2017, 980,000 Muslim tourists visited Korea in 2016, which is increased by 33 per cent from the previous year. Muslims from Asia dominate the Muslim tourists to Korea at about 740,000 people, and followed by Middle East with 160,000 people, and 80,000 people from North America, Africa and other regions (Table 3 and 4). KTO assume the main factors that lead to increasing number of Muslim tourists are *hallyu* (spread of Korean culture), promotion of Korean tourism, and efforts to attract Muslim tourists.

The number of Muslim students to Korea is increasing as well that as of April 2012, foreign Muslim students in Korea from OIC countries are estimated at 3,139 (Kim 2012). The seven countries, command an overwhelming majority of Muslim students to Korea, are Turkey, Indonesia, Iran, Afghanistan, Saudi Arabia, Bangladesh and Uzbekistan that consists 3,287 students in 2014, which has doubled the number of 2009 (Lee SG 2015). The above statistics underline the current small Muslim population which foreign Muslims consist about three quarter of the population with the low convert rate of Koreans to Muslim. Owing to the small Muslim population, the current demand of halal food products in domestic market is considerably low. However, the increasing number of Muslims to Korea may promote the demand of halal food products in domestic market and will address higher potential of halal food industry in Korea.

(100,000 people)

	2012	2013	2014	2015	2016*
Total foreign visitors	1114	1218	1420	1323	1459
Foreign Muslim visitors	54	64	75	74	81

* For the statistics of 2016 is the result until October 2016 only.

Table-3: Muslim visitors to Korea from 2012 – 2016
Source: KTO (2017)

	2012	2013	2014	2015	2016*
Indonesia	130,143	164,973	181,663	168,810	210,080
Malaysia	109,164	127,337	149,891	136,914	142,757
Turkey	19,251	19,659	22,337	23,120	22,861
UAE	2,938	4,634	7,981	7,212	6,623
Saudi	7,173	9,197	9,084	8,598	8,699

* For the statistics of 2016 is the result until October 2016 only.

Table-4: Top five Muslim visitors to Korea by nationality from 2012-2016
Source: KTO (2017)

From the figure 1, 41 per cent of Muslim tourists tend to visit general restaurants where is not contrary to Islamic regulations. Muslim tourists who brought food from home country and cook at their accommodation in Korea are 10 per cent respectively. With regard to halal restaurant, 31 per cent of the tourists visit halal restaurants despite of small number of halal restaurants in Korea. The author assumes the major factor of the addressed statistics from the figure 1 is due to lack of halal restaurants and infrastructure in Korea.

Figure-1: Diet behavior of Muslim tourists visit to Korea
Source: KTO (2017)

Muslim tourists to Korea chose food as a prior concern for their visit to Korea (KTO 2017). Temporary visiting Muslims to Korea have high tendency to purchase food items in small and middle size supermarket, hypermart and convenient store rather than halal food shop (Figure 2

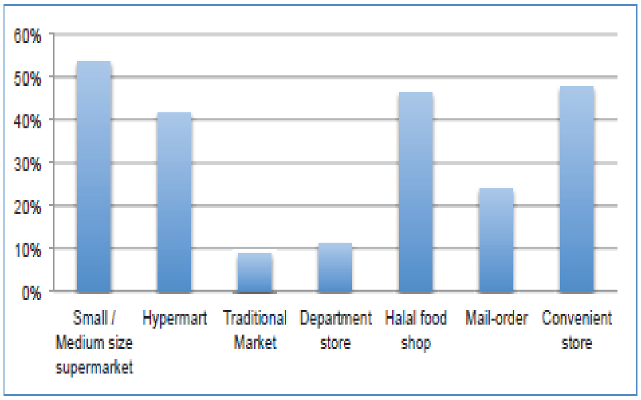

Figure-2: Places of food items purchased by temporary visiting Muslims to Korea
Source: Hwang et al. (2015)

The fact that most of the current halal certified restaurants are located in Seoul addresses difficulties for Muslim tourists visiting other provinces but Seoul in dining, hence constraining their choices to only having seafood or vegetarian restaurants. Simply to say, it will limit the choice of food and tourists might not want to try various foods in Korea due to halal issues, thereby decreasing their satisfaction of travel. It is indeed extremely hard to purchase halal certified products in Korea besides Seoul. Muslim friendly restaurant are evaluated positive that Muslim tourists are well-aware and favouring Muslim friendly restaurants and its concept. In Seoul, there are eight five-star hotels provide halal menu - with or without animal meat; and would remove alcohol beverages upon request in advance.

According to the research conducted by Song (2011), Korean Muslims lay their difficulties on following Islamic regulations on food consumption. Although there are increasing number of halal supermarkets lately that allows them to practice their beliefs, it is still hard to follow the regulation due to social and cultural factors that decision on consumption is not only made by individual's decision but family, cultural and social dimensions (Inter-dependent and family centred culture and social values contribute to their consumption patterns). Food consumption patterns of Muslims residing in Korea are shown in Table 5 by place and items of purchase.

Muslim consumers in Korea tend to purchase grain and its processed products in hypermart and halal food shop, while animal meat, processed meat products, seasonings / sauces are highly purchased in halal food shop although there are only a few halal food shops exist currently. Foreign Muslims in Korea also had difficulties in finding halal certified meat according to Song (2011). However, some Muslims come up with the idea to purchase chicken alive from the market then slaughter in Islamic regulation for them to consume. Currently halal supermarkets and restaurants are mostly located in Muslim populated area that explains considerable Muslims settlement in the surroundings. Some Muslims married to Koreans started small halal supermarket to ease the supply of halal ingredients and food products to Muslims in Korea. Residing and Temporary visiting Muslims in Korea show similar tendency on food consumption pattern in Hwang et al. (2015) research that they observe items for halal certification and animal ingredient free. This tendency is remarkable in animal meat and its processed products.

(%)

	Small / Medium size supermarket	Hyper-mart	Traditional Market	Department Store	Halal food shop	Mail-order	Convenient Store	Frequently Purchased Items
Grain	20.2	31.8	1.6	2.0	**30.4**	10.7	3.4	89.2
Processed grain products	24.1	34.3	1.8	0.4	**31.2**	2.7	5.5	79.2
Vegetable / Fruit	34.4	38.6	11.7	2.3	**8.8**	0.7	3.4	94.0
Processed vegetable / fruit products	27.5	39.9	6.9	3.2	**17.2**	1.6	3.7	66.0
Animal raw meat	3.7	6.1	1.0	0.0	**88.0**	1.2	0.0	92.0
Processed meat products	6.6	9.6	1.0	1.0	**80.6**	0.8	0.5	74.4
Marine products	24.2	34.1	8.5	3.1	**28.3**	0.4	1.3	79.2
Processed marine products	25.2	35.3	5.0	3.4	**27.9**	1.6	1.6	68.8
Egg	32.8	41.2	6.8	2.5	**10.4**	0.8	5.5	92.4
Dairy products	30.6	41.0	3.6	3.0	**11.1**	1.5	9.2	93.6
Bread / Snacks	26.6	33.5	3.3	2.3	**24.7**	0.4	9.2	90.4
Tea / Drinks	26.4	32.0	3.5	2.9	**24.5**	0.6	10.2	90.8
Seasonings / Sauces	18.4	24.4	1.2	2.3	**51.9**	0.0	1.9	77.2

Table-5: Places of food consumption and frequently purchased food items of Muslims residing in Korea
Source: Hwang et al. (2015)

V. The current status of halal industry in Korea

The previous president Park Geun-hye highlighted halal industry as a potential development economic sector for her government in January 2015 (Beer 2015). The Minister of Agriculture, Food and Rural Affairs (MAFRA) mentioned after the MOU with UAE in the early 2015 in aims to seek development of halal food industry that the ministry would seek to boost halal food export and establishment of Korea Agro- Fisheries & Food Trade Corporation (aT) branch office in Dubai (salama 2015). The ministry signed the tripartite MOU with KMF and Korea Food Research Institute (KFRI) and the establishment of slaughterhouse for halal animal meat and halal food complex was also designated. Introduction of UAE halal certification scheme –ESMA, which is highly recognised globally, might help to overcome the current low global recognition issue of KMF halal. MAFRA expected halal food market's growth to about 21 per cent by 2019 (Yim 2016). MAFRA has suggested the establishment of Halal food support centre, such government agencies KFRI, aT, KOTRA and KTO to be in charge of halal food research, market investigation and support, eateries and tourism, and export. Besides, the first halal trade show was held in August 2015 which attracted delegates from ten countries including the UAE, Indonesia, Turkey and Malaysia. This is a further sign of Korea's commitment to develop and expand its halal export business. In October 2016, MAFRA announced KSH1061, a guideline regarding manufacturing, processing, handling and storage of halal food, in Korean Industrial Standards (KS). This recent guideline was established through a cooperation between MAFRA and KFRI, based on study of Islam nation's halal standards such as Malaysia MS, Indonesia HAS, UAE GSO and OIC SMIIC to provide basic information and requirements of halal certification for food and food service companies who wish to enter global halal food market (MAFRA 2016). In Dubai, MAFRA and aT held the Korean Food Fair in November 2016. Along with the food fair, the second Expert Forum for Halal Food between Korea and UAE also hosted on 23 November that offered more opportunities for Korean participations to understand halal rules and strategies to develop halal food industry (aT 2016).

Regards to the halal meat production, which is one of the potential industries towards top halal product exporter; currently there is no certified facility for halal meat production in Korea. All of halal certified animal meats sold in Korea are imported from Australia (Hwang 2016a). However, according to Song (2011), from interviews with few foreign Muslims regarding halal chicken meat, respondents stated that there is a facility for halal chicken meat production but only follows the general halal animal slaughtering procedure: playing recorded prayer during the slaughtering process. Although the facility enables halal chicken meat production in commercial quantity, there is no assurance of halal certification from any halal certification authorities.

On contrary to those disadvantages, there are positive features on halal food in Korea. 10 Usadan-ro ("-*Ro"* means 'road or street' in Korean) in Itaewon is a representative example where is often called as 'Islam village' where the Seoul central mosque located. The street is where halal certified restaurants are mostly located and along the road there are many halal shops. Halal restaurants serve various cuisines such as Korean, Indian, Arabian, Indo-Malay and Turkish. Besides restaurants, there are halal supermarkets, halal butchers, Muslim bookstores, halal guesthouses and halal bakeries Muslims with turban and hijab can be seen. According to an employee in halal supermarket in Usadan-ro, most of customers are foreigners from India, Pakistan and Turkey; however, the number of Korean customers today seems increasing (Lee YG 2015). Most supermarkets in Korea are not dealing with halal certified products, therefore halal certified products are mostly available in halal supermarkets which are rarely found and mostly located in foreign-populated area, where the demand for halal products and meat from Muslim consumers is high. Besides, halal food court was established upon the recent increasing demand on halal food; Hanyang University opened the first halal university food court in Korea in April 2013 - the university provides halal food twice a week. One of the Muslim students expressed satisfaction and appreciation to the university for kind consideration of Muslim students which the university only have 80 Muslim students (Jung 2013).

An export of halal food has brought noteworthy success to Korea. Korea's halal agri-food export recorded US $680 million in 2014 and expected to increase double in 2017 (KPMG International 2015). Nongshim, is considered as the most successful example in Korean food manufacturing company in global halal market that received Best Brand Signature Award (BBSA) with Nestle, Coca-Cola, McDonalds, Subway and other major global food manufacturers, by Malaysia APBF (Asia Pacific Brands Foundation); BBSA is recognised as the most authoritative brand evaluation institute since 2004 in Malaysia (Nongshim Co., Ltd. 2014). Nongshim's Shin Ramyun – Instant noodle product – is certified as halal by KMF without using beef but soybean protein in 2011. In the same year, Nongshim established special halal production facility in Busan to manufacture halal food products, and in 2013 Shin Ramyun was certified by JAKIM. From the sales of halal products, the company recorded US $2.5 million in 2014 (Yoon 2015). Orion's Chocopie is certified as halal by using plant origin gelatine instead of pork origin gelatin, several soymilk products of Dr. Chung's Food and Korean traditional tea products of Kkoh Shaem Food have certified as halal. Besides, CJ, Daesang, Crown, Pulmuone and Our Home obtained KMF halal certification on their several food products such as coffee, snacks and noodles items. Companies, such as BBQ, Nene Chicken, Red mango and Lotteria are using halal certified ingredients in Southeast Asia which have already spread widely within the region (KPMG International 2015).

Logo	Classification	Condition	Number of Restaurants in the late 2014
	Halal Certified	The restaurant has already received Halal certificate from Korea Muslim Federation (KMF).	4
	Self Certified	The owner or chef is Muslim and they only use Halal ingredients in each of their menu and they self certified their restaurant as Halal.	37
	Muslim Friendly	The restaurant does provide Halal menu however alcohol is sold in the restaurant.	24
	Pork Free	The restaurant does not offer Halal menu and serve Non Halal meat like chicken and beef. However, no pork is served or used as ingredient in the restaurant.	4
Muslim Welcome		Korean vegetarian restaurant or does not serve pork dishes.	49

*Halal menu: The slaughtering process for Halal meat including beef, lamb, and chicken follows the Islamic regulation including other Halal ingredients like seafood, vegetables, and grain (wheat).

*If the restaurant serves Halal meat along with other Non Halal meat (except pork), it is still classified as Muslim-Friendly.

Table-6: KTO Muslim Friendly Restaurant Classification
Source: KTO (2014); KTO Malaysia (2014)

Public sectors have been made significant efforts to satisfy the increasing demand of halal food. KTO established "Muslim Friendly Classification" as five categories: Halal-certified, Self-certified, Muslim Friendly, Muslim welcome, and Pork-free (Table 6). In December 2014, a booklet titled "Muslim Friendly Restaurants in Korea" was published by KTO to give further information of restaurants in Korea that Muslims may able to dine. The booklet identifies 118 restaurants and distinguishes restaurants by the classification. Besides, KTO held an event titled "Halal Restaurant Week" from 1st November to 10th December 2016 with participation of 93 Halal and Muslim Friendly restaurants in Korea to promote halalcertified and Muslim Friendly restaurants.

There were 404 products certified by KMF as halal products in 2014 and 6 restaurants certified as halal restaurants by KMF in the late 2015 (Hwang et al. 2015). As of August 2016, there was a slight increase – total number of KMF certified products of 597 items of 202 producers and nine restaurants were certified by KMF (Shin 2016; Korean Food Foundation 2016). 7 out of 9 KMF halal certified restaurants are located in Itaewon area, and serving Turkish, Indian, Arabic and Indo-Malay cuisine. From these facts, it can be assumed that most of halal certified or Muslim friendly restaurants are serving certain ethnic cuisines where the countries inherit Islamic culture and great number of Muslim population. There are around 120 restaurants in Korea are officially recognised as a Muslim Friendly restaurants by KTO, which reveals the need for more facilities to cope with increasing number of Muslim population in Korea. Lack of halal ingredients manufacturing facilities could be one of the main reasons of small number of halal certified restaurants in Korea by giving difficulties for such product and businesses to be certified as halal.

VI. Challenges in developing halal industry

Lack of manpower and infrastructure due to small Muslim population in Korea and Islamophobic views are main challenges of developing halal food manufacturing industry in Korea. Muslim labours are essential in halal food manufacturing procedure, however the author believes that manpower shortage issue can overcome by importing foreign Muslims. However, it can be assumed that establishment of halal industry would encounter a lot of opposition followed by several protestant campaigns held against halal industry. It cannot be denied that most of consumers of halal products are Muslims, while in Korea; non-Muslim population is still an absolute majority. Islamophobia1 cannot be ignored to consider acceptability of the industry in Korea. The recent terror attacks by extremism terrorist Islamic groups has worsened the reputation of Islam in Korea. What more, it seems quite adhered in the society that it is easy to find and hear Islamophobic opinions from Koreans. In fact, the proposed taxation law with the facilitation of *Sukuk* – represent the proportional ownership of assets, referred to as 'Islamic bonds' (Afshar 2013) – was rejected in 2010. Regarding the halal complex establishment, there was 23,000 online users have signed a petition against the establishment plan in Daum, a leading portal website in Korea, and such movement seems increasing public fears on terrorist attacks by the Islamic State group (Cho 2016). There was a protest in Gwanghwamun – located in the central Seoul; by Coexistence of Animal Rights on Earth (CARE), a local animal rights activist group is against the government's plan to establish halal slaughterhouses in halal complex that halal slaughtering method is more humane and cruel than conventional methods because the animals requires to stay alive and conscious before the slaughtering process is conducted (Yim 2016). There were rumours regards to the establishment of halal food complex in Iksan in a link to terrorism and Islamophobia led by misunderstandings of publics. The government had to deny the rumours, and announced deferment of the plan with the reason that less demand and that the government is reviewing the plan (Cho 2016).

Besides, some protestants seem fear on expansion of Islamic belief and its influence in Korea. They also revealed their strong opposition and Islamophobic tendencies in several campaigns opposed Islam, for example, campaigns against halal food complex in Iksan. Indeed, the plan for halal complex became controversial upon strong opposition from protest groups. There is also an argument based on the rejection of the halal food cluster which politicians are motivated by Christian lobbyists. Either such lobby really happened to be motivated or failed to motivate politicians, an established factor for the rejection is due to a strong opposition by the other religious group. In articles of Mohammed (2014) and Parker (2010), the objection of such plans and veto of Islamic-products are mostly overwhelmed by Islamophobic views and strong opposition by Christian evangelical groups. This can be deemed as a careless example by not referring such affairs to public opinion in prior to implication or action but push forward unilaterally by government or companies, which rose strong opposition from other religion groups. There is no clear solution to prevent the image of Islam continues to be worsen and it is solely depends on publics to distinguish the difference between Islam and Islamic-extremism terrorists groups. No proper understanding or information on halal and Islam as a religion provide reasons to spread Islamophobia in public, and further give false perception to other religion groups are apt to be misunderstood. It is certainly difficult to overcome Islamophobic views by publics, other religion groups and animal welfare groups that may need a long time and promotion to surmount the challenge.

VII. The Viability of the halal animal meat facility

As mentioned above, exports of halal animal meat addresses huge potential benefits as a leading exporters in global halal industry, the author assumes halal animal meat manufacturing facility at initial stage in prior to develop halal food manufacturing industry in Korea.

Figure 3 summarizes the potential impacts from the consequence of the establishment of halal animal meat manufacturing facility. Once the halal animal meat facility is established, it enables to produce halal animal meat and halal meat byproducts. Final products from the facility will be able to supply in domestic market to satisfy the demand of halal meat and its by-products. The current demand on halal products and services in Korea still retain low, however, it is expected to increase upon increasing number of Muslims to Korea in recent years. Halal animal meat facility gives great capabilities to cope with the current and increasing demand in domestic market. More halal commodities and infrastructure can embrace more Muslims to Korea by overcoming Muslims' concerns on food consumption that enables ethical consumption of Muslims in Korea. Furthermore, capability of halal animal meat production will lead to high quality and hygiene meat production, which will widen domestic consumers' choice on quality meat. Throughout the competition in domestic market with other non-halal products, halal manufacturing companies will put more efforts to manufacture better products, such as investment on advanced technology, research on halal products and wide range of halal products; which will benefit companies by improving the quality of products and increasing competitiveness of the company value. Halal animal meat facility is an opportunity to companies for halal commodity manufacturing, which can boost the benefit of the company by quality production and extension of the market towards global halal market, particularly to Middle East and other Muslim-majority countries where the demand of halal commodity are high. Final product from the local facility can give synergy to other economic subsectors such as Tourism and F&B by supplying qualified local halal animal meat to those service areas, which can reduce time and cost generated by importing halal meat. The facility would also enable the export of halal meat and product with 'Made in/by Korea.' The current spread of *hallyu* and good reputation of Korea has built a great demand of Korean products in global market. Companies can expect global name value and economic benefit from the facility by satisfying the demand not only a domestic market but also a global market. Overall, consumers, companies, industries and all stakeholders will gain benefits from the facility that enables the procedure of halal manufacturing industry and further development of halal industry in Korea.

Therefore, halal animal meat manufacturing facility will benefit all stakeholders as economic benefits and quality food products. Manufacturing companies and industries will earn income and high competitiveness in domestic and global market by supplying their quality food products. Halal commodity or service providers can furnish quality local products with affordable price from the facilities that may encourage development and diversification of halal industry in Korea. Muslim consumers can overcome their difficulties on food consumption in Korea and non-Muslim consumers will have wider choice of quality products purchase. The facility also can promote economic circulation in Korea which increases the demand of logistics and labour to facilitate the manufacturing production. Thus, the facility lays the foundation of halal manufacturing industry in Korea which has a potential to accelerate the development of the industry and benefits all stakeholders.

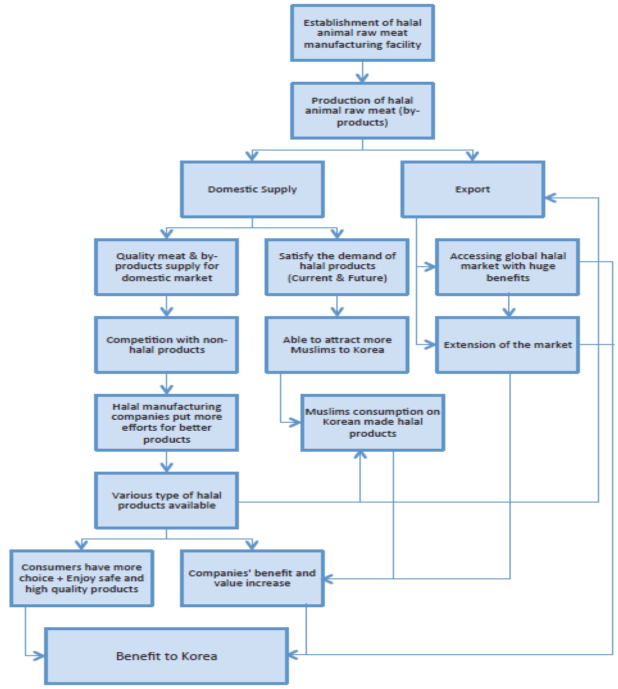

Figure-3: Potential impacts of halal meat manufacturing industry to Korea
Source: Created by author

VIII. Conclusion

It is obvious that halal industry is no longer a niche market but a major global market that is valued at trillion dollars with remarkable growth with large number of Muslim population and demands. The term 'halal' is originated from Islam, which once was conceived as an exclusive term for Muslims. However, an increasing awareness among non-Muslims acquainted strict halal standard as a guarantee of hygiene, and safety that gives further potentials on development of halal industry worldwide. Halal certification is given as an assurance to certify that such product or service is halal that followed strict requirements and Islamic regulation to satisfy the quality and purity. The demand and growth of the industry are expected to increase further along with the increasing number of Muslim population in worldwide. Several countries and companies have already benefited from the industry that extended the market, earned economic benefit and built high recognition of their name values, brand images, product and service qualities and local halal certification. The remarkable benefits resulted from the industry attracted the interest of many countries and companies. The current top halal exporters and pioneers are trying to further their markets with further research and improvement on their products and services. The current top exporters are the top animal meat and live stock exporters that hinted at the potential of halal meat manufacturing facility as an impelling force for maximizing the benefit towards a global manufacturer. With the current remarkable benefit of the current top halal exporters and potentials derived from halal animal meat, this study suggested halal animal meat manufacturing facility as a cornerstone for development of halal manufacturing industry.

Korean government is keen on halal industry and started to make several efforts to promote the industry. However, it is a clear fact that there are several limitations to develop the industry due to small Muslim population and lack of infrastructure and researches on halal. Halal manufacturing process requires Muslims' involvement in whole processes with Islamic regulation, which requisites experts and considerable number of Muslim manpower. It is only recently that Korean government ventured into the halal industry, while other halal exporting countries and pioneers are focusing on improvement of their current high status to higher level. Lack of understanding in halal and Islam and publics' Islamophobic views give another barrier to the development of the industry in Korea. In fact, there was publics' opposition and negative views on halal and Islam on the government's halal food cluster establishment plan that has to be deferred indefinitely. The current nominal recognition of KMF halal, a major halal certification authority in Korea, is the other barrier that needs to be overcome. It is clearly low in price and shorter period to obtain KMF halal certification for Korean manufactured products compared to obtaining foreign countries' halal certification. However, the current recognition of local halal certification may give concerns to applicants due to its low competitiveness in global halal market.

It was identified that despite challenges, benefits generated from the halal animal meat manufacturing facility are considerable that all stakeholders can benefit from the industry and further give positive impacts in economic sub-sectors in Korea. To accomplish the success in halal food manufacturing industry, strong government support, more investments, promotion to increase the current nominal recognition of KMF halal and overcoming Islamophobic views of public are absolutely necessary. The current *hallyu* (Korean wave) with governments' interest and efforts towards halal food manufacturing industry can boost the development of the industry in global market with an establishment of halal animal meat manufacturing facility as a cornerstone.

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The Role of Top Management Support on Organizational Factors and Knowledge Management

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Abstract- The aim of this paper is to conceptualize top management support as a moderator for the relationship between organizational factors (culture, leadership and structure) and knowledge management for Bangladesh's business organizations. This paper discusses knowledge based view and revisits knowledge management literatures to establish a relationship between organizational factors and knowledge management and tries to propose a conceptual model for Bangladesh's business organizations. Future investigation supported by empirical evidence will help mangers to understand knowledge management initiative effectively.

Keywords: Knowledge Management, Organizational Culture, Organizational Leadership, Organizational Structure and Top Management-support

I. INTRODUCTION

Knowledge based view of the firms considers knowledge as strategic resource that creates sustainable competitive advantage for the organizations (Grant, 1996; Davenport and Prusak, 1998). Because of its socially complex and hard to imitate nature it has become a distinctive resource to the business managers that gives sustainable competitive advantage. Nowadays, managers are trying to make their organization a knowledge based organization so that they can sustain in this dynamic business environment. To become a knowledge based organization, proper knowledge management initiatives are essential (Rahman et al., 2016) but that require the presence of supportive organizational factors i.e. organizational culture, leadership and structure (Gold et al., 2001; Lee and Choi, 2003; Handzic, 2011). Despite having necessary preconditions fine-tuned, knowledge management initiative may fail if the top management of the organization doesn't provide appropriate support for the effectiveness of knowledge management initiative. Business organizations in developing countries like Bangladesh, those who might need to establish knowledge management initiative to sustain competition caused by globalization, do they understand the significance of top management support in implementing knowledge management initiative? Or they think that developing knowledge management infrastructure and understanding knowledge management process will be enough to conduct knowledge management initiative continuously?

Bangladesh is an emerging economy (International Monetary Fund, 2016). Its business organizations are developing gradually. Bangladesh gross domestic product (GDP) is dominated by service sector which in 2014-15 financial year reported 53.62 percent contribution with a 5.83 percent growth (Ministry of Finance, 2015). Characteristics of service sector portrays high dependency on knowledge than any other sector (Cowan et al., 2001). To sustain competition both locally and globally, adopting knowledge based view of the firm and implementing knowledge management initiative seems to be the only way to create long term competitive advantage. Hence, organizations requires to have not only knowledge management capabilities but also appropriate top management support to implement knowledge management initiative.

II. LITERATURE REVIEW

Knowledge Management

In organizational context knowledge management can be defined as a process of collecting, storing and disseminating knowledge in an organization (Islam et al., 2015). It is also defined as the process of acquiring, storing, sharing, creating, and using knowledge (Nonaka et al., 2000). According to Jashapara (2011) knowledge management involves exploration, exploitation and sharing of human tacit and explicit knowledge with the help of appropriate technological tools and supportive cultural environments to enhance organizational performance. In the literature, knowledge management has been linked with various positive outcomes for organizations. It has been found to have significant influence on organizational performance (Kalling, 2003; Zack et al., 2009; Mills and Smith, 2011). It is also claimed that proper knowledge management increases innovativeness and responsiveness

(Hackbarth, 1998). Nowadays, it is the key strategy for organizations to survive and succeed in the highly competitive business environment (Haslinda and Sarinah, 2009). According to Gold et al. (2001) a proper knowledge management initiative requires a good knowledge management process and supporting infrastructure. Researchers have identified number of factors that can affect knowledge management. According to Davenport and Prusak (1998) and Liao et al. (2011) organizational culture, organizational leadership, organizational structure are critical success factors for knowledge management. Importance of organizational culture, leadership and structure is also mentioned in the research of Islam et al. (2015), Skerlavaj et al. (2007), and Kulkarni et al. (2006).

Organizational Culture and Knowledge Management

Organizational culture is generally seen as a set of key values, assumptions, understandings, and norms that is shared by employees of an organization and taught to new members as right (Daft, 2005). According Islam et al. (2015) appropriate organizational culture is a prerequisite for knowledge creation and dissemination. Researches on knowledge management have always given high importance on the relationship between culture and knowledge management (Davenport and Prusak, 2000; Skerlavaj et al., 2007). Successful implementation of knowledge management initiative is highly dependent on organizational culture (Alavi and Leidner, 2001).

Organizational Leadership and Knowledge Management

Leadership is a process of interaction between leaders and subordinates where subordinates are influenced by a leader to accomplish organizational goals (Yukl, 2005). In the literature, many theoretical and empirical studies have concluded that leadership plays a substantial role in knowledge processes, such as sharing, creation, and capture (Politis, 2002; Bryant, 2003; Srivastava et al., 2006; Lakshman, 2007), and the successful implementation of knowledge management initiative (Liebowitz, 1999; Kulkarni et al., 2006). In the study of Birasnav (2014) it was found that the characteristics of transformational leader helps to transfer knowledge among employees.

Organizational Structure and Knowledge Management

The term organizational structure refers to the ways in which tasks are formally segregated, classified and coordinated in organizations (Robbins, 1996). It is the mechanism that also governs communication patterns and interaction (Islam et al., 2015). In the literature organizational structure is found to be associated with effective knowledge management initiative. According to Nonaka and Takeuchi (1995) appropriate organizational structure would improve knowledge creation and sharing capabilities. To get the full benefit of resource like knowledge, appropriate structure should be in place (Claver-Cortés et al., 2007).

Top Management Support

Top management support denotes how top managers provide direction, authority, and resources in the organization (Ifinedo, 2008). Top management is the group of people who constitute the highest level of management in an organization. They are the organization's direction setter (Alderson, 1993). With them lies the responsibility to formulate strategy, goals, objectives, mission, and definition of responsibilities to keep the organization moving in the desired direction (Alderson, 1993). Top management through leadership skills acts as a role model to implement knowledge management initiative in the organization without any coercive influence (Islam et al., 2015). Top management have major impact on the organization's culture (Schein, 1985). According to Klein (1998) top management support play a major role for developing organizational culture that supports knowledge management. In the study of Alderson (1993) it was found that poor top management performance and sensitivities among top management will result in negative culture and poor relationships. Usually, in an organization there are different level of management e.g. top management, mid-level management and lower or operational level management. In regards to leadership skill, not only top managers but also mid and lower level managers exert leadership skill in their respective dominion. Literature shows that managers other than top managers are also very important hub for leadership function. For successful knowledge management initiative all level of managers should come forward and display good leadership skill. To ensure this top management can play a crucial role here. By providing adequate support they can encourage mid and lower level managers to exhibit desired leadership skill. A study by Wooldridge and Floyd (1990) suggests that middle managers expects top management direction, therefore, top management should clearly define the strategic context (Wooldridge and Floyd, 1990). Another study by Rainey and Watson (1996) showed that display of transformational leadership skill by higher level executive triggers similar skill among middle managers as well (Rainey and Watson, 1996). On the other hand, if there are inadequate support from the top management then they will be less likely to display transformational leadership (Rainey and Watson, 1996). Furthermore, top management support can create an organizational structure that smoothens the implementation of effective knowledge management initiative. Poor top management performance causes structural problems and disagreements on managing the organizational structure

(Alderson, 1993). In a nutshell, it can be observed that top management has the ability to affect organizational culture, leadership and structure, therefore, we can assume that top management support can be a moderating variable between organizational factors (culture, leadership and structure) and knowledge management.

III. IMPLICATIONS

For effective knowledge management initiative, it is vital to know the factors that influence it. Organizational factors such as culture, leadership and structure have been found to affect knowledge management directly in numerous studies. But there are some other variables that can influence the relationship between organizational factors and knowledge management. Top management support could be one of those variables. In the literature, it is evident that top management support has influenced organizational culture, leadership and structure in various ways. If business managers of Bangladesh could assert the value of top management support in implementing knowledge management initiative then they would find it very easy to establish a system that will give competitive advantage over long run. In terms of theoretical significance, this concept will provide researcher new dimension to probe at the relationship between organizational factors and knowledge management.

IV. CONCLUSION

In the present economic context, for business organizations, knowledge is considered the only source of sustainable competitive advantage. Effectiveness of knowledge management initiative will determine the business success in future. In this paper, we tried to present the importance of top management support in implementation of knowledge management initiative. Based on the findings of studies by other researchers we can observe that the relationship between organizational factors (culture, leadership and structure) and knowledge management can be moderated by top management support. Future investigation supported by empirical evidence will help us to get more in depth understanding about the level of influence of top management support on the aforementioned relationship in Bangladesh's business organizations.

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Antecedents to Work Engagement and Its Influence on Academicians Learning Goal Orientation

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***Abstract:** The aim of this study is to test a model which proposes that trust and job demands affect work engagement, which in turn influence learning goal orientation. This is a cross-sectional study, where data were collected through questionnaire from a sample of academic staff (n = 265) attached to Malaysian public universities. The results from the stuctural model of Partial Least Squares Structural Equation Modelling (PLS-SEM) indicate that trust and job demands are the key factors that influence the work engagement of academic staff, which ultimately promote their learning orientation. From the findings obtained, the proposed model is substantially validated and successfully supports all the two hypotheses tested in this study. The findings do not only benefit academicians in particular, from the aspect of their learning goal orientation, but also Malaysian public universities, in general, from the aspect of the university's performance. This study includes a detailed discussion of the research findings as well as the theoretical and practical ramifications of this study.*

***Keywords:** Trust, job demands, work engagement, learning goal orientation, academic staff.*

Introduction

Universities is one of the knowledge-intensive sector that comprised of a large groups of k-workers (i.e. knowledge worker) or better known as academic staff, who have competence in creating and commercializing knowledge through interdisciplinary collaboration within and outside the universities (Arokiasamy et al. 2011). Therefore, universities have been recognized as one of the parameters in the knowledge economy index (World Bank 2008).

Academic staffs are those who are holding position as tutor, lecturer, senior lecturer, associate professor or professor. This group of k-workers do not only assume the role as educator and advisor but also as a researcher, who are keen in engaging in diverse research and development (R & D), and commercializing activities. They are excellent with the utilisation of knowledge capital (e.g. ideas, methods, processes and systems) as strategic resources for commercialisation purposes in all socio-economic activities. In order to ensure academic staff are constantly capable to make use of their expertise and knowhow for the sustainability of the nation's wealth creation and societal well-being; the issues of work engagement among academic staff need to be emphasized. This is due to the fact the level of work engagement can significantly affect academic staffs' learning goal orientation, which is the main element for the capacity for knowledge, creativity and innovation. Studies by Barkhuizen et al. (2014), Takawira et al. (2014), Field and Buitendach (2011) agreed that in order to leverage the intellectual capital of academic staff, their engagement on work needs to be sustained as this will promote academic staff's willingness to contribute in developing universities competitive advantage.

The capability of academic staff to create new knowledge and technologies for commercialisation has become a source for university to compete successfully in an increasingly demanding socio-economy. However, this capability depends on their learning orientation. Academic staff should be constantly updating their frontiers of knowledge to keep abreast with the current competencies as well as to think and behave creatively. Therefore, academicians need to be proactive in learning to invent knowledge capital in the form of innovative products and services, technologies, systems, tools and machinery that the market demand and value. In this regard, the issue of work engagement and learning goal orientation cannot be neglected. This is because in order to ensure that academicians are keen in learning, they should be passionate about their work.

The above discussion shows that there is a need to perform an empirical study to understand the antecedents of work engagement and its influence on academic staff's learning goal orientation. The findings of this study may contribute significantly to the growing body of knowledge on studies related to work attitude and behaviours (i.e., trust, work engagement and learning goal orientation) among academicians and demonstrate more clearly how academic staffs' learning goal orientation was influenced by their work engagement.

Literature Review

Trust

Trust is the expectancy held by an individual that the behaviour of another person will be altruistic and personally beneficial (Frost et al. 1978). Trust basically involves an individual with one or more parties. It is the level of confidence in the ability, integrity and honesty of another individual. From the organisational perspective, trust is a critical element in the relationship between employees and their immediate supervisors that are bound by the psychological contract formulated once an employee becomes a member of an organisation (Mishra 1996). The key elements that uphold the trust between employees and their supervisors are integrity, honesty, sincerity and truthfulness.

Job demands

Job demands can be referred to as the psychological stress factors (e.g., high workload, emotional pressure, job stress, role overload) that influence how employees manage their tasks calmly (Mustosmäki et al. 2013). In practice, job demands or high workload can be measured through the number of tasks performed, the time needed to complete a task or the complexity of a task (Taipale et al. 2010). An employee can be said to experience high job demands if he/she needs to complete many tasks in a short period of time compared to others who are in similar position. This is supported by Fox et al. (1993), who agreed that job demands are psychological stressors that always require an individual to work under great pressure in terms of time and speed.

Work engagement

Work engagement consists of three work-related psychological states, namely vigour, dedication and absorption (Balducci et al. 2010). As defined by Balducci et al. (2010), vigour is the high levels of energy and mental resilience while working. Meanwhile, dedication refers to being enthusiastic and passionate in one's work (Balducci et al. 2010). Lastly, absorption is being completely focused and deeply involved in one's work, to the point of not being able to detach oneself from the work at hand although time has passed by quickly (Balducci, et al. 2010; Schaufeli & Bakker 2004). Basically, work engagement is an indicator of the commitment of an employee towards his/her work. Engaged employees are often so engrossed in their work that they seldom feel bored or burdened even if they are experiencing heavy workload (Masvaure et al. 2014).

Learning goal orientation

Individuals, who have high level of learning goal orientation, tend to be eager in learning and mastering new skills and competencies (Dweck 1986). Thus, they are confident with regard to their capability and therefore they believe that they can strengthen their intellectual through continuous learning (VandeWalle 2003). Interestingly, these individuals would react intelligently if they encounter task difficulty or failure. In other words, when they are contended with challenging tasks, individuals with high level of learning oriented know how to work vigorously and transform their know how towards better performance (Dweck 1986; Dweck & Leggett 1988; VandeWalle 2003). Learning oriented individuals are likely to engage in goal oriented activities, diligently organise their work, confident in producing a desired result and remain persistent when they come across task-related difficulties (Dweck 1986; VandeWalle 2001). Learning oriented individuals not only work smart but also work hard (Sujan et al. 1994). They will fully utilise each learning opportunity to enhance their personal competencies.

Research framework

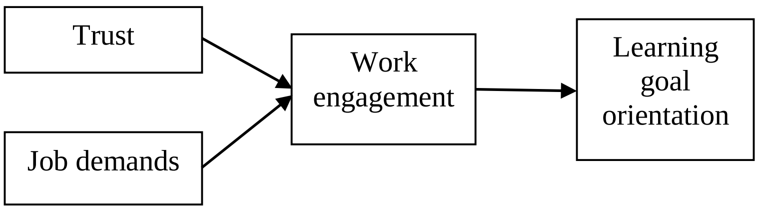

Figure 1: Research framework

As indicated in Figure 1, this study proposes that trust and job demands influence employees' work engagement. To develop and cultivate work engagement among employees, it is vital for employers to keep their promises and exert strenuous efforts in realizing the terms in the psychological contract, which always depict an "optimal fit" between the employees and the organisation in terms of common expectations (Schaufeli & Salanova 2007). From the social exchange perspective, when employees believe that the employer recognises their efforts, treats them with respect and cares about their welfare, they may feel obligated to be committed to and engaged in their work. In other words, when employees are confident that their employer is fair in the allocation of rewards, shares information in a transparent manner, keeps promises and respects their rights, they may feel there is a need for them to reciprocate by undertaking their work with vigour, dedication and absorption (Chughtai & Buckley 2011; Saks 2006). Thus, it is logical to predict that employees who are predisposed to trust others will be more likely to be involved in a two-way relationship with their supervisor as they believe that he/she is a person who can be relied upon. A consistent and reciprocal relationship that is underpinned by trust of both parties (i.e. the employees and their supervisor) motivates employees to engage in their work (Schaufeli & Bakker 2004). However, if employees do not trust their supervisor, this would lead to employees feeling a sense of disappointment that will ultimately lead them to being disengaged from their work

On the other hand, employees who have high workload perceive themselves as valuable to their employer as their supervisor is willing to assign different tasks and give opportunities for them to grow. In exchange, employees will be more willing to contribute and be engaged in their work. Studies (e.g., Bakker et al. 2007; Chughtai & Buckley 2011; Janssen 2000; Mustosmäki et al. 2013) have shown that higher level of job demands facilitates employees' work engagement as employees have to continuously enhance their abilities to match the job requirements. Job demands can be interpreted as additional commitment or obligation in employees' work roles. Thus, high job demands may amplify employees' commitment at work.

The Broaden-and-Build Theory of Positive Emotions suggests that individuals' motivation to learn in most instances is stimulated by their positive emotions (e.g., vigour and enthusiasm). Prior researchers (Frederickson 2004; Chughtai & Buckley 2011) have agreed that "broadened mind-sets" resulting from positive emotions like joy, eagerness and being immersed and engrossed, tend to inspire an individual to engage in learning actions. Hence, work engagement that characterised by three positive work-related psychological states, which are vigour, absorption and dedication, can be assumed as favourable emotional state that enacts individuals' behaviours and prompts them to engage in active learning orientation (Frederickson 2004).

Following the above discussion, two hypotheses are formulated as follows:

H1: Trust and job demands positively predict work engagement.

H2: A statically significant relationship exists between work engagement and learning goal orientation.

Methods

Sample and Procedure

A total of 600 questionnaires were distributed to six public universities located in the northern and central regions of Peninsular Malaysia. Out of 283 questionnaires returned, only 265 questionnaires were usable for further analysis after dropping cases with missing values and outliers. A non-probability purposive sampling was used to identify the targeted samples.

The respondents consisted of 146 male and 119 female. 81.5% of respondents were married. The majority of respondents are above 40 years old (44.2%) and most have been in the current university's employment for at least four to seven years (37.4%). In terms of academic achievements, 146 respondents (55.1%) have Doctoral degree, while 119 respondents (44.9%) have Master's degree. With regard to job position, Senior Lecturer and Lecturer dominated the sample with 52.1% and 32.5% of the whole sample, respectively. Only 10.1% of respondents are Associate Professors, while 3.4 % are Professors and the rest or 1.9 % are Tutors.

Measurements

Measure for trust was adapted from Mishra and Mishra (1994). The 15-items gauged individual's trust towards his or her university's management team. Meanwhile, a five-item scale was adapted from de Mello Alves et al. (2004) to measure job demands. Eight items adapted from Button, Mathieu and Zajac (1996) to assess learning goal orientation. Lastly, work engagement were examined using a nine-item scale adapted from Balducci et al. (2010). All the responses were made on a 5-point Likert-scale that ranged from (1) almost never to (5) very often except for learning goal orientation.

Findings

Validity and reliability

To determine the validity and reliability of the instruments, confirmatory factor analysis (CFA) was performed using Smart PLS 2.0. The validity and reliability was determined from the evaluation of factor loadings, composite reliability (CR) and average variance extracted (AVE) of the variables measured. Table 1 depicts the factor loadings of all items that ranged from 0.706 to 0.942. A total of nine items were deleted from further analysis due to their low loading value of less than 0.70 (Hair et al. 2017). Next, CR and AVE were observed. The value of CR for all variables ranged from 0.878 to 0.964 and the AVE values lay between 0.590 and 0.849, which are above the cut-off values of 0.70 and 0.50, respectively (Hair et al. 2017). This evidence supports the convergent validity of the measurement model. Besides that, the results of Heterptrait-Monotrait Ratio (HTMT) reported that the values of squared consistent construct correlations of all reflective constructs were below 1 (Henseler et al. 2016). Therefore, discriminant validity of the measurement model was also well established.

Hypotheses testing

A structural model is formulated to test the previously addressed hypotheses. The coefficients of determination (R^2) of the dependent variables (i.e. work engagement and learning goal orientation) were gathered. The result found that 16.6% of the variance in work engagement was explained by trust and job demands. Meanwhile, work engagement able to explain 18% of the variance in learning goal orientation. Then, the value of effect sizes (f^2) of exogenous variables on the endogenous latent variables were calculated. According to Cohen (1988), the effect size that fall between 0.02, 0.15 and 0.35 indicates small, medium and large effect respectively. The results of effect sizes are summarized in Table 2.

Table 1: *Results of measurement model*

Variables	Measurement items	Loading	CR	AVE	R^2
Trust	Trust1	0.800	0.964	0.644	-
	Trust 2	0.769			
	Trust 3	0.845			
	Trust 4	0.816			
	Trust 5	0.759			
	Trust 6	0.779			
	Trust 7	0.816			
	Trust 8	0.853			
	Trust 9	0.869			
	Trust 10	0.772			
	Trust 11	0.829			
	Trust 12	0.818			
	Trust 13	0.819			
	Trust 14	0.736			
	Trust 15	0.739			
Job demands	JD1	0.901	0.919	0.849	-
	JD2	0.942			
Work engagement	EgA1	0.710	0.901	0.604	0.166
	EgA2	0.734			
	EgD1	0.789			
	EgD2	0.826			
	EgD3	0.819			
	EgV3	0.777			
Learning goal orientation	Learn1	0.706	0.878	0.590	0.180
	Learn 2	0.781			
	Learn 6	0.804			
	Learn 7	0.804			
	Learn 8	0.740			

Note: CR = Composite reliability; AVE = Average variance extracted (AVE); R^2 = R square

Table 2. Analysis of effect size.

Exogenous	f^2 *on endogenous (work engagement)*	f^2 *on endogenous (learning goal orientation)*
Trust	0.105 (small)	-
Job demands	0.066 (small)	-
Work engagement	-	0.219 (medium)

Note: $f^2 = (R^2\text{included} - R^2\text{excluded}) / (1 - R^2\text{included})$.

In addition to that, predictive relevance (Q^2), a criterion that evaluates how well endogenous variables are explained by predictors in a structural model (Chin 1998; Hair et al. 2017) were also determined. As suggested by Hair et al. (2017), if the Q^2 is greater than 0 then the model can be viewed as having enough predictive relevance. Using an omission distance of six with the sample size of 265, the result found that all endogenous variables (i.e., work engagement = 0.095; learning goal orientation = 0.101) have enough predictive relevance as all values are greater than 0.

To test the hypothesized relationship. A bootstrapping (5000 resamples) procedure was employed to generate *t*-statistics (Hair et al., 2017). The results are summarized in Table 3.

Table 3. Hypotheses testing

Hypotheses	Relationship	Coefficient	*t* value	Supported
H1	Trust → Work engagement	0.299	3.804**	Yes
	Job demands → Work engagement	0.237	2.996**	
H2	Work engagement → Learning goal orientation	0.424	6.038**	Yes

Note: t-value > 2.33 = significant at $^{**}p<0.01$

The results indicate that trust ($\beta = 0.299$, $p < 0.01$) and job demands ($\beta = 0.237$, $p < 0.01$) have positive influence on work engagement, while work engagement has positive influence on learning goal orientation ($\beta = 0.424$, $p < 0.01$). Hence, all hypotheses (i.e., H1 and H2) posited earlier in this study are supported.

Discussion

One of the objectives of this research is to examine the influence of trust and job demands on work engagement. The findings of this research indicate that work engagement is positively influenced by trust. Based on the social exchange perspective, when individuals believe that the superior appreciates their efforts by providing recognition and fair rewards as promised, they are more willing to reciprocate under the norms of social exchange by showing greater involvement in their work (Blau 1964). Similarly, academic staff will have a higher level of work engagement if they have positive perceptions toward the university management team's character (e.g., dependability, integrity, truthfulness, and capability). They will be confident that their superiors can fulfil their responsibilities with regard to important aspects of the job, such as performance evaluation, developmental opportunities and rewards allocation. Such positive perceptions increase academicians' commitment and enthusiasm for the job as they strongly believe that their efforts and contribution will undoubtedly be compensated accordingly.

The results also reveal that job demand is a significant predictor of work engagement. This result signifies that academicians with high job demands are more likely to engage in their work. As indicated earlier, academic staff not only assume teaching roles, but also as researchers. On top of that, academic staff also carry out administrative tasks, responsible to fulfil the target assigned in the number of publications required of them and they also have to be involved in commercialisation activities. Thus, it is reasonable to deduce that academic staff are experiencing high level of job demands, which need them to work fast under tight time schedules. This requires academic staff to use various skills, such as independent problem-solving skills, communication and presentation skills and multi-tasking, in addition to applying technical knowledge to cope in a highly volatile and stressful situation. Such a highly demanding work scenario might provide them an opportunity to effectively face new challenges and experiences. Karasek (1979) suggested that high job demands are not necessarily harmful since too few demands might lead to employee boredom. In fact, a job that is challenging may nurture the feelings of motivation and accomplishment at work. Such feelings will increase employees' enthusiasm for the job and consequently elicit higher work engagement.

Besides that, the findings of this study affirm the proposition that work engagement has a direct effect on learning goal orientation. This means that work engagement can foster academic staffs' learning orientation. When academic staff feel vigorous at work, they will feel an urge to enrich their competencies through learning new skills and acquiring new knowledge in order to enhance their performance at work. This will in turn lead them to continuously have a strong passion passionate in their work. Academicians with such attribute can be characterized as learning orientated individual since they are very committed in their work and they are more likely to seize the opportunities for continuous enhancement via different learning activities. Therefore, it is evident that work engagement is a motivational source that will encourage academic staffs to elevate their capabilities through continuous learning.

Implications, Recommendations and Conclusion

This research contributes to the extant literature in two important ways. First, previous research has extensively concentrated on the role of the job resources for nurturing employees' work engagement factors. The present study attempts to bridge this gap by examining the effect of trust and job demands on work engagement. Hence, to some extent, this research contributes to the literature by unravelling other potential factors that may influence employees' engagement at work.

Second, this research adds empirical evidence to the Broaden-and-Build Theory of Positive Emotions, which posits that a positive state of mind in the form of work engagement will promote individuals' learning goal orientation. Previous researchers, who have utilised this theory, have focused on the relationship between work engagement and employees' work behaviour in the private sector. This research extends the application of this theory by examining the aforesaid relationship using a sample drawn from the Malaysian public universities. This is important because focusing on a different research setting may expand the practical application of this theory.

The findings of this research also provide useful information to present academic staff with regard to their job demands since their work are extensively involves the creation, promotion and application of new ideas when they carry out their research, publication, teaching, supervision and consultancy activities. These routine tasks require them to be learning oriented and creative in solving problems and contributing to wealth creation for their university. Therefore, the management of the university, especially the Registrar's Department, must consider creating a work environment that nurtures innovativeness and facilitates opportunities for learning. Increased opportunities to acquire new knowledge and skills can help academic staff to turn ideas into reality. The Registrar's Department can also cultivate work engagement and learning among academic staff by ensuring developmental programmes, such as job enrichment and enlargement, training, performance management, and short courses. In addition, a career resources centre must be made available. All these programmes can help motivate academicians and foster their enthusiasm to work innovatively, thus contributing to a higher level of performance and excellence in the university.

This study is not without its limitations. It only concentrates on academic staff in Malaysian public universities located in the northern and central regions of Peninsular Malaysia, and does not include academicians who work in private universities. As such, the findings of this study may not be generalizable to academic staff working in other public and private universities due to differences of work culture and management practices that likely to affect their work attitudes and behaviours. Future research could undertake a comparative study by incorporating academicians from both public and private universities.

Besides that, the data of this study was gathered only through a questionnaire. Thus, the feedback depends on the voluntary cooperation of the academicians. Further, the responses may not be a consistent and accurate measure of work behaviour since respondents may be biased when answering the questions in order to project their good image. Therefore, to enhance the precision of findings, quantitative and qualitative methods of research could be incorporated in future studies.

In summary, the findings of this research provide support for the key propositions, i.e., that trust and job demands can be instrumental in enhancing employees' work engagement. More importantly, this study has successfully provided empirical evidence pertaining to the link between trust, job demands, work engagement, and learning goal orientation.

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Developing Strategy Implementation Framework for Public Sectors

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Abstract— Strategy implementation is the translation of chosen strategy into organizational action to achieve organizational goals. It has been suggested as the most important and challenging process in an organization (Barrows, 2014). Hence, there is a growing need of an organization to think strategically and adapt certain factors needed in local context to aid their organization in strategy implementation (Marquis and Raynard, 2015). This paper aims to review the literature surrounding existing strategy implementation frameworks and its empirical contribution thus filling the knowledge gap on the subject of strategy implementation by building a new framework that could be more relevant to the circumstances prevailing in the public sectors. The proposed framework will be tested in the context of public sectors with the intention of providing empirical insight to the context that lacks such studies as well as stipulating practical contribution to managers and policy implementers for a more effective way to achieve their organizational goals.

Keywords: strategy implementation, public sectors, strategic management

I. INTRODUCTION

Strategy implementation was among the most important and most challenging issues as it can be a fairly complex and multifaceted organizational process (Barrows, 2014; Thorpe and Morgan, 2007). Strategy implementation, which is a part of strategic management, generally refers to the execution of strategic plan within an organization. It involves translating a chosen strategy into a set of organizational actions or activities to achieve organization goals, either short or long-term (Wheelen and Hunger, 2010), by allocating budget for the activities (Kaplan and Norton, 2006) and by detailing the activities that cover organizational structure, procedures and authority system (Thompson, Gamble and Strickland, 2011).

Strategy implementation is prone to be affected by complexity of environmental factors and organizational factors (Rahimnia, Polychronakis and Sharp, 2009; Sterling, 2003). Evidences on the obstacles (Hrebiniak, 2008; Raps, 2005), impediment (Chemwei, Leboo and Koech, 2014), barriers (Heidi, Gronhaug and Johannessen, 2002; Latif, Gohar, Hussain and Kashif, 2012; Nazemi, Asadi, Asadi, 2015), failures (Ivancic, 2013; Kalali, Anvari, Pourezzet and Dastjerdi, 2011; Koseoglu, Barca and Karayormuk, 2009; Song, 2009) and follies (Fahey, 2013) are increasing in relation to strategy implementation.

Regardless, some authors have come up with ways to address these issues (for example: Brenes, Mena, Molina, 2008; Cater and Pucko, 2011; Crittenden and Crittenden, 2008; Lee and Puranam, 2015; Mbaka and Mugambi, 2014; Nkosi, 2015; Pournasir, 2013). Therefore, it is important to understanding the process of strategy implementation in an organization by comprehending the individual factors within the organization that contributes to it (Guiette and Vandenbempt, 2013).

Strategy implementation in the public sector is especially crucial because public sector is collectively, the largest provider in a country (Baily, Croxson, Dohrmann and Mendonca, 2011). Therefore, having strategies to be implemented is crucial in order to achieve their long-term objectives. This can be attain when public sector think strategically about the fundamental activities; focusing on its strategies and the process it would implement to achieve the country's long-term objectives (Curristine, Lonti and Journard, 2007). This study aims to build a new framework that could be more relevant to the circumstances prevailing in the public sectors. In order to do so, this paper intends to find the gap from the past frameworks of strategy implementation and studies on strategy implementation that is based on qualitative and quantitative content analyses, as well as case studies and viewpoint papers.

II. LITERATURE REVIEW

A. Review of Strategy Implementation Framework

As stated by Hambrick and Fredickson (2005, p.53), "if an organization has a single unified strategy, then it must necessarily have parts that contribute to it". With this statement, strategy implementation frameworks are built and revolved around different factors. Based on the review of the strategy implementation frameworks, it was found that several frameworks have categorized several factors into group (for example: Okumus, 2003; Pryor, Anderson, Toombs and Humphreys, 2007; Yang, Guo-Hui and Eppler, 2010) while others have listed the factors individually (for example: Aaltonen and Ikavalko, 2002; Hill and Jones, 2008; Higgins, 2005, Thompson, 2001).

Therefore, the major shortcoming of this are the unclear role of the categorization. Moreover, the individual factors are not elaborated extensively. These frameworks also vary in terms of their approach and impact. For example, a majority of the research have emphasized on linear connection between each of the factors that lead to strategy implementation (for example: Aaltonen and Ikavalko, 2002; Higgins, 2005; Hill and Jones, 2008; Okumus, 2003; Olson, Slater and Hult, 2005; Waterman, Peters and Phillips, 1980).

While Pryor et al (2007) framework emphasized on all the individual factors to be aligned in a cyclic way to achieve maximum efficiency and effectiveness of strategy implementation. Other frameworks emphasized on step-by-step approaches on how to implement strategy (for example: De Flander, 2012; Kaplan and Norton, 2006). Yet, the explanations on how the factors have interaction and relation with each other are still limited.

B. Review of Factors used in Strategy Implementation Past Studies

It was observed that the majority of strategy implementation studies predominantly fall into two major areas which are the obstacles, impediments, barriers, failures and follies of strategy implementation and the levers, imperative and key success factors essential in strategy implementation. These studies were also found to vary by context, to which it was only tested in a specific context such as the private sectors or public sectors.

Much of the studies were only tested empirically on its significance in a random manner without discussing on the elaboration of the individual factors. For example, factors such as leadership, organizational culture, organizational structure and communication were found to influence strategy implementation in private sectors (for example: Cater and Pucko, 2011, Nazemi et al, 2015; Lihalo 2013; Pournasir, 2013; Speculand, 2014). These factors were also found to influence strategy implementation in public sectors (for example: Nkosi, 2015; Rohajawati, Yudho, Sucahyo and Arymurthy, 2016; Sial, Usman, Zufiqar and Khursheed, 2013). In addition, there were issues around policy making and availability of resources that can hinder strategy implementation in delivering regional strategies (Preuss, 2011) and for the implementing strategy of the millennium development goal for the governmental organizations (Omondi, Ombui and Mungatu, 2013).

Stewart (2014) later found that political context can be a tension in the implementation process of a public sector program. Even though the studies examined added on empirical contribution to the subject, it can be concluded that the articles demonstrated a trend of similar repetitive variables but with a random manner that does not fully utilized the frameworks of strategy implementation. This shows that implementation research has been fairly fragmented (Kazmi, 2008).

III. IMPLICATION AND FUTURE PLAN

As strategy planning efforts in the public sectors have often ended unimplemented (bundi and omwenga, 2016), a more thorough process of strategy implementation framework in the area of public sectors is needed. This conference paper is focused on the conceptualizing stage, by doing a vigorous literature review, this paper intends to build a new framework based on issues that was addressed from past studies. In the future, the proposed framework is intended to be applied and tested empirically in the context of public sectors, particularly the public sectors in Brunei Darussalam.

Even though strategy implementation can be a complex and multifaceted process, an appropriate framework can give a better insight of it. While the proposed framework may have limited applicability as it only demonstrates its application only to public sectors, the strong point of the proposed framework is the holistic overview of strategy implementation framework that could assist public sectors to achieve their organizational goals.

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The Analysis of Strategic Business Alignment and Organization Performance

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Abstract— Globalization of business environment has caused practitioners and researchers to review the concept of strategic alignment within the organizations. The need for such review is to reflect how the globalized changes have affected the organization performance. Consequently, the main objective of this paper is to present an overview of strategic alignment on critical success factors and performance measurement system with the concept of organization performance by linking the performance measurement models with strategic management theories.

A review of the relevant literature was conducted to support the link between critical success factors, performance measurement system models and underpinning theories of strategic management such as Resource Based View, Stakeholder Theory, and Six Sigma models. The conceptual study review found that Resource Based View is one of the main strategic management theories applicable to explain the organizational performance. Critical success factors within strategic alignment contribute to organization performance while performance measurement systems evaluate the extent of the contribution towards the organizational performance. Hence, performance measurement models such as performance pyramid, performance prism and balance scorecard were discussed in this study.

Examining organizational performance from this school of thought allows the organizations to measure the significance of its internal resources and capabilities. The critical success factors of strategic alignment were operationalized in terms of top management leadership, human resources management, organization structure, organization culture and communication channel towards attaining an optimal performance and hence to provide further support for a philosophical approach that would serve as the springboard for appropriate management system suitable for a dynamic and complex business environment.

1. INTRODUCTION

With the globalization of business environment, firms ranging from multinational to small-medium enterprise are forced to review their critical success factors and performance measurement system to adapt with the current market industry. Baviskar (2015) explained that critical success factors have positive impact towards organizational performance while Halachmi (2005) highlighted the purpose of performance measurement system is improvement by controlling the performance outcome and understanding the factors measured. This means the firms are capable of achieving the optimal performance with strategic alignment of critical success factors and performance measurement system.

It is important to align the critical success factors with the appropriate performance measurement system. Joiner et al. (2009) explained that critical success factors contribute directly to the organization performance while Oltra and Flor (2010) observed that an aligned performance measurement system is capable of directing firms to the intended business performance. This means both the critical success factors and performance measurement system are crucial aspects for the firms. However, with the variety of critical success factors and measurement metrics, market uncertainty will arise and hinder the organization performance. With that reason, the study of strategic alignment between critical success factors and performance measurement system is essential to understand how organization performance can be enhanced with accurate evaluation.

To reduce the strategic alignment uncertainty, this paper will address the concept of critical success factors and performance measurement system by reviewing and consolidating both strategic management theories and performance measurement models which serve as a platform to further understand business performance behavior within the dynamic and complex business environment.

2. LITERATURE REVIEW

2.1 Organization Performance

Omalaja and Eruola (2011) recommended that the firms to understand their business position by evaluating the overall organizational performance and analyzing the business environment to utilize the critical success factors for optimal performance. To achieve this, firms need to implement the suitable measurement metrics on the critical success factors to ensure that the firms are not deviating from the intended performance.

Teeratansirikool et al. (2013) highlighted that performance measurement system contributes to organization performance in the form of guidance by acting as monitoring and evaluation tools. Due to the nature of the dynamic business environment, the firms need to ensure that the critical success factors are monitored carefully while being guided to the intended performance. This illustrates that an aligned performance measurement system allows the firms to monitor their critical success factors in preparation for potential threats and opportunities to gain the needed competitive advantage when striving for the intended performance.

Strategic alignment is crucial to organization performance as Mikalef et al. (2015) emphasized that there is no single optimal performance measurement system to conduct performance evaluation due to the various market aspects. This implies that the firms need to consider all internal and external critical success factors and implement these factors with the appropriate measurement metrics. This, in turn, provides an understanding of the extent of critical success factors contribution towards organization performance which can be further improved with enhancement.

2.2 Performance Measurement System

Pongatichat and Johnston (2008) defined the performance measurement system as guidance tools for firms to achieve the intended organization performance. Tucker and Pitt (2009) highlighted the process of performance measurement system involves the reviewing of the organization performance. Kulatunga et al. (2011) observed that the performance measurement system is capable of identifying the firms' strengths and weaknesses. This implies that the firm's performance can be further improved through evaluation.

Bourne et al. (2005) explained the analyzing capability of performance measurement system is due to the implementation of proper measurement metrics. However, there are criticisms against the performance measurement system. Srivastava and Sushil (2013) identified such criticism in the form of limited information due to the over-dependent on financial measurement as the main measurement metrics. Rompho and Boon-itt (2012) reasoned that relying on financial performance is not plausible due to being easily manipulated and difficulty to pinpoint the accuracy of the measured factors within the given time period. In other words, the application of both financial and non-financial metrics is important to justify the link between the critical success factors and performance measurement system towards business performance.

However, with limited information to assign the appropriate measurement metrics on the critical success factors, the full potential of performance measurement system is not realized. Shavarini et al.(2013) emphasized the importance of implementing both financial and non-financial metrics when utilizing the performance measurement system. McAdam and Bailie (2002) supported such claims by stating that a boarder measurement metrics are required to justify the behavior of business performance. In addition, Bititci et al. (2005) highlighted that successful performance measurement system consist the characteristics of being balanced, provides value, being specific to business units and consideration for relevant stakeholders' contribution and competencies. With these characteristics and aspects, the ideal performance measurement system can be constructed.

Merchant (2006) highlighted that an ideal performance measurement system is capable of avoiding deviation of intended business performance, provides timely and accurate evaluation and controls business performance. Silvi et al. (2015) added that performance measurement system is considered strategic when it implements financial and non-financial metrics, capable of analyzing both internal and external market perspective and clarifies the relationship between the metrics and critical success factors measured. Therefore, to achieve an optimal business performance, the firms should implement the suitable performance measurement system.

2.3 Performance Measurement Model

To assign the appropriate measurement metrics to the critical success factors, the performance measurement model needs to be reviewed. This paper will discuss the balance scorecard, performance pyramid and performance prism to understand how business performance are measured. Watts and McNair-Connolly (2012) have identified these performance measurement models in Figure 1.0:

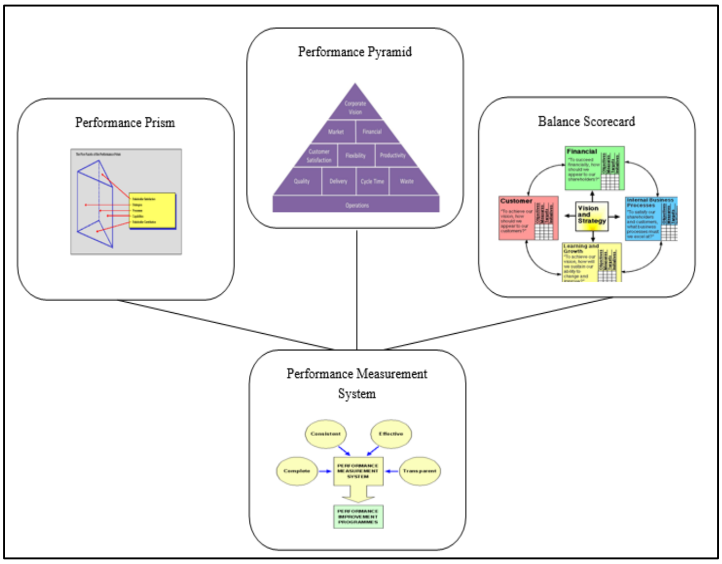

Figure-1.0: Performance Measurement Models (Watts and McNair-Connolly, 2012)

2.3.1 *Balance Scorecard*

Balance scorecard provides different perspectives of the organization performance in terms of finance, customer, internal processes and learning growth performance aspects. Anderson and McAdam (2004) observed that balance scorecard is capable of providing evaluation and clarification of organization performance. Taticchi and Balachandran (2008) added that balance scorecard supports strategic alignment of critical success factors and performance measurement system by providing a holistic view of organization performance in the form of finance, customer, internal business process and learning growth perspective. Although the balance scorecard attempts to justify the strategic alignment between critical success factors and the performance measurement, Watts and McNair-Connolly (2012) identified the limitation of theory is that such relationship is not clarified to pinpoint the measured factor's cause and effect. However, such limitation can be addressed by linking the measured factors with the firm's hierarchy system and relevant stakeholder's perspective and contribution.

2.3.2 *Performance Pyramid*

Performance pyramid implements its measurement metrics based on the firm's hierarchy system. Anderson and McAdam (2004) identified quality, satisfaction and delivery as some of the performance measured with a monitoring system which, in turn, provides feedback for the firms to clarify the extent of its performance and behavior. Taticchi and Balachandran (2008) highlighted that performance pyramid is divided based on the hierarchy system ranging from top level corporate to lower business units. This represents how the intended performances are translated downwards while the factors measurements are communicated upward. This is to ensure the performance of critical success factors are assigned with suitable measurement. Although the performance pyramid attempts to link business performance with the firm's hierarchy system, Watts and McNair-Connolly (2012) highlighted the lack of key measurement metrics assigned with the critical success factors for continuous improvement. This can be addressed by utilizing both financial and non-financial measurement metrics to compensate the limited key measurement metrics. In addition, the relevant stakeholders can be identified by the firms to develop specific measurement metrics for evaluation.

2.3.3 *Performance Prism*

Performance prism implements the five interrelated perspectives of stakeholders to enable an in-depth analysis of the organization performance. Anderson and McAdam (2004) observed that performance prism provides a broader view by considering stakeholders' influence and highlighting both internal and external measures for organization performance. Taticchi and Balachandran (2008) explained that performance prism analyze stakeholders' perspective in terms of satisfaction, contribution, strategies, processes and capabilities by incorporating internal and external measurement. Although performance prism focuses primarily on the five interrelated perspective of stakeholders, Watts and McNair-Connolly (2012) noted the lack of clarity on how the measurement metrics should be assigned. Such obstacle can be addressed by utilizing both financial and non-financial measurement metrics while incorporating the firm's hierarchy system.

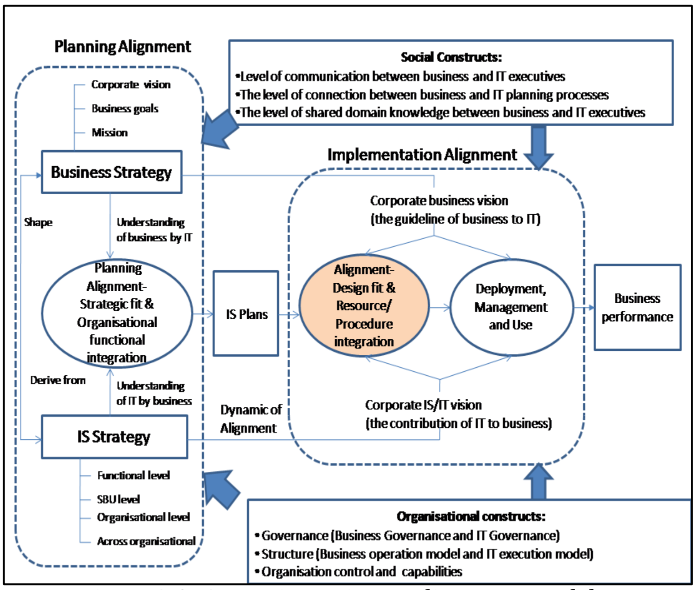

Figure 2.0: Strategic Business Alignment Model

2.4 Business Strategic Alignment

With various critical success factors to consider, this can lead to market uncertainty. Kumar et al. (2006) explained that market uncertainties act as obstacles when achieving strategic alignment. Hanson et al. (2011) added that the complexity of strategic alignment can leads to poor clarification on how the critical success factors should be measured. This illustrates the importance of investigating the relationship between critical success factors and performance measurement system.

Chou et al. (2013) presented a strategic business alignment model which suggests strategic alignment is divided into planning and implementation process shown in Figure 2.0.

From the strategic business alignment model, it illustrates how social (communication and knowledge) and organizational constructs (organizational structure and human resource capabilities) can influence the planning and implementation of alignment processes. Although Chou et al. (2013) highlighted how the model depicted that information system is necessary to strategic alignment by functioning as cross-domain knowledge hub, it is not sufficient to provide an effective strategic alignment as this requires a broader view of organization performance from other critical success factors.

McAdam and Bailie (2002) emphasized that the characteristic of broader and holistic view within the strategic alignment is essential for optimized organization performance. Hanson et al. (2011) stated that one of the requirements for strategic alignment is implementing specific measurement metrics to accurately monitor and evaluate the critical success factors. Once strategic alignment is achieved, Katsoulakos and Katsoulacos (2007) stated that firms can gain the needed sustainable competitive advantage which can enhance the development of critical success factors in terms of value, responsiveness and capabilities.

In addition, Srimai et al. (2011) stated that strategic alignment can be improved by organizational learning from monitoring and evaluation process. As a result, Srimaj et al. (2011) observed how successful firms are capable of adapting the dynamic market environment through the strategic alignment of critical success factors which are further enhanced by performance measurement system. This means the strategic alignment of critical success factors and performance measurement system are crucial to organization performance.

2.5 Critical Success Factors of Strategic Business Alignment

Layman (2005) explained that the critical success factors are responsible for the firms to achieve the intended organization performance. Baviskar (2015) highlighted the importance of the critical success factors is due to their internal and external market knowledge which enhances business performance. In other words, critical success factors can determine the success of organization performance and indirectly contributes to the formulation of measurement metrics.

Since critical success factors are capable of determining the business performance, Wong (2005) and Lande (2016) identified these factors as top management leadership, human resource management, organizational structure, organizational culture and communication channel. Ram and Corkindale (2014) explained that a deeper analysis of the critical success factors is essential to understand its contribution towards the organization performance. This, in turn, can enhance the capability of critical success factors as well in the long run as shown in Figure 3.0:

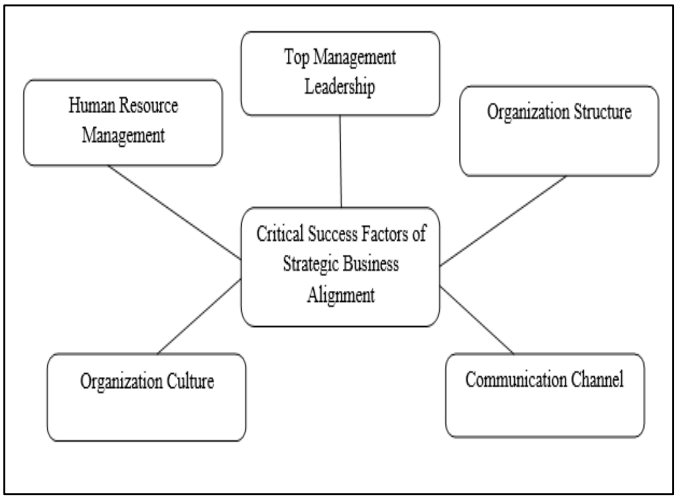

Figure-3.0: Critical Success Factors of Strategic Business Alignment

2.5.1 Top Management Leadership

Achanga et al. (2006) stated that the top managements' leadership contributes to organization performance based on their knowledge and attitude. As some of the organization problems started from the top management's decisions (Marx, 2016), they are recommended to develop and sharpen their leadership skills, in terms of clarifying the firm's objectives to achieve the intended performances (Marx, 2015). In addition, Wong (2005) highlighted the responsibilities of top management leadership are maintaining the employees' morale and creating a positive business culture for knowledge sharing and creation. This illustrates how successful leaders are capable of directing the firms to the intended objectives and creating a positive business environment to nurture the employees.

Cocks (2010) observed that successful leaders are capable of clarifying the firm's intention to their employees, utilize the market resources and capabilities optimally and selecting the right people to ensure business improvement. Bourne (2011) added that successful leaders displayed characteristics of flexibility, adaptability, credibility, tolerance and motivation to derive strategic decisions and solving firm's problems. Young and Jordan (2008) reasoned for such leadership behavior and action is due to their commitment towards the firm's objective by monitoring and evaluating business performance. This is because leadership requires a positive relationship between the leaders and followers based on trust and confidence to control risks and adapt with market environment changes.

2.5.2 Human Resource Management

Gautam (2015) emphasized the importance of human resource management by being proficient in solving organizational problems and achieving sustainable competitive advantage (Fabi et al., 2009). Tayles et al. (2007) identified experiences, creativity and motivation as some of the capabilities of human resource. Liao (2005) observed that human resource management can achieve sustainable competitive advantage when strategic alignment is achieved. This is due to the attitude and behavior of human resource which acts as mediator for business performance that can be monitored and controlled by implementing the suitable measurement metrics.

Gates and Langevin (2010) explained that human resource capabilities consist of competencies, knowledge and experiences. This, in turn, recommends utilizing non-financial measures for accurate evaluation of human resource contribution to business performance. Since human resource incorporates competencies, knowledge and experiences, Mohammad et al. (2014) suggested training and empowerment to improve pro-efficiency in handling daily tasks while Jurado et al. (2013) supported that such training and empowerment provide the right mindset and commitment. This means human resource capability can be improved with proper training regimen and should utilize the suitable measurement metrics for accurate evaluation towards business performance.

Since human resource is a vital part of business performance, Wong (2005) recommended that recruiting employees with the suitable skills and desired knowledge is essential to narrow the business knowledge gap, develop and enhance firm's capabilities while retaining them with the promise of growth opportunity to avoid losing vital knowledge and skill.

2.5.3 Organizational Structure

The organization structure is another important aspect for strategic alignment (Faron, 2012) which considers the firm's operational structure, concentration of authority, control of workflow and size of support component (Siemerink, 2014). This means organizational structure coordinates the roles and responsibilities of the human resource within the firm. Shavarini et al. (2013) added that organizational structure performances are represented by a top-down reflection and bottom up activity for firms to translate the intended objective.

Wong (2005) explained that the responsibility delegated to the human resource as the potential to create opportunity to improve business performance. Since strategy alignment in organizational structure is developed through administrative system to adapt with business environment (Schaap, 2006), Kiplagat (2014) noted that the firm's organizational structure can further balance and develop other critical success factors with the appropriate performance measurement system to adapt with the dynamic business environment.

2.5.4 Organizational Culture

Organization culture is another critical success factors explained by Liao (2005) as a set of commitments which reflect the firm's belief. Bourne (2011) observed that since organizational culture depicts human resource performance and behavior, it means there is no universal business culture due to various demographics and mixture of generations.

Wong (2005) highlighted one of the challenges for successful business performance is to develop a positive organizational culture in terms of proactive and knowledge sharing process. Alas and Sun (2007) identified such challenge as the result of misunderstanding of the organizational culture. This is due to organizational culture acting as an adaptive mechanism for firm to survive the dynamic business environment. White et al. (2014) noted that organizational culture is a set of characteristics and values created through personalized experience to form an identity. In other words, the understanding of the organization culture can contributes to strategic alignment in terms of business performance and performance evaluation process. Therefore, it is important to consider organizational culture as part of the study to analyze strategic alignment in relation to business performance.

2.5.5 Communication Channel

Communication channel is another critical success factors for strategic alignment. Cocks (2010) reasoned that optimal business performance requires clear insights from the firm. This means strategic alignment requires proper communication between the top management leaders and human resources to ensure a common understanding of the intended performance is reached. Lai and Gelb (2015) identified one of the communication issues derived from within the organizational structure due to the top management leaders and human resource having their own objectives.

A communication channel is effective when accurate and clear information is understood by both parties (Beer and Eisenstat, 2000).This can be achieved by both top management leaders and human resource through successful development of innovative solutions and exploitation of ideas to adapt the dynamic market environment. Taticchi and Balachandran (2008) highlighted that communication channel is an important aspect for strategic alignment which provides guidelines to achieve the intended objectives. Thus an effective communication channel is needed by both the top management leaders and employees to achieve the intended objectives.

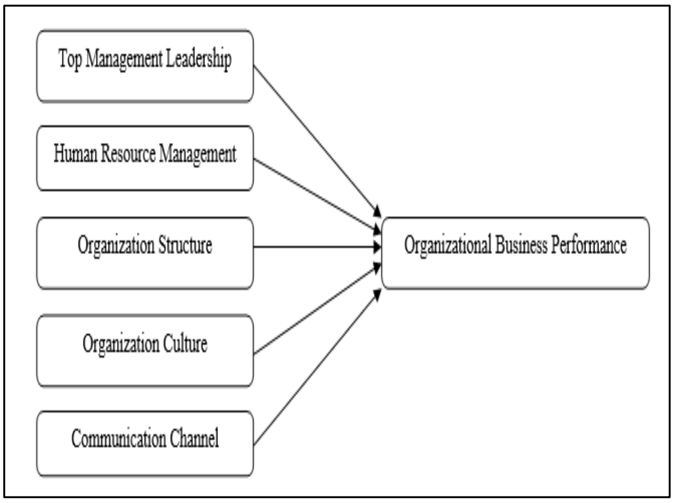

Figure-4.0: Conceptual Framework

3. CONCEPTUAL FRAMEWORK

Based on the literature review, the strategic alignment of critical success factors can contribute to organizational performance while the performance measurement system provides an accurate evaluation on the extent of the contribution by the critical success factors. Based on this concept, this paper can construct a conceptual frame to analyze strategic alignment of critical success factors and performance measurement system in relation to organization performance. This is illustrated in Figure 4.0:

4. STRATEGIC MANAGEMENT THEORIES

In relation to the study of strategic alignment, Omalaja and Eruola (2011) have identified and explained some of the common strategic management theories applicable in the modern organization environment as follows:

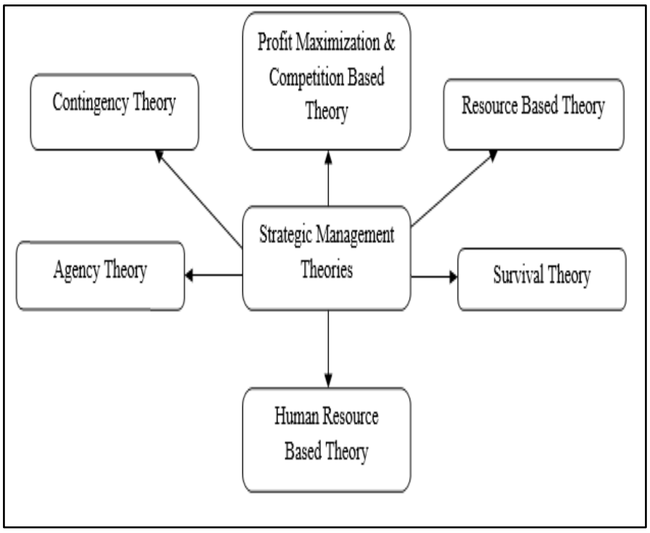

Figure-5.0: Strategic Management Theories (Omalaja and Eruola, 2011)

Strategic Management Theories	Explanation
Profit Maximizing and Competition Based Theory	Derived from the idea of utilizing critical success factors for optimizing long-term profit and improving sustainable competitive advantage over rival organization.
Resource Based Theory	Depicts the potential of both market resources and capabilities for generating competitive advantage for optimal performance
Survival Based Theory	Illustrate the need for organizations to adapt with the competitive environment for high survival rate
Human Resource Based Theory	Highlight human resource as an important aspect for enhancing strategy development within the organization
Agency Theory	Investigate the relationship between the agents and shareholders as the vital aspect for organization success
Contingency Theory	Emphasize that there is no single approach for managing an organizations and thus requires to develop strategy based on the current situation

Table-1: Strategic Management Theories Explanation (Omalaja and Eruola, 2011)

For the purpose of this conceptual paper, the resource based view will be the underlying theory applied to study the strategic business alignment and organization performance.

4.1 Underpinning Strategic Management Theory

Based on the conceptual framework, the firms can achieve the intended performance by strategically aligning the critical success factors with the performance measurement system. With that in mind, the Resource Based View will be discussed as the underpinning strategic management theory in terms of its contribution as well as limitation which can be addressed by Six Sigma model and Stakeholder Theor

4.1.1 Resource Based View

Resource based view illustrate the business performance behavior by utilizing the market resources and capabilities. O'Regan and Ghobadian (2004) observed that successful firms are capable of balancing their internal performance and external business environment. Such balance is crucial as Parnell (2011) highlighted how the increasing business environment changes require the firm to be flexible and adaptive to avoid being imitated by other rival firms.

Since resource based view depicts that optimal business performance is achieved by utilizing market resources and capabilities, Alas and Sun (2007) identified top management leadership skills and human resource capability as important aspects for performance improvement. Market resources and capabilities which are complex ensure difficulty for duplication by rival firms that utilize the same resources. This illustrates that market resources and capabilities are similar to the critical success factors of the firms.

Since resource based view emphasize the importance of utilizing the market resources and capabilities in the form of critical success factors, Clulow et al. (2007) identified value, rareness, inimitability, non-substitutability and competitive superiority as key characteristics of the firm market resources and capabilities. However, Clulow et al. (2007) highlighted the question of how such market resources and capabilities should be rated in terms of importance to the firms. This can be addressed by linking the firm's selected resources and capabilities through identifying the relevant stakeholders and their contribution towards the business performance.

4.1.2 Six Sigma

Zhang et al. (2016) highlighted the main aspect of the six sigma is eliminating business inefficiency by comparing the actual performance with an ideal one. Jesus et al (2016) explained that the comparison is accomplished with analytic statistical tools. To implement the Six Sigma, Habidin and Yusof (2013); and Adebanjo et al. (2016) recommended the firms to consider the top management leadership, market resources in the form of human resources, organizational structure and organizational culture as the main critical success factors to achieve optimal performance.

Kumar et al. (2009) highlighted that six sigma is capable of clarifying business performance, selecting the suitable human resources by recognizing their skills and providing effective communication channel in the form of company meetings. Tjahjono et al. (2010) added that six sigma supports strategic alignment by implementing suitable measurement metrics with critical success factors to evaluate business performance for continuous improvement. Deshmukh and Chavan (2012) reasoned that such improvements are possible as a result of the learning process from measurement and detection.

Although Kumar et al. (2008) identified six sigma utilize mainly statistics analysis, applicable only to manufacturing industry and appropriate for large organizations as some of the criticism, Kumar et al. (2008) assured that it is still a proactive approach relevant to other industries with similar market problems regardless of the firm's size. In addition, this can be addressed by identifying the relevant stakeholders and clarifying how critical success factors contribute to business performance without relying on statistical analysis.

4.1.3 Stakeholder Theory

Polonsky (1995) explained that stakeholder theory involves the firms to consider all relevant groups and individuals that show interest and concern to the business performance. This stakeholder theory depicts that business performance can be improved by balancing the stakeholders' needs. Polonsky and Scott (2005) reasoned that the understanding of the stakeholders' interest act as a corporate guidance which allows business improvement. This means the firms and the stakeholders are interdependent and emphasize the importance of considering the stakeholders' interest.

Although stakeholder theory depicts a link between business performance and stakeholder's interest, Gaur et al. (2015) noted that it is challenging to identify the relevant stakeholders. Mainardes et al. (2011) identified the term "stakeholder" as being vague and the existence of interest conflicts among the relevant stakeholders as some of the limitation of stakeholder theory. Pesqueux and Damak-Ayadi (2005) supported such limitation by stating that stakeholders can vary from shareholders, internal stakeholders, operational partners and social community. It

is important to ensure that the firm's interest is the main focus as Kenny (2013) explained that stakeholder theory can lead to prioritizing stakeholders' interest which leads to the firm becoming stakeholder-centric. This can be avoided by maintaining a consistent mindset of managing through the stakeholders for the firm rather than managing for the stakeholders.
However, once the identification of the relevant stakeholder is achieved, Elias (2016) stated that stakeholder theory can contribute to the understanding of managing the stakeholders and develop the critical success factors further for the firm. The identification of the relevant stakeholders can be achieved by narrowing the stakeholders involved and considering their capabilities and contribution towards the business performance.

5. DISCUSSION AND RECOMMENDATION

It is possible for firms to achieve strategic alignment for optimal organization performance with the concept of the above strategic management theories and performance management system model. By consolidating the strategic management theories, the limitation of Resource Based View can be addressed by the contribution of Six Sigma and Stakeholder Theory.

Each underpinning strategic management theories is capable of contributing to the organization performance by utilizing the critical success factors to achieve strategic alignment. However, some of the limitations were identified within the aforementioned underpinning strategic management theories which can be rectified by applying other relevant underpinning strategic management theories. Once the problems are addressed, the critical success factors can be fully utilized to achieve strategic alignment for the intended organization performance.

Similar to the strategic management theories, the limitations of each performance measurement model were identified and can be addressed by other models. The performance measurement system is capable of monitoring and guiding the critical success factors to achieve the intended performance. Once the limitations are addressed, the critical success factors can be assigned with the suitable measurement metrics which leads to clarification of business performance behavior to strengthen strategic alignment further to strive for the intended business performance.

The importance of achieving strategic alignment is crucial by utilizing the critical success factors and assigning each factor with the suitable measurement metrics is necessarily to monitor and evaluate business performance behavior. This is to ensure an accurate depiction of the business performance for firm to achieve the intended objectives.

However, this paper is not without some limitation as this paper utilizes Resource Based View as the main strategic management theory supported by the Six Sigma and Stakeholder Theory for the studies. There are other strategic management theories which can be considered for strategic alignment studies. In addition, the critical success factors highlighted in this paper are limited as there are other potential factors which can contribute to business performance via strategic alignment. With other critical success factors for consideration, the measurement metrics can be explored further by investigating the performance measurement system models. Further studies on those aspects are recommended and encouraged to reduce the knowledge gap of strategic alignment and organization performance by understanding the contribution of critical success factors and improving accuracy aspects of evaluation process.

6. CONCLUSION

With the globalization of business environment, it is essential to review the concept of strategic alignment on critical success factors and performance measurement system. As critical success factors directly impact on organization performance, it is important to understand the extent of their contribution within a dynamic business environment. This can be achieved by utilizing the performance measurement system for the evaluation on critical success factors. This can be done by assigning the appropriate measurement metrics. When critical success factors and performance measurement system are strategically aligned, it is possible to enhance organization performance, understand organizational behavior and improve measurement metrics for accurate evaluation. With such intention, this illustrate that the study of strategic business alignment and organization performance is essential to address the knowledge gap which hinder organization from performing optimally.

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Leadership: Creating Opportunities and Combating Challenges through Business Leaders and One's Own Initiatives

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Abstract— Business practices have now shifted from partnership to collaboration. In combating the global challenges, considering the number of undergraduates and young population in Brunei, there are opportunities to groom them so they will jointly be in translating visions into reality. This also means that instilling leadership from young will prepare both undergraduates and young people to see a clear road map and make progress. The worrying part for most people today is the employment challenges. However, looking on the bright side, there are array of opportunities ahead in broadening knowledge as well as expanding skills. In clear words, people are to see challenges as solutions to something. Alongside, while the global revolves with economic and social changes obstacles, business leaders or CEOs should take initiative to explore potentials who could become enablers in realizing the organizational goals in the forms of collaboration and partnership with universities. Importantly, one's own initiatives places an important role in accomplishing collective or own goals. This conceptual paper will reveal the importance of leadership, how business leaders are correlated with effectiveness, innovation and creativity as well how one's own initiative can contribute positive impacts. Additionally, this paper will also demonstrate how a teaching assistant or also known as TA indirectly integrated "leadership" in young students' learning.

Keywords: leadership, opportunities, collaborative, initiatives and skills.

I. Research background

In the context of this paper, business leaders are referring to SME leaders and SME owners. Albeit its size, SMEs of today have provided the masses with ample employment opportunities. On the other side, there is a tendency for SME leaders to spend a vast amount of time on the series of tasks such as administrative tasks, decision making, planning, targeting customers and offering products. SMEs may lack of resources in product development which can potentially hinder innovation (Martinsuo and Järvenpää, 1998). However, challenges faced are not to be construed in its genesis and for its face value. Even so, leadership as part of HRM practices poses potentials for the development of SMEs.

The substantial growth of Small-Medium Enterprises (SMEs) contribute to the economy of Brunei. In general, several of SMEs in Brunei are consisting of information technology (IT), retail and food and beverages. Looking into the business practices in Brunei, majority are consisting SMEs, home-based businesses and online businesses. In efforts to run and promote their products and services, social media continues to remain the top platform. In return, greater benefits are gained and the mobility to reach audience is fast.

Proportionally, SMEs can potentially fill niche markets in Brunei and become business leaders nationally and globally. To expand the horizons, SME leaders will need to pose skills and knowledge to build leadership capacity. Additionally, resolving economic, community as well as societal concerns require initiatives from SMEs and individuals to participate. While youth, may instil social values by being exposed to a diverse leadership and team building activities. It will be an ideal platform for youth to contribute solutions and to further understand the causes and reasons.

In collecting data, a direct interview with the founder of KadaiRuncit.com, Aizuddin Fakhri was conducted. While five participants were selected randomly in collecting their opinions on the definition of leadership. This paper aimed not to generalize data, rather it was to provide different aspects of thoughts. Several responses are presented in quotations. This attempt was to maintain the clarity and richness of information.

Providing online shopping experience to the community is part of innovation in retail which has been initiated by Aizuddin Fakhri. Grocery shopping is made at its convenient whereby payment can be made online and cash on the delivery. KadaiRuncit.com was launched on April 2017 and more services will be introduced soon. During the interview, he described leadership as not restricting the individuals' skills and creativity. He expressed agreement that leadership is an influence. Inspired by his father for teaching him skills motivated him to move forward. Running a business incorporates aspects of managing and logistics which are part of the learning process according to the founder. He added that knowledge sharing can create a positive culture among team. Part of improving his business is getting feedback from his employees. He regarded that guiding and allowing youth to learn skills can unlock their potentials and increase employability. Of these initiatives will foster effectiveness in performing tasks, creativity and innovation as the founder underscored that with more people, there can be more visions and creating more jobs is one of his visions.

II. Literature review

A. Leadership

Today's rapidly changing business environment requires leaders to understand the complexities (Nahavandi, 2001). There are many definitions of leadership (Volkmann, 2012). Leadership is an activity and the ability to influence a group towards goal achievement (Robbins, 2003; Stogdill; 2003, French & Raven; 1959). While Handy (1992) highlights that a leader shares the vision to the group. In return, the actions and behaviour of a leader have bigger effects on an organization's performance (Wang & Poutziouris, 2010). Therefore, it can be suggested that the success or failure is a result from leader's influence. It appears in the management literature, that entrepreneurship and leadership are associated (Mohd Fazli et al., 2012). In addition, Mohd Fazli et al. (2012) describe entrepreneurs as having assistance while managers have colleagues. Gupta et al. (2004) and Tarabishy et al. (2005) had examined both concepts. It has been found that there are contrasts between the two roles in the level of degree than on kind (Davidson & Griffin, 2000).

B. Business challenges

The changes in business practices, information technology businesses and product alteration affect today's organizations whereby there will be involvement of life-long learning as organizations redesign to be flexible (Burke & Cooper, 2003). Thus, people are to identify their abilities, training for deficient skills, know how to network, know how to market themselves and endure ambiguity as added by Burke and Cooper (2003). In a book, Leadership and Management in the 21st Century: Business Challenges of the Future by Cary Cooper, he cited "the twenty-first century challenge will be to manage risk effectively" pointed out by Sir Michael Bichard (2005, p.305). Cooper (2005) added that that the future of organizational relies on relationships based upon trust, loyalty, connectivity and communications. Therefore, SMEs leaders' self-efficacy and understanding on such changes will provide leaders to foresee what is needed to be executed to grow the SMEs as Bandura (1997) argues that believing in the ability to lead is require to achieve desired goals.

Previous leadership	New leadership
Non-charismatic	Charismatic
Transactional	Transformational
Management	Leaders
Non-visionary	Visionary
Non-magical	Magical

The contracts between previous and new leadership (Beyer, 1991).

Beyer (1991) points that there are contrasts between previous and new leadership. The roles of managers and leaders organisations have now extended to supporting employees to seize both long-run and short-term opportunities while confronting challenges. In this turbulent business environment, leaders should pose competencies that can influence both individuals and workers as Bennis (1989) reveals that real leadership qualities are essential in this twenty-first century's volatile economy. This will facilitate individuals to apply resources, knowledge, opportunities, skills and abilities in the creation of value-added. A company comprises of human intellectual. Taking account into human resources, it is beneficial as people whom are led by a leader comprises of human capital. Divanna and Rogers (2005) specify human capital as employees' knowledge, capabilities, skills and talents. Furthermore, employees contribute energy, time, effort, have emotions and feelings. Therefore, positive emotions will result in good outcomes especially in job performance.

	Profession/background
Participant 1	Aizuddin Fakhri, founder of KadaiRuncit.com (Brunei)
Participant 2	Veterinarian (Brunei) – *Presently working*
Participant 3	Undergraduate majoring in Physiotherapy (Brunei) – *Will commence in July*
Participant 4	Diploma in Business Finance (Brunei) – *Presently studying*
Participant 5	Final year undergraduate majoring in History (Singapore) – *Presently studying and has been to Brunei*
Participant 6	Majored in Business and Economics (Japan) – *Presently working in Japan and has been to Brunei*

Table 1 present participants' professions and backgrounds information

III. Discussion

Before proceeding to further discussion, Author would like to provide responses from participants when they were asked; in your opinion, what is leadership? Regardless of the fact that generalization cannot be made as participants come from different professions and backgrounds, however, it can be suggested that respondents expressed similar responses and recognized that leadership is the capability to guide people to achieve desirable results.

"For me, it is not restricting the creativity and capability of the individuals who are working with you. Leadership is a way to inspire and let them [people] be in their zone, let them [people] do what they like because sometimes they [people] know better. We [leader] may only have one limited vision but with them [people] we can create more visions and then we won't need to dictate. Leadership is more of inspiring and [is] not being like a boss boss. If you start being bossy, sometimes people don't really do the work, they become more defensive. Yes, leadership is an influence." – Participant 1 (Founder of KadaiRuncit.com)

"Leadership is the capability to lead a team effectively. There is a difference between being just a boss than a leader. A boss only knows to direct [expecting results]. A leader will work together with the team, considering all aspects – potentials as well as shortcomings in order to achieve best results." – Participant 2 (Brunei)

"Leadership is about how you want to achieve one thing and it requires the leader to lead. Leadership is also about how you can help people in the community. When you have resources and you see there is an opportunity, you do it and make it happen." – Participant 3 (Brunei)

"To lead his/her team to work together in a group. ... [leader] to guide the team and must [ensure] that his/her team is communicating with each other." – Participant 4 (Brunei)

"Leadership is providing people with necessary mentorship and guidance with regard to the carrying out of tasks as well as the efficient usage of resources." – Participant 5 (Singapore)

A. Motivation

Profoundly, individuals are linked to motivation in performing tasks. For instance, one leader would be discouraged by incompetent team members while one would be determined to resolve the situation as he is mindful that it is part of a learning process.

Figure 1. Maslow's hierarchy of needs.

People are motivated by basic needs, psychological needs and self-fulfilment needs (Maslow, 1943). A person may reach self-actualization when he has accomplished his potentials. However, Hoffman (1988) points out that self-actualization is rather a continual process. For example, an IT expert who is also a leader of an IT SME may be capable to build a company on his own.

However, would it be sufficient to work solely when he has knowledge and initiative to expand the business? Instead, he could hire skilful individuals and who are productive for the benefits of the operation, management of the company and for interns to groom their potentials. In the context of employees, when leaders offer opportunities, this will indirectly create a collaborative environment for employees to achieve higher level.

B. Skills and talents

Time and energy can be considered as irreplaceable resources but it does entail that individuals are inhibited to accomplish goals. Moreover, employees are consisting of human capital, intellectual and intelligence. The success of a task is a result from a leader bringing people to the task in which employees can provide feedback and discussion which in turn assist leaders to know what is going on in the organization. Alongside, skill development places an important role as it will give employees a sense of purpose.

According to Leitch Review of Skills (2006), skills are "the capabilities and expertise in a particular occupation or activity". While for organizations, securing best talents does not necessarily guarantee success when talents are not tailored with tasks that they perform. Importantly, a leader is required to address the problems related to employees and identify solutions.

Similarly for SMEs, adequate supports are needed in the operation. For instance, hiring experienced employees would produce effectiveness than promoting current workers with insufficient experiences. Therefore, the possibilities to sustain will require SME leaders to be strategic in decision making, selecting, recruiting, coaching and providing training to employees.

According to the founder of KadaiRuncit.com *"Specific talents are limited but I managed to find two talented young employees through an internal test. They managed to pass and they have good talents. I was surprised. They're very good. So I pass my knowledge to them in developing websites. There are a lot of talents in Brunei, hidden talents. There are some niche talents that are not there. Specific talents... for example, I'm a developer for a certain application, there may be for Android but not for Apple. They are two different platforms. There are some who [talents} are difficult to find. There are quite a lot of talents in Brunei but [are] not exposed."*

The founder suggested that conducting a test before a job interview can help evaluate the capability of candidates. Generally, candidates will be informed early. Moreover, the test is in the form of open book as developing and designing websites are practical. This way, it will not restrict candidates' creativity. Also, the founder stated that staff are needed when a leader cannot handle workload. This can be suggested that SMEs help to identify niche talents and it would be a surplus for SMEs to attract those talents.

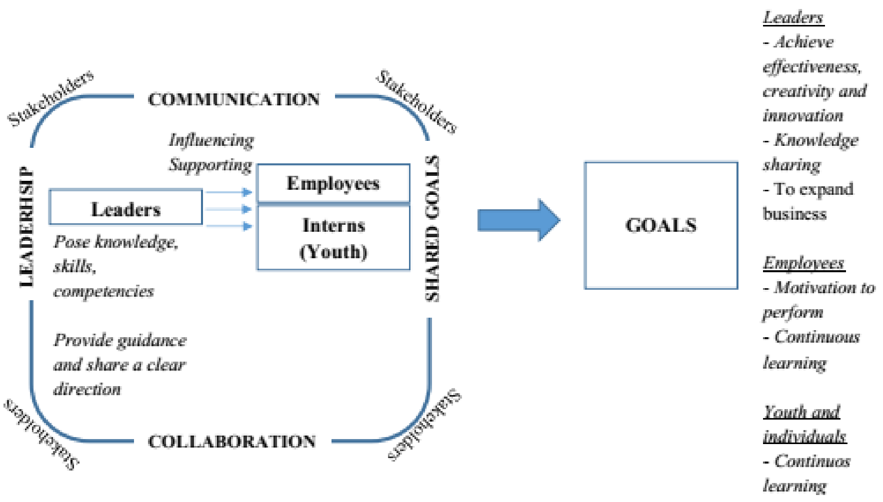

Figure 2. How leadership can result in effectiveness, creativity and innovation (Author).

In figure 2 above, skills and competencies posed by SMEs leaders can influence employees. Vice versa, potential employees bring benefits to the business. For instance, an SME selling shoes will need staff who possess knowledge on the market, good communication with people and are capable to increase the awareness of the products. Therefore, the identification of proper training and guidance employees will simultaneously assist in delivering of tasks.

Profoundly, unemployment is one of the most worrying concerns for most people today. People may encounter mismatch in jobs, jobs that require certain minimum years of experience and entry job requirement is exceeding qualifications. However, providing individuals and youth opportunities to advocate their talents can be executed through participation in SMEs. For instance, before the commencement of the semester break, intern opportunities can be opened from getting involved in business start-ups and administration work. The objective of providing intern opportunities is to rise skills gaps which can reap the benefits in improving one's prospect and employability.

Aside from that, intern opportunities will initiate the ability to read the business environment in which the relevancy of skills such as the 21st century skills and life skills can be acquired. UNICEF (2012) defines life skills as "large group of psychosocial and interpersonal skills that can help people make informed decisions, communicate effectively and develop coping and selfmanagement skills that may help lead a healthy and productive life." To conclude discussion on skills and talents, the collective efforts and the commitment of leaders, employees and youth for long-term benefits and sustainability will enable each stakeholder to expect what to achieve and improve.

C. Knowledge sharing

In an interview with the founder of KadaiRuncit.com, Aizuddin Fakhri highlighted that knowledge is important. Active dissemination of information, knowledge and stories would generate more trust, greater exchange of information and foster knowledge sharing culture in the organization as Renzl (2008) highlights the importance of knowledge sharing in which it empowers an organization to attain competitive advantage. Additionally, Johnson and Johnson (1995) suggest that teamwork facilitates in advocating learning environment.

Figure 2. Fullan's framework of leadership (2001) consists of a leader's traits; energy, enthusiasm and hope. It can be seen that the involvement of members' commitment results in good outcomes.

"For example, one section of our company, this section had few sales before one leader came to this section. However, [when] the new leader which has enthusiasm and clever came to this section, sales sharply increased." – Participant 6 (Japan)

Likewise, enthusiasm provides avenue to both employees and organization. From above response, it can be suggested that there appears to be motivation and teamwork practices among the team. These transferable skills initiate an effective management of employees and give employees a sense of ownership.

"Continuous learning... this is what normally people will try to find when they work. They want to keep learning. Once they stop learning, they become demotivated. Unless, they are comfortable, then it's alright. If people want to learn, they should not focus on salary, they [should] just focus more on experience. That's the key part. Even if it [the salary] is just $200-$300 but if the experience is more valuable, it'll be something new, a new whole."- Participant 1 (Founder of KedaiRuncit.com)

The development of skills and capabilities are required for youth to perform tasks not only for when challenges arise but to further understand that leadership is more than just leading. The founder of KadaiRuncit.com mentioned that on occasion, students are aware of what they want to be. He emphasized that youth need guidance. Youth may lack of resources, lack of financial capability and lack of working experience. Thus, developing skill sets and delivering guidance can be performed through collaborations between SMES and tertiary education level in which they can work mutually in producing effective future leaders. Moreover, Hendry et al. (2000) assert that the collaboration between SMEs with universities can be beneficial in getting innovation supports. This also means that youth will continuously seek knowledge and acquire skills. This way, it holds a greater acceleration in pluralizing the avenue as well the creation of a knowledge based economy.

"Education is the chase for the betterments, in terms of standard of living. Knowledge driven economies place a high emphasize on education and skills but it's not without its implications. Brain drain and human capacity would be an area one needs to take into account as well." – Participant 5 (Singapore)

"We need to have knowledge to combat in global. But as well, we need the experience. I think we are not only learning on desk but [are] also directly from speaking and listening to clients as well as working abroad" – Participant 6 (Japan)

D. E-commerce

Albeit the race in global market especially for multinational organizations, it also indicates SMEs to be open to changes and take e-commerce as a creation of opportunities such as developing new or improving products, better communication with customers as well as expanding customers. These opportunities can be translated into success. In Singapore, Square Online for SMEs, a digital leadership and marketing programme initiated by Google aims to assist 1000 SME leaders with knowledge and skills to build digital marketing capabilities (Business Times Singapore, 2017). This can be suggested that the first person to undertake changes for better opportunities is the leader. Second, people who work with the leader. Acemoglu and Pischke (2001) argue that skilled workers generate incentives to create advanced intensive technologies skills.

SMEs and people are now at advantage with the technology savvy where they connect to global markets quickly. People start running businesses, addressing problems and finding solutions with the assistance of the internet and mobile devices. For example, people use price comparisons and reviews when making a purchase. Majority of individuals in Brunei promote products through social media such as Facebook and Instagram. Sellers' contact number, products' information and information on the delivery are accessible. At the speed of a click, customers are able to send a purchase request. Equally, social media offers chances to receive feedback from customers and respond in a way one business can gain market knowledge of their products. Accordingly, social media as one of the key drivers in increasing service and product awareness offers a window of opportunity to Bruneians to expand businesses through e-commerce. This way, e-commerce supports in delivering business outcomes, reducing operating cost, and filling in market niches.

The owner of KadaiRuncit.com stated that e-commerce is more cost saving in terms of rental. He added that the essence in managing e-commerce efficiently relies on acknowledging the procedures and workflow. The owner suggested also that e-commerce is still about to bloom in Brunei and he agreed that the improvement begins with the leader.

E. One's own initiatives

At the enterprise level, SME leaders navigate employees to work towards common goals in sustaining the enterprise. At the societal level, the collaboration between SMEs and youth appears to help broaden leadership capabilities. While at the individual level, tapping into opportunities for the process of the acquisition of skills is crucial. Based on this, one individual's effort can complement a process and an activity. Simultaneously, all levels have a role in the development of the nation, in the community and the economy of the country. Author intended to describe "one's own initiatives" as *"A collection of knowledge, skills, working experiences and inspirations that motivate a person to become resilient and perform tasks proactively."*

Author's participation in the community service as a teaching assistant for sixteen weeks had given author a wide range of experiential opportunities. Working closely with pupils, author had indirectly accommodated leadership in Year 5 learning. To further discuss, when author was given an opportunity to conduct a relief class, pupils worked in a group of four to five during a class activity.

Questions on progress and outcomes were first directed to the leader. This resulted in a positive impact whereby pupils became immersed in learning and showed greater interest to take turn to become a leader as they felt empowered to lead a team. Another part of author's initiative in enhancing pupils' teamwork skills was conducting a detective activity. Pupils imitated newspaper reporters, detectives and policemen to produce a brief report. The objective of this activity was not only to enhance their teamwork skills but the interactions among peers allowed them to think and perceive teamwork values. It also was a means to stretch their talents.

Therefore, the role of a teaching assistant is not restricted to play a role in developing leadership to pupils. Author saw it as an act of providing ownership to pupils to actively engage in learning and asking questions for them to be more resourceful. Additionally, another author's initiative while having a three month semester break was to write this paper as it was as an opportunity to share views through writing.

Lastly, author would like to conclude a message to youth from the owner of KadaiRuncit.com, Aizuddin Fahri, *"For them [youth] to do what they love to do and don't give up so easily. For me, once you find what you like to do, you'll feel the connection to it that you'll just keep working on it. Sometimes, I work in the middle of the night because for me, it's not I'm forced to do it, it's because I enjoy. The effort is there. If [it is] something you don't like to do, you have to force yourself to do it, it's not going to work. For instance, you're doing this interview, [it's] your initiative because you like doing it, if it's something you don't like, it's not going to work."*

Figure 3 demonstrates author's illustration on one's own initiative as a key attribute in attaining desirable goals.

IV. Conclusion

From discussion above, it can be drawn that given the role and traits of a leader, a leader has a teaching role in developing leadership capability to future leaders. Interestingly from this research, respondents recognised that leadership is the capability to guide people to achieve desirable outcomes. SME leaders, youth and individuals are to become resilient and responsive in today's business environment. One's own initiatives indicate that there is a wide range of opportunities for youth to discover. Leaders with skills, talent and knowledge have the ability to inform employees and individuals that there may often be on-going challenges but often, they may come with flexible solutions. Additionally, immediate success of any organization may not be achieved but rather to seize opportunities as a learning process for both SMEs leaders and individuals.

V. Acknowledgement

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Implemeting Talent Management Approach to Improve Non-Tax Revenue in Center for Innovation

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Abstract: The role of human resources management in determining the success of the process of organizational change is important because human resources management is an important subject that will carry out the process of change. To carry out the process of change can be done through innovation in achieving competitive advantage for personnel of the organization. Competent human resources are indispensable in a competitive environment. Individuals who have a good working competence would be easy to carry out the job responsibilities and able to adapt well to their environment. The relationship between human capital (talent) and competitive advantages are as follows: Talent is the right stone fundamental building comes to creating an organization that is able to innovate and change and uses it as a source of competitive advantages. This talented employee development should be done gradually in order to improve organizational performance, especially from the financial performance of Non-Tax Revenue. The methodology that used to enhance the strategy divided into three steps: formulating, implementation and evaluating strategy. Formulating strategy resulted from identification factual condition of Non-Tax Revenue in Center for Innovation; collect and analysis data production Non-Tax Revenue in Center for Innovation; collect data and analysis for Talent Management factors. The next step is making an identification matrix to utilization all potential from combined implementation strategy using SWOT analysis; try to get a solution from all weakness and threat. From its matrix will get a mapping of action that expected accurately. The final step, doing an evaluation to control each action and making programs more focused. This management strategic of talent management approach expected able to improve Non-Tax Revenue in Center for Innovation.

Keywords: Competitive Advantage, Non-Tax Revenue, SWOT Analysis, Talent Management

1. RESEARCH BACKGROUND

The participation of human resources in determining the success of organizational change process is very important because human resources is an important subject that will carry out the process of change. To implement the process of change can be done through innovations in achieving competitive advantage. Competent human resources are essential in a competitive environment. Individuals who have a good work competence would be easy to carry out their job responsibilities and able to adjust well to the environment.

Rayadi (2012:p.114) says that one of the big problems for the company is to find professional and skilled human resources in an instant time, both in technology, especially in managerial terms. If these human resource issues are not corrected, then this can negatively impact the company's productivity, efficiency, and competitiveness. Therefore, one of the company's goals and strategies is to develop technological, managerial, and professionalism capabilities of human resources, as well as increase productivity by increasing value-added contents of products and or services faster than its competitors.

Adi (2015:p. 3) said that the relationship between human capital (talent) and competitive advantages, as follows: Talent is the right stone fundamental building comes to creating an organization that is able to innovate and change and uses it as a source of competitive advantage (competitive advantages). By developing the right talent, both companies and employees will benefit and gain optimal (Iwan & Ashar, 2016:p. 86). This talented employee development should be done gradually in order to improve organizational performance, especially from the financial performance of Non-Tax Revenue.

Talent management in an organization able to give direction to the development process and utilization ability, expertise, and talent owned by employees. It is important to recognize that employee skills and knowledge play an important role in organizations in all sectors, employees are critical in all sectors and measures to identify, develop, deploy, and sustain are key to organizational success. To attract people with high potential is not enough, there must be a planned strategy to manage their talents.

The best organizations are organizations that focus on the future and predict what skills, attitudes, behaviors they need from their talented individuals. Organizations that have employees with talents that fit the needs of the organization will make the organization more competitive and competitive. Gifted people need to feel appreciated and their contribution can make positive changes. This change is one of them is the improvement of work achievement by each employee, so that can give more contribution to the organization.

Increasing the contribution of high talented employees can provide results in the improvement of the financial sector and non-financial for an organization one of which is the Government Agencies. The needs of talented people are needed for Government Institutions one of them is Center for Innovation - LIPI[1]. To gain an increase in the financial sector or so-called Non-Tax Revenue, Center for Innovation - LIPI requires highly skilled and competent and talented employees to provide good service to stakeholders.

By providing good service and timely completion of work, it will have a positive effect on the development of the financial sector. The existence of such positive effects, then provides an increase in Non-Tax Revenue will continue as expected and can be trusted by stakeholders. Previously need to be known related to the advantages and disadvantages of HR Center for Innovation LIPI in the process of improving the financial sector. By knowing this, it will show a good talent management program to be developed further. In addition, it can show that the human resources are able to compete in the future, thus helping the achievement of a better organization. The existence of talent management provides valuable information related to the development of human resources in the future, in order to be able to have a very good standard of competence in the face of the current era

2. LITERATURE REVIEW

Armstrong (2009:p. 264) talent management is the process of ensuring that the organization has the talented people needed to achieve its business goals. Rampersad (2006:p. 234) argues that: "talent management is a way of managing talent in organizations effectively, planning and development of succession in the company, the realization of maximum employee self-development, and the optimal utilization of talent". The definition shows that talent is Something that an employee built and nurtured through an organization's training and development program for a long-term process can improve its performance so that it can be a driver behind their contribution to organizational success.

Shruti (2012:p. 36) explains Talent Management is a strategic and holistic approach to business planning for human resources for organizational effectiveness. It is used to improve the performance and potential of talented people who can make a measurable difference to organizations now and in the future. So it can have an impact in improving the performance generated between all levels in the workforce, allowing everyone to reach their potential. James (2012:p. 179) Talent Management is the application of an integrated strategy or system designed to improve work productivity by developing improvement processes to attract, develop, retain and utilize people with the skills and talents necessary to meet current and future business needs. According to Pella and Afifah (2011:p. 81): "Talent management is a process to ensure a company fills the key position of future leaders and positions that support the unique skill and high strategic value". Talent are human beings who want to maintain company because of its advantages, talent can also be interpreted employees who are identified as having potential to become future leaders of the company "Based on the above understanding can be concluded that talent management is a process undertaken by the management of companies that manage their talents in order to be competitive With other companies. This talent management consists of various processes, namely planning, recruitment, placement, orientation, development, assessment, management, and appropriate compensation to all employees owned by the company. In the very business conditions of today's talent, every organization is faced with the challenge of attracting, appraising, training and retaining talented employees.

Mohammad (2013:p. 27) Talent Management is about Human Resources how organizations can recognize, recruit, develop, promote and retain high-potential and growing

[1] Lembaga Ilmu Pengetahuan Indonesia (LIPI) is a state research institute Classy world in research, development and use of science to Improve nation's competitiveness. The mission is: (1) Create inventions of science to encourage innovation in order to improve the competitiveness of national economies; (2) Develop useful knowledge for the conservation and sustainable utilization of resources; (3) Increase international recognition in the field of science; (4) Improve the quality of Indonesian human resources through scientific activity. The objectives are: (1) Increased findings, breakthroughs and renewal of knowledge and its utilization in realizing the nation's competitiveness; (2) Increased the added value and sustainability Resources Indonesia; (3) Improvement of the position and image of Indonesia in the global community in the field of science; (4) Increased scientific culture of Indonesian society

people within the organization. According to (Dessler 2013:p.130) Talent Management as a goal-oriented and integrated process of planning, withdrawing, developing, managing and compensating employees. Talent management also means how the company manages its resources from recruitment, staffing, performance appraisal, training and career development until employees leave the company so that ultimately the company's goals can be achieved.

Talent employees can be observed from their attitudes and behaviors (Hermin, 2013:p. 2). Here is presented attitude/treatment of talented employees:

a) Talented employees create and formulate rules (breaking the rule). High-talented employees do not hesitate to create and formulate rules that can improve performance;
b) Talented employees start and make changes;
c) Talented employees create creativity;
d) Employee talent is often a reliable source of information within the unit or organization; They provide data, suggestions, and creativity to shape important new things and change to a better direction;
e) Talented employees create innovation;
f) Talented employees are able to direct employees;
g) Talented employees inspire and motivate employees.

3. RESEARCH METHODS

The methodology that used to enhance the strategy divided into three steps: formulating, implementation and evaluating strategy. Formulating strategy resulted from identification factual condition of Non-Tax Revenue in Center for Innovation; collect and analysis data production Non-Tax Revenue in Center for Innovation; collect data and analysis for Talent Management factors. The next step is making an identification matrix to utilization all potential from combined implementation strategy using SWOT analysis; try to get a solution from all weakness and threat. From its matrix will get a mapping of action that expected accurately. The final step, doing an evaluation to control each action and making programs more focused.

4. RESULT AND DISCUSSION

To achieve the long-term goal is able to produce financial sector achievement (Non-Tax Revenue) which continues to increase from year to year. With the focus of that goal, the need for talented people is necessary to be achieved. To improve non-tax revenues, it is necessary to formulate strategies related to talent management system implementation. This formulation is used to be implemented appropriately in order to increase the competence of human resources can run optimally. Here is a strategy formulation of talent management implementation in improving Non-Tax Revenue

Based on Figure 1 above, the strategy formulation is based on the Organizational Business Model, ie Business Plan, Business Strategies, and Strategic Imperatives owned by Center for Innovation LIPI. The Organizational Business Model is structured on the basis of the main tasks and functions of Center for Innovation LIPI so that it can be adapted to the actual conditions. The next process is related to the performance improvement strategies chosen by each individual. The selection of this strategy is tailored to the competencies of each individual.

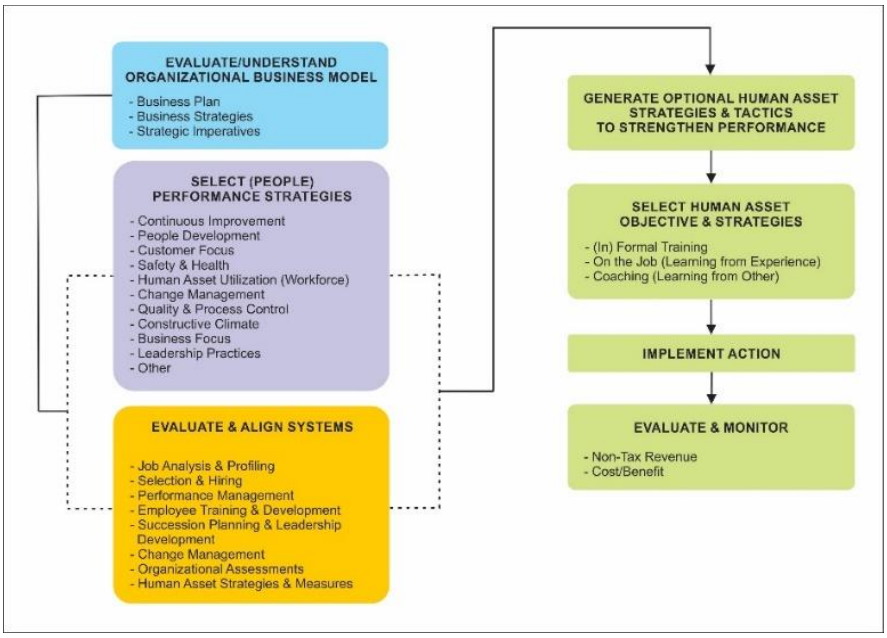


Figure 1. Formulation of Talent Management Implementation Strategy in Non-tax Revenue
Source: System Design Model for Talent Management Measure & Strategies, PLS Consulting, Inc[2] (2015), with modification

[2] PLS Consulting | 15685 SW 116th Ave. Ste. 287 | Portland, OR 97224. PLS provides the services that ensure the workforce aligns to the strategic vision. In any changing business landscape, PLS helps

To be able to know the job description of each employee, need Job Analysis of each job so that each employee understand the work they will do. A comprehensive evaluation system related to human resource development is needed, so they can be said to have good talent. The evaluation needs to be done by using the HR performance measurement system so that further strategies can be formulated related to the development of the human resources. By having talented employees, it can lead to a positive relationship to performance. This performance achievement can be seen after the implementation of the working mechanism carried out by evaluated based on the level of non-tax revenue achievement.

In the development of human resources many factors that affect the success or failure in improving organizational performance. The various analyses used are intended to examine various situations or the environment both internal and external environment. One important instrument to anticipate situations and conditions need to use SWOT analysis as confirmed by Hunger and Wheelen (1993:p. 12), “The factor is most importance to the corporation's future are referred to as strategic factors and summarized with the acronym S.W.O.T, standing for Strength, Weaknesses, Opportunities, and Threats”.

SWOT analysis develops strengths, weaknesses, opportunities, and threats. This approach seeks to develop the internal strengths and weaknesses of the organization (Looking In), taking into account the opportunities and threats- Existing threats from the external environment (Looking Out). The SWOT analysis also shows the important role of identification of internal strengths and weaknesses in the search for effective strategies. A careful match between the opportunities and threats facing the company with its strengths and weaknesses is the essence of the right strategy formulation. This analysis will continue with SWOT matrix depiction which illustrates four possible strategies: Strengths Opportunities (SO) strategy, Weaknesses Opportunities (WO) strategy, Strength Threats (ST) strategy and Weaknesses Threats (WT) strategy.

link employee acquisition, development and retention processes into one cohesive system. PLS provides the tools, methods and infrastructure critical to a sustainable workforce strategy capable of meeting both current and future business requirements. Our approach is customer-centric with solutions tailored to the specific environment of the client. Our company is dedicated to delivering unanticipated quality with every engagement, through the development and delivery of systems that connect the **Acquisition, Development** and **Retention** of critically needed talent.

Table 1. Internal Factors and External Factors Talent Management Implementation to Increase Non-Tax Revenue

INTERNAL FACTOR	
Strength	**Weakness**
• Availability of work systems and procedures in human resource management • The availability of clear job description on each function • Every HR is given creativity and innovative in producing performance • Well-managed talent development process • Rapid response from HR to every customer request • The ability of human resources in maintaining customer trust well • Flexibility of human resources in handling each case	• Unsuitable planning and recruitment of human resources • Less optimal empowerment of human resources who have participated in training and education • The existence of human resources who still have a low ability in certain fields. • Our agency has limitations in the capitalization of the implementation of work • Lack of focus on human resources in completing the work, resulting in late work completion • Top management lacks understanding of the development of talented people
EXTERNAL FACTOR	
Opportunities	**Threats**
• Human resources abilities and competencies are diverse • The number of human resource upgrades in the Talent development process • Increased compensation for human resources that can generate acceptance for the organization • Competitors in the current sector are still small	• The commitment to develop and improve the quality of human resources in the form of budget is not yet appropriate • Talent development by competitors has been oriented towards the future • New regulations relating to the use of Non-tax State Revenue Funds • Competitive strategy changes can threaten our position in the market.

Based on the above explanation, it can be known related to SWOT which is found in the development of talent in the process of increasing non-tax revenue. The main thing in this talent development process is with the availability of systems and working procedures in human resource management. The availability of such a system can provide an expected increase in talent, as a goal to gain an increase in the financial sector that has been targeted annually. With the planning and recruitment of human resources that are not appropriate will make an obstacle to the development of the organization. This is not an obstacle, but it can make an advantage in an HR development process that is done in a sustainable way.

With the ability and competence of diverse human resources, this makes the opportunity for the organization in obtaining increased acceptance from various sectors. Therefore, it is necessary to make arrangements in such a way that with the talent-talent owned can provide a positive effect for the organization. One of the efforts to develop human resources is the availability of budget, in the absence of commitments related to budget allocation, the process of human resource development can not be done optimally, so it is necessary to optimize the human resources capability.

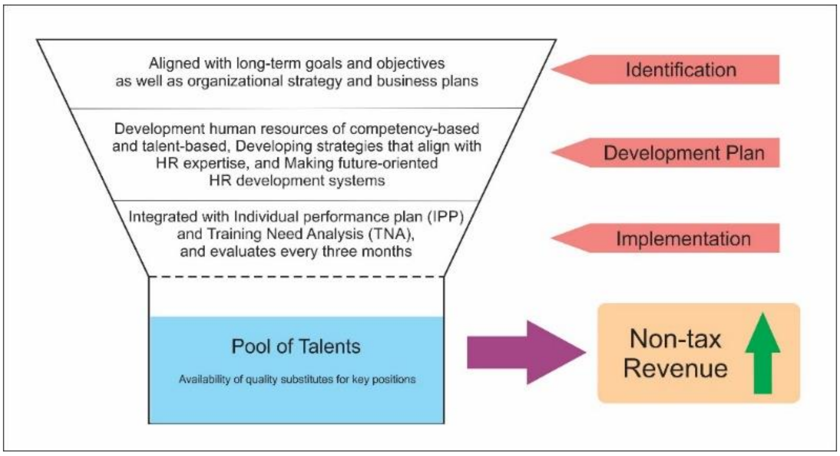
Internal Factor / External Factor	Strength	Weakness
	• Availability of work systems and procedures in human resource management • The availability of clear job description on each function • Every HR is given creativity and innovative in producing performance • Well-managed talent development process • Rapid response from HR to every customer request • The ability of human resources in maintaining customer trust well • Flexibility of human resources in handling each case	• Unsuitable planning and recruitment of human resources • Less optimal empowerment of human resources who have participated in training and education • The existence of human resources who still have a low ability in certain fields. • Our agency has limitations in the capitalization of the implementation of work • Lack of focus on human resources in completing the work, resulting in late work completion • Top management lacks understanding of the development of talented people
Threats	**ST Strategy**	**WT Strategy**
• The commitment to develop and improve the quality of human resources in the form of budget is not yet appropriate • Talent development by competitors has been oriented towards the future • New regulations relating to the use of Non-tax State Revenue Funds	• Preparation of a budget-based training program • Developing a future-oriented HR development system • Increase customer trust so as to provide better acceptance • It is necessary to formulate alternative strategies in running a business that is oriented to the talent owned	• Human resource development programs are adjusted to existing budget patterns • Socialization of the latest regulations so as to encourage • Focus on your own strategies and the optimization of existing talents
Opportunities	**SO Strategy**	**WO Strategy**
• Human resources abilities and competencies are diverse • The number of human resource upgrades in the Talent development process • Increased compensation for human resources that can generate acceptance for the organization • Competitors in the current sector are still small	• Developing Talent-based human resource development programs • Describe the description of the tasks and abilities of the experts they possess • Preparation of compensation maps on human resource performance that can generate revenue • Development of HR related strategies with specific expertise on sectors capable of generating revenue	• Improved coordination of human resource recruitment programs • Shipping of related human resources Increased competence • Preparation of HR evaluation post implementation of education and training • Division of tasks tailored to function in the execution of work • The internalization of the Talent development program by Top Management

Based on the SWOT analysis above, the most important thing related to human resources development program in talent management element is the need of a strategy program related to human resource development based on competency and talent owned by making an adjustment to the available budget. It also needs to be added related to the preparation of a strategy that aligns with the HR expertise that is capable of generating acceptance from various sectors tailored to the skill. Currently, every competitor has a plan related to the management of its human resources to be able to produce or get business that fits its function. HR management is done as an effort to process the talent management owned by each individual. With good talent management of each HR will give good results.

One of the weaknesses in this talent management process is a lack of coordination related to human resource recruitment program. To generate revenue from the financial sector is good enough, it takes the process of planning and recruitment of human resources tailored to the needs that exist. With this problem, acceleration programs need to be done related to the improvement of human resource competence, in order to be able to compete in the current condition. In addition, the weakness related to human resource development is related to the unsuitable budget pattern, so it can not run optimally.

From the result of explanation related to formulation and implementation related to talent management application, following evaluation result from applying of talent management which can increase Non-Tax Revenue.

Figure 2. Evaluation Results of Talent Management Implementation



In accordance with figure 2 above, it can be explained related to the model of talent development that can provide an increase in Non-Tax Revenue. The first thing to do is to identify human resources in order to be aligned with long-term goals and objectives and need to be aligned with business plans and organizational strategies. Identification is intended to collect talented people so that the development or improvement of competence can be done well, so it can be a good substitute or a leader of a very good job executor.

Furthermore, it is necessary to plan the development of human resources based on the competence and talents possessed, the development of a strategy aligned with HR expertise, and the development of future-oriented human resource development system. This HR development process also needs to be integrated with individual performance plan (IPP) and aligned in the preparation of Training Need Analysis (TNA). Human resources development process needs to be evaluated every three months to be known related to the development of each individual. With the continued development of talent, the organization has the availability of talents is good to be able to carry out the work well. The availability of many employees with talent, it will provide an improvement in the form of Non-Tax Revenue. Therefore, the application of Talent management in the process of increasing non-tax revenues is very good to continue to be done in this organization, so it can give a positive effect on the improvement of overall organizational performance.

5. CONCLUSION

To achieve the long-term goal is able to produce financial sector achievement (Non-Tax Revenue) which continues to increase from year to year. With the focus of that goal, the need for talented people is necessary to be achieved. With the process undertaken in the management of talented people, the organization in the future can be competitive with other companies. The advantages and disadvantages of each HR owned needs to be analyzed first in order to maximize the talent management process.

Based on the results of the above analysis, it is necessary to identify the talented people first. Identification is intended to get people who have advantages so as to compete with the outside world. From the results of identification, it is necessary to do a system of human resource development planning based on competence and talent owned. In addition, it is expected that this human resource development can be oriented towards the future in order to have more advantages than existing competitors. The availability of many employees with talent, it will provide an improvement in the form of Non-Tax Revenue. Therefore, the application of talent management in the process of increasing non-tax state revenues is very good to continue to be done in this organization, so it can provide a positive effect for improving the overall performance of the organization.

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Which Training Actually works?: Employee Training From an Employer's Perspective

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Abstract*— *Children enter kindergarten at about age five and complete an undergraduate degree at university at about age twenty-two. This is about seventeen years of formal schooling with possible four to five additional years of postgraduate study. Given a retirement age of 65, the length of time we work is at least double the time we spend in school. In Australia with no fixed retirement age, our working lives may be considerably longer. Do these years of schooling prepare you for the workforce up to your retirement? Most likely, there is a need for continuous lifelong learning to remain relevant and employable. Thus, why do national education policies stop at college? Do governments have no role to play in employee training? Not every firm will be large enough to invest time and resources to develop customised employee training programmes to ensure a productive workforce. Governments can play a role in educating the private sector on how to train their employees in an effective manner. This serves as a bridging link between conventional education policies that only reach up to university education and governments' economic development strategies that rely on a knowledgeable and productive workforce. Including employee training within a broader definition of education policies serves to address the longstanding gap between what is taught in schools and what is needed in the workforce. This paper looks at employee training from the employer's perspective to ask which training actually works. The paper will review the evidence on employee training to provide an overview on suitable training programmes to be undertaken given differing objectives of human capital development. On-the-job and off-the-job training differ in effectiveness based on learning outcomes we aim to achieve. Measuring training effectiveness is underappreciated given we want to know whether the benefit outweighed the cost of training. High-performing employees, new employees and older employees have differing needs which needs to be accounted for. There is no one-size-fits-all training programme so each training programme should be designed to achieve specific objectives with a clear way to measure whether it succeeded.

1. Introduction

National education policies typically focus on the education of residents from preschool/kindergarten until university. However, do all these years of school adequately prepare you to work until you retire? Children enter preschool/kindergarten at about age 5 and complete an undergraduate university degree at about age 22. Employees work then until they retire which differs based on the country. If for example, an employee retires at age 65 then this individual would have been approximately schooling for 17 years and working for 43 years. Thus, the typical working life is 2.5 times the length of schooling meaning that continuous lifelong learning is critical to remain relevant and employable.

Firms have an interest in continuing to develop their employees, but not all firms are large enough to invest time and resources to develop customised employee training programmes to ensure a productive workforce. This highlights a gap where governments can play a role in educating the private sector on how to train their employees in an effective manner. This serves as a bridging link between conventional education policies that only reach up to university education and governments' economic development strategies that rely on a knowledgeable and productive workforce. Including employee training within a broader definition of education policies serves to address the longstanding gap between what is taught in schools and what is needed in the workforce. This paper looks at employee training from the employer's perspective to ask which training actually works. The paper will review the evidence on employee training to provide an overview on suitable training programmes to be undertaken given differing objectives of human capital development.

The knowledge, skills and expertise of an organisation's workforce is frequently cited as the source of its lasting competitive edge. This is particularly true for organisations in high knowledge intensive services. To maintain this edge, human capital development and investment is undertaken to continuously upgrade employees. However, there is a lack of clear understanding of the effectiveness of employee training programmes despite the large sums invested by organisations in this area.

Some researchers have found a huge amount of wastage with as little as 10-15% of what is learned during training being applied on the job (Armour, 1998; Sacks & Burke, 2012). Thus, it is evident that more thought must be given by employers in terms of what is trained, how to train and how to evaluate the efficacy of training. Dhliwayo and Nyanumba (2014) highlight that employers and employees have different needs/expectations in relation to training which should be matched with constant feedback before, during and after the training programmes in order to achieve the best results. The most basic indicator of the effectiveness of any training is a simple test of whether the trainees display different behavioural patterns after the training, i.e. applying what is trained on the job (Khalid et al, 2011).

The next section will briefly explore the different types of training with the following sections discussing how to measure the effectiveness of trainings and which types of training are suitable based on an organisation's objectives for human capital development.

2. Types of employee training

Training can be broadly categorised as off-the-job training (away from the job location) or on-the-job training (at the job location):

Off-the-job training (Tüzün, 2005)

1. Lecture
Oral presentation of information/knowledge to an audience. Best used to create general understanding of a topic of delivering large amount of information to large group of people in a short period of time.

2. *Computer based training*
Guiding trainees through a sequence of content using a computer. This method allows for a structured and guided training through content controlled by the trainer.

3. Games and simulation
Reproduces processes, events and circumstances that can occur in the workplace. Allows for the experience of these events in a controlled environment to improve performance.

- Vestibule training: Trainer demonstrates how to use machines and follow procedures in a virtual duplication of workplace. This method works well for employees dealing with machinery.
- Business games: trainees are put into a simulated business environment and learn how to deal with issues with feedback on decisions made. This type of game/simulation develops decision-making skills and how to solve complex problems.
- Case study: trainees asked to sort through information provided in a series of events and make decision/propose solution. This develops analytical and problem-solving skills of employees.
- In-basket exercise: simulation where trainees are trained on how to prioritise and delegate items that can be found in their typical "in-basket". This training provides practical knowledge/skills on how to deal with day-to-day decisions.
- Role playing: trainees experience a situation in a controlled setting where they take on different roles. This is generally helpful to develop interpersonal skills such as communication and conflict resolution.
- Behaviour modelling: a "model" acts out a certain desired behaviour in a situation to give a practical demonstration to trainees on what the required skill is. This has an advantage of providing a visual example of the desired behaviour expected of employees.
- Sensitivity training: trainees communicate how they see each other but it may become very personal. Allows for personal insight of how employees' behaviour and decisions are perceived by others but carries a potential risk of becoming too personal and emotional.

On-the-job training (Tüzün, 2005)

1. *Job instruction training*

Trainees proceed through a series of tasks/processes of a typical work procedure. Consists of four steps: preparation, present, try out and follow up. This training technique is good for task oriented duties with a focus on skill, factual and procedural knowledge development.

2. *Job rotation*

Systematic movement of employees from job to job within an organisation. Provides hands on experience which aims to make individuals more self-motivated to work under different situations, flexible and adaptable in diverse environments, innovative in terms of applying previous knowledge/experience in the new job, eager to learn about more different aspects of the organisation and able to communicate effectively. Job rotation is used to achieve human capital development objectives such as employee orientation, career development and preventing job boredom/burnout.

3. *Coaching*

One-on-one guidance and instruction to improve knowledge and skills. The coach and coachee conducts needs assessments, sets the coachee's goals and develops an action plan. The coach provides continuous feedback and support. Coaching is usually used for employees with performance deficiencies, or as a motivational tool to high-performing employees.

4. *Apprenticeship*

One of the oldest forms of training whereby a master of the craft provides planned and practical instruction to the apprentice over an extended period of time.

Measuring the effectiveness of training

There are a wide variety of methodologies used to measure the effectiveness of training. The most widely used and commonly accepted methodology is Kirkpatrick's Four Level Approach which was developed in 1959 (Tüzün, 2005).

Kirkpatrick's Four Level Approach

Level 1: Reaction	Were the participants happy with the training? What do they plan to do with what they learned?
Level 2: Learning	What skills, knowledge, or attitudes have changed? By how much?
Level 3: Behaviour	Did the participants change their behavior based on what was learned in the programme?
Level 4: Results	Did the change in behaviour positively affect the organization?

Source: Tüzün (2005)

Researchers have adapted Kirkpatrick's methodology to improve the accuracy and relevance of training effectiveness measurement. However, there has yet to be an approach that has displaced Kirkpatrick's Four Level Approach in terms of its widespread use and acceptance (Tüzün, 2005). Some of these alternative approaches are briefly elaborated below.

Kaufman's Five Level of Evaluation

Level	**Evaluation**	**Focus**
1a	Enabling	Availability and quality of human, financial and physical resources inputs.
1b	Reaction	Acceptability and efficiency of methods, means and processes.
2	Acquisition	Individual and small group mastery and competency.
3	Application	Individual and small group (product) utilisation within the organisation.
4	Organisational Output	Organisational contributions and payoffs.
5	Societal Outcomes	Societal and client responsiveness, consequences and payoffs.

Source: Tüzün (2005)

Context, Input, Reaction, Outcome (CIRO) Approach

Context	Evaluate the conditions/context to determine training needs and objectives.
Input	Gathering information about training resources to select appropriate inputs to training process.
Reaction	Obtain and use trainees' reactions/feedback to the training for improvements.
Outcome	Evaluating the findings and outcomes of training.

Source: Tüzün (2005)

The Five Level Return on Investment Framework

Level	Evaluation	Focus
1	Reaction and Planned Action	Measures participants' reaction to the programme and outlines plans for implementation.
2	Learning	Measures changes in skills/knowledge/attitude.
3	Job Application	Measures change in behaviour on the job and specific application of the training material.
4	Business Results	Measures business impact of the programme.
5	Return on Investment	Measures the monetary value of the results and the cost for the programme. However, benefits may be hard to monetise due to subjectivity, difficulty to quantify and slow growth of benefits over time.

3. What Training Works For Which Trainee?

Overview

Blanchard and Thacker (1998) explored the effective of different training methods and identified the comparative advantages of various trainings targeted at improving different types of knowledge, skills and attitude.

		GOAL OF TRAINING					
		Knowledge			Skills		
	TRAINING METHODS	Declarative (Facts)	Procedural	Strategic	Technical	Inter-personal	Attitudes
OFF-THE-JOB TRAINING	Lecture	3	2	1	1	1	3
	Computer Based	5	4	3	2(general)/ 5(specific)	2	3
	Vestibule	1	3	2	5	1	2
	Case study	3	2	4	2	2	3
	Business game	2	3	5	2	2/ 4(inter-personal game)	2
	In-basket	1	3	4	1	2/ 3(multiple in-basket)	2
	Role play	1	2	2	2	4	5 (role reversal)
	Behaviour modelling	1	3	3	4	5	3
ON-THE-JOB TRAINING	Job instruction training	3	5	4	4	2	5
	Apprentice-ship	5	5	4	5	2	5
	Coaching	3	5	4	4	4	5

Note: 1= not effective; 2= mildly effective; 3= moderately effective; 4=effective; 5= very effective

It should be noted that the effectiveness of different trainings identified in the above table depends upon a wide variety of factors including trainees' preferences, trainers' capabilities and appropriate design of training programmes. Thus, the table provides a good snapshot of the effectiveness of different types of trainings but may not precisely match the exact experience of a specific training programme.

The next sub-sections explore some of this specificity/variation in more detail by considering which trainings are more effective for certain groups of employees.

High- and Low-Performing Employees

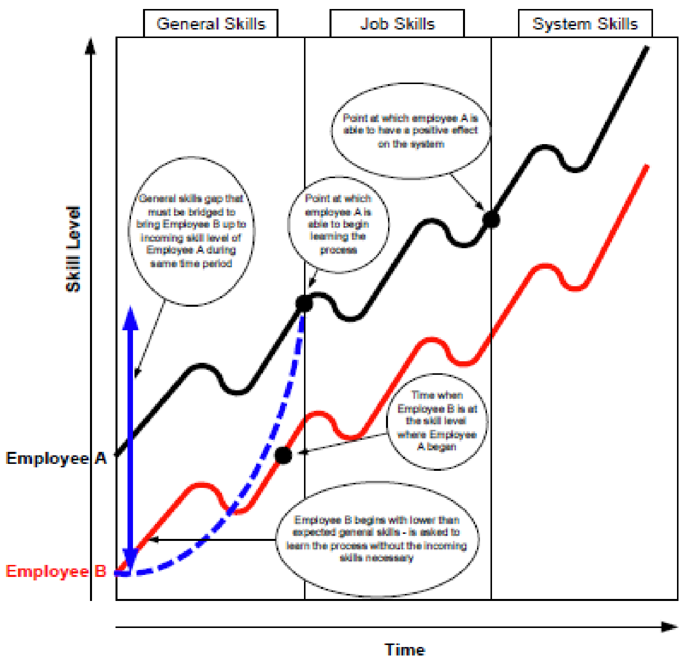
Bartel (1995) argued that training can be seen as "career advancement" for high-performing employees or "remedial" action for low-performing employees. This can create a bias in the returns/benefits of training with the high-performers seeming to gain much more after training compared to low-performers. This should be understood in advance so that the returns to training of these different groups of employees do not get unfairly compared.

Researchers have found that structured and standardised training such as supervisor led training utilising company manuals has higher benefits for low-performing employees (Liu, 2005; Swanson, O'Connor, and Cooney, 1990). This is because the supervisor can reprimand the low-performing employee for continued poor performance which incentivises the employee to work harder. Threat of such disciplinary actions would not work as effectively for high-performing employees as they are already performing well and feel no danger of facing reprimands for bad performance.

In contrast, peer training works better for high-performing employees (Liu, 2005; Swanson, O'Connor, and Cooney, 1990). Peer trainers are the experienced workers who are seen as subject experts in the workplace. Such trainers share knowledge based on their experience through informal activities. Additionally, workers are likely to be more open to learn from fellow co-workers whose expertise can be clearly observed and who do not have disciplinary authority over them. However, the informality and inconsistent scheduling of such peer training causes this type of training to be less effective for low-performance employees. Employees with a good command of job-related knowledge and skills (i.e. high-performing employees) are more likely to benefit from peer training.

New Employees

It is slightly underappreciated that new employees join the organisation with different skill levels. Molnar and Watts (2000) highlight that a certain level of general skills are required before specific job skills can be learned. Such general skills are in effect soft skills which include discipline, timeliness, commitment, attentiveness, problem-solving skills and communication skills. Without such skills in place, specific training to develop job skills will be wasted.



Source: Molnar and Watts (2000)

Another issue is the "knowledge and perception gap" whereby experienced workers acting as trainers have a higher level of knowledge and skill compared to new employees (Molnar and Watts, 2000). This may create an issue as trainers will expect that new employees will already possess a certain level of knowledge, skill, ability and familiarity with job-specific language/concepts.

In general, these two factors cause the following problems with limits the effectiveness of training (Molnar and Watts, 2000):

- If a new employee lacks the required general skills, then trainers may become frustrated and the training quality declines.
- Experienced employees who act as trainers rarely receive the skills to train properly and typically can only train by "show and do". This misses out on a crucial component of feedback.

As a result, the time needed to train the new employee up to the desired level of job skills is increased with negative implications for job satisfaction, turnover and cost of training. To smoothen the training curve for new employees, organisations must overcome these issues (Molnar and Watts, 2000):

1. General skills

During the hiring process, organisations should get a clearer picture of the general skills of each new employee. This will help to ascertain if general skills training is needed before they can start their main job and related job-specific training.

2. Trained "mentors"

A combination of classroom and real life application should be applied to ensure mentors have the appropriate coaching skills to train new employees in an effective manner. The trainer's job is to integrate the trainees into the organisation and build job skills with their own individual training style.

3. *Structured procedure manual*

In the case of multiple mentors, each individual trainer has their own style and preferred way to carry out tasks. This may confuse new employees as they are unsure of which style to follow. Exposure to multiple styles of carrying out the same job task is beneficial but may be overly confusing to a new employee. Thus, it is important to have a structured procedure manual that explains each step of job processes to act as a guide for new employees.

4. Structured but flexible training schedule

The training schedule should outline the necessary skills to be learned and the timeline within which this will be achieved. However, the schedule should be flexible to address any unexpected issues.

5. Post-training evaluation and reinforcement

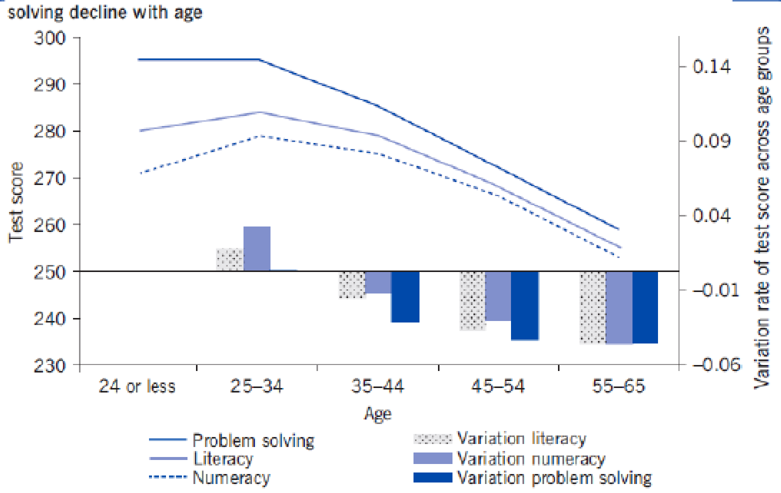
The mentor should evaluate the new employee based on their observations and results of job tasks to see if the trainee has gained the targeted job skills. This will act as a basis for feedback mechanisms should additional training be needed.

Older employees

The ageing of populations is an inescapable demographic trend. This means that inevitably workforces will also age with increasing focus on how to upgrade older employees to ensure they remain relevant and contribute to the organisation.

Shifts towards higher service-oriented and knowledge-intensive skills are likely to continue necessitating skill upgrading to ensure aging workforces can adapt to rapid technological changes and avoid skill obsolescence (Picchio, 2015). As people age, their cognitive skills decline with psychological studies identifying that fluid intelligence (processing speed, problem solving, spatial ability, reasoning, short-term memory) declines progressively from young adulthood until the 60s with crystallised intelligence (long-term memory, verbal ability, general information, existing knowledge) only declining in the late 70s (Picchio, 2015).

Figure 1. Cross-section data show that average skills in literacy, numeracy, and problem solving decline with age



Note: The variation rate is the change in the test score when moving from one age class to the next.

Source: Author's analysis of data from the Organisation for Economic Co-operation and Development (OECD) Program for the International Assessment of Adult Competencies (PIACC) 2012. Online at: http://piaacdataexplorer.oecd.org/ide/idepiaac/

IZA World of Labor

Source: Picchio (2015)

This means that as employees age, they will do worse in training that relies heavily on fluid intelligence, e.g. novel situations, abstract ideas, ICT, and require more time to comprehend new ideas. Individuals also experience a different rate of decline of these skills with studies identifying larger variation in training performance for older employees (Picchio, 2015). Training that utilises multiple instructional methods with a focus on being related to their current job and cystallised skills tends to be better understood and applied by older employees.

Additionally, there are barriers which inhibit the amount of training available to older employees which are as follows (Picchio, 2015):

1. *Economic*

Organisations tend to invest in training if the returns are greater than the costs. Older employees have fewer expected years left in the workforce so the benefits of training are lower. Additionally, older employees may feel less motivated to invest in their own training unless they receive a benefit (higher wages) as a result of their efforts.

2. *Attitudinal*

Negative stereotypes exist about older employees having lower learning potential which means they are less able to learn new skills. Even though older employees are less likely to leave the organisation, the management tends to focus on their shorter job tenure in decisions not to invest in their training.

3. *Institutional*

Training practices and procedures may be more targeted to a younger audience and thus not meet the needs of older employees. Long training courses are also a deterrent for older employees due to their shorter expected working life.

Overall, organisations must reconsider how they deal with training older employees otherwise they are relegating such employees to have ever decreasing productivity and skills. Such an approach may have worked in the past when huge swathes of young and skilled employees were continuously joining the organisation. However, population ageing as well as the idea of a global workforce whereby labour is mobile across the world is gradually destroying this idea. Organisations' hiring process may find an ever shrinking pool of young talent with the best talents being fought over by an ever increasing number of global firms.

4. CONCLUSION

This paper has examined the various types of trainings and their effectiveness at improving different skills. An exploration of customised training based on the types of employees was also considered with a focus on high/low-performing employees, new employees and older employees. There is no one-size-fits-all optimal training method. Thus, this means organisations need to ask themselves hard questions of what types of skills do they want to train and to commit themselves to assessing the effectiveness of training in developing these skills. To restate Khalid et al (2011), if trainees do not change and apply what is learned during training after the training is completed then it means the training was ineffective and a waste. The onus is on organisations to develop training that can be applied in employees' daily job, rather than for employees to try and figure out on their own whether training learned can be applied to the job and to what extent.

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Exploring Creative Education Practices and Implications: Case study of National Chengchi University, Taiwan

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Abstract— In recent decades, globalization of economies has led to intense demand for diverse, multi-talent and creative workforce to sustain market competitiveness, innovation, and corporate performance. These changing trends have given rise to increasing challenges for higher education, and compelled universities to transform their educational system all over the world. Taiwanese universities have successfully responded to these challenges by not only formalizing educational practices, but also continuous restructuring of overall systems to enhance creative talent management and sustainable growth. Prior literature suggests that much less attention has been paid to understand creative education methodologies, especially in the East. The main purpose of this study is to explore how creative education practices and strategies enable sustainable creative talent-management by using the case of National Chengchi University (NCCU), Taiwan. Using snowball sampling with data set of 10 students and 3 faculty members, the authors analyzed the information gathered from different sources including face-to-face interview, content analysis, and personal observations.

Our findings suggest that creative education in NCCU is characterized by: continuous appraisal and integrated supporting resources; interdisciplinary faculty teams; innovative HR practices for student recruitment; rich course contents focused on student holistic development; teaching methods predicated on students' experience, interaction and teamwork, and; conducive environment for creative learning.

Keywords: Creative Education, Creativity, Taiwan, National Chengchi University, creative talents

1. Research background

Innovation has become the core driving force of state economic development, has become the strategic choice of the world's development. Brunei has implemented the national strategy of Wawasan Brunei 2035(Brunei Darussalam, 2012) to build an knowledge-based， innovation-oriented country which has made the creative industry has become a household word. Every citizen and resident of Brunei Darussalam need to play a role and make themselves into useful assets in nation building by equipping themselves with knowledge and skills, enhancing competitiveness, being innovative and creative.(Brunei Darussalam, 2017) As an important part of the national creative system, universities have to fulfill this social responsibility to realize the creative development. So how can universities perform this responsibility-to cultivate creative talent has become the focus of higher education research. Started from the early years of the Republic of China, the creative education in Taiwan has developed from the infancy stage to the experimental stage, to the expanded stage, and to the mature stage now (MOE, 2001). The publication of "White Paper on Creative Education" is considered to be the milestone for creative education in Taiwan, which attracts the attention of the world to Taiwan's creative education. The National Chengchi University (NCCU) as one of the top and leading universities in practicing creative education in Taiwan , its practices are worthy to be introduced and shared with others universities in Brunei and other countries .

A. Creative education in Taiwan

With the development of knowledge-economic era and information era, people put more and more value on the ability of creativity which has become the important mark for the individual and national competition. In order to meet the demands of society development and to keep the prosperity of cultural and creative industry, Taiwanese need continuously elevating their competition which is based on the individual creativity. What's more important, there is a consensus view within the realm of education that creativity is amenable to teaching (Amabile, 1996; Baer & Kaufman, 2006; Craft, 2000; Cropley,1992; Esquivel, 1995; Fryer, 1996; James, Lederman, &

VagtTraore,2004; Kaufman & Beghetto, 2009; Parnes, 1963; Chen, L. 1997;Yu-Sien Lin,2014).Therefore, the Ministry of Government and the Ministry of Education has launched series of policies and programs which put a large amount of efforts to promote the cultivation of creativity in students, such as “Education reform consultation report”, “White paper on leaning society”, “Science and technology national program”, “science and technology creative research project” and so on.

The announcement of “White paper of Creative Education” in 2001 is reckoned as the milestone of development of creative education. After this policy, creative education has received quite lots of resources from both public sectors and private sectors and has gained all ranks of achievements in different level of schools, from the kindergarten to the university. The purpose of this “White paper of Creative Education” is to identify the role of creativity in Taiwan under the background of education reform and knowledge-economy era, to integrate all the relevant policies to promote the creative education from the kindergartner to universities. With the instructions of the “White paper of Creative Education”, “Creative Education Mid-term Development Project” has been carried out for two sections-totally 8 years, which aims to cultivate the living attitude of lifelong learning and fearless to innovation, to provide the learning circumstance of respecting differences and enjoying studying, to accumulate the rich and accessible resources of knowledge, to propel the industry which values the knowledge property, and to develop the multiple, creative, and happily-sharing cultural atmosphere(MOE, 2001). Ten years later, to further promote the creativity , the ministry of education launched another project – “Future Imagination and Creative Talents Midterm Project” which aims to cultivate students 3 core abilities: thinking ability, creativity and future thinking. There are 7 different programs with different themes, future home, future industry, future education, future culture, future technology, future society, and future environment. Those well designed programs provide the students the motivation and abilities to create a better future for him/herself , for the society and for the nature. The creative education in Taiwan puts more value on the full exploration of individual intellectual, emotion, society, body, aesthetic, creativity, art, responsibility and potentials; emphasizes the intercultural and multiple learning and experiences; cares for the development of every students’ intellectual, creativity and critical think including the “backward students”; shows a close relationship and frequent communications between the teachers and students, students and students, institutions and institutions, and government -private sectors.

B. National Chengchi University in Taiwan

To cultivate the creative talent to meet the demand of the economy and society development, many universities offered the creative, innovative and entrepreneur curriculum. Each university has its own resources and advantages thus has different specialty in creative education. Upholding the motto “Harmony, Independence, Balance and Preeminence, National Chengchi University is the most complete and leading domestic university, known for humanities and social science education. The creative education practice in NCCU is reckoned as one of the featured universities in Taiwan. Students there have been supported to learn more than just creative knowledge and skills. Believing in the holistic person philosophy, NCCU has pulled all their resources to provide a good learning environment for bringing out the creativity in students. With the co-effort of among different institutions inside and outside the university, teachers and students, they have achieved many the aim to inspire everyone creativity, to help students to develop multiple talents and finally to bring up the holistic people.

2. Literature review

Many scholars who work on creative have a consensus that the inaugural speech of Joy Paul Guilford in 1950 was the starting point of creative studies (Jing-Jyi Wu, Li Chengxian & Lin Weiwen, 2007). Since Joy Paul Guilford considered “creativity” and “problem solving ability” as the most complex ability for human in The Nature of Human Intelligence in 1967, creativity has been treated as human’s most valuable treasure. Different countries, like USA, Singapore, Japan, Australia, and Korea and so on, all have implemented various educational reforms to cultivate individual’s creativity, which makes 21 century a “creative age”(Li Anzhong,2007) .

As mentioned, everyone has the potential to be creative and the ability to think creatively could be trained and developed. Congruent with the findings of western studies, many studies conducted in Taiwan have proved that the ability to think creatively can be achieved through learning, and both students and teachers have strong interest and positive attitude toward courses on creativity (Hsueh-Chih Chen, 2004; David Jone, 1996; Wen-Chung Yeh, 2006; Chi-hao Chuan, 1999).Those examinations of the influence of some courses on students’ creativity show positive relationship between them.

To carry out creative education, first we need to know what creative education is. Due to the complex nature of creativity, there are quite many different definitions. Taiwan researchers Mao Lianwen and Chen Longan (Justin J. Y. Lin, 2011) believe there are two definitions both broad and a narrow for creativity. In the broad context, creative education refers to all the relevant system, policies, environments and practices in universities; in the narrow sense, creative education is basically one kind of teaching in universities in which teachers try to inspire the creativity from the students through curriculum planning and relevant teaching activities. Researcher Justin J. Y. Lin (2011) maintained that creative education contains creative ideas, creativity and entrepreneur teaching; but the real aim is to challenge students ability of creativity, to foster the spirit of entrepreneur and develop the lifelong learning mind, to experience the hardship and joy of starting a business, to learn from and respect the seniors, rather than to encourage all the students to set up companies. How to design a successful creative education? Yu-Sien Lin (2011) gave out a conceptual framework of creative pedagogy, three elements of creative pedagogy, which includes teaching for creativity, creative teaching and creative learning. The leader of researchers on creative education in Taiwan, Prof. Jing-Jyi Wu, mentioned the 11 obstacles, like too much emphasis on IQ not creativity, and12 suggestions for cultivating Chinese students, like construction of creative culture. (Jing-Jyi Wu, 2002)

Creative education emphasizes the construction of creative environment, which is student-based, closely related to real life and pleasurable learning experiences. As a result, students will enjoy the creative study and teachers are pleasant to foster students' creativity. It is known to all that to develop creativity and the ability to create, creative education is not only an important way but also the inevitable way. There are some relevant terms, like creativity, innovation and entrepreneurship. Those terms have something in common, but also there are differences. Creativity -creative idea is the beginning of innovation which is a process to make value out of creative ideas. Entrepreneurship refers more to some business behaviors to put the practices of making value into the new career in which whole process need creativity. To generate creative ideas, to make innovations and entrepreneurship are based on the exploration of creative ideas (Lin Junhua, 2011).

3. Research Methods

The methods used in this research were observation, interview and review of documents of curriculum.

For the observation, the researcher visited the Creativity Laboratory several times to observe the whole environment, teaching and learning process from September to December in 2013.

For the interview, the researcher conducted series semi-structured interviews with 3 teachers face in face, the dean of the Creativity Laboratory which is also the main designer of the lab, a well-known professor in creativity research, and a teaching secretary as well as 10 students.

For the documents, the researcher reviewed relative research papers on creative education, syllabuses from the X Academy, files of the recruitment of the X Academy and some works done by the students.

4. Results

After conducting those interviews and reviewing lots of relevant files, the researcher gathered some information about practices how university cultivate creative talents. Key issues regarding the creative education are explored below: the main functional institutions, the main way to implement the creative education, and the curricula.

A. Main functional institutions

Institutions constructions are the basic foundation of any programs. The National Chengchi University has 3 main institutions to ensure the quality of creative talents: the Center for Creativity and Innovation Studies, Creativity Laboratory, and X Academy. Though there is no separate entity college, they changed the previous art center into the office and classroom to make full use of the current resources. There are 3 supporting system: curriculum supporting, creative idea supporting and service supporting, which enable to construct a rich and creative environment with minimum human resource material resources. Teachers belonging to different departments, like Law College, Commercial College, College of Communications, College of Foreign Languages, and College of Education in the National Chengchi University have joined class teaching which enable the diversity of the curricula. Different professors from different colleges collaborate and co-design the curriculum.

As the university level research center, the Center for Creativity and Innovation Studies has four primary tasks of encouraging creativity, establishing databases, academic publishing, and facilitating international exchange which offers suggestions on the Educational philosophy and curriculum design. In addition, office of

Academic Affairs, Office of Students Affairs, and Office of General Affairs provide needed service and resources. (Zeng Zhilang, 2008) Creativity Laboratory is the basement for creative education in NCCU, used as the classroom and place for daily activities. It is designed by teachers and students, equipped like a home, which aims to integrate students' creative ideas.
Established at 2011, X Academy is a school where students coming from different background living together for 1 year. It provides an environment that cares for nature, human, and society, and encourages students to do things, to experiencing innovation, acting rather than just thinking.

B. Mode of execution

NCCU has set up the creative credit program and the X Academy to propel the students' creativity cultivation. With experiments as the power and humanism as its core, the creative program ran 4 years from 2006 to 2010, aiming to serve students' and teachers' innovation. It provides students motivation to create by doing the experiments with students and allowing students to think freely and wildly. This program requested students who were interested in creativity to do the registration first and then take the entrance exam. And the two-way election system enables the students who are interested in creativity, innovation and entrepreneurship can join in the program. Due to the limited resource and students' various interests, only the students who can pass the election can join the program which means the creative curriculum are not opened to all the NCCU students.

The first special thing about their practices is the creative election. Not only did teachers come from different departments, but also the students came with various backgrounds which were chosen through quite creative tests.

For the first 3 years, the scheduled admission number was 30 and 40 for the 4th year. During this 4 years, more than 100 students applied for this credit program so they had to enroll more than the scheduled number every year. What's more, the difficulty of the entrance selections has increased year by year. For the first year, students only needed to submit the application form and personal files (the self-introduction, creative work, and the analysis and description for the work). According to these files, the jury could choose the students by evaluating their creative motivation, passion and potential for creation. For the second year, besides the application form and personal files, students had to do two things more: they had to read a article about creativity and then wrote down what they learned from the article, and their own creative idea about their major; they were required to take a photo with fruit "orange" in the creative college office and then described the picture, and finally wrote their own opinions about the study here and the uncertain future.

For the third year, the requirement has changed again. Besides the personal files, reading article, creative story about students own major, students are asked to make out a creative story form 2 pictures in their trip to show their creativity in description. As for the fourth year, the requirement differed a lot from the previous ones, files were supposed to be shown online and then students would attend the "creative camp" to experience real creative activities. Students should have their websites which should have 5 articles about "how to know yourself and accept yourself" and "how to have the dialogue with this world". For the creative camp, they designed a series of activities to let students to sell themselves and to know themselves more. There was an inspector who would observe the students' creative ideas, communication ability and teamwork performance in whole process. And in addition to the jury's opinion, the final marks also included marks from the teaching assistant, the senior students and the applicants (Li Hui, 2014). Finally, the applicants can decide whether they would join in or not after the creative camp. From the number of applicants, we can see how popular this creative college was among the students.

Developed form the creative credit program, X Academy has been established since 2011. Combining the spirit of the traditional Chinese academy and the accommodation system of western university, they provide formal curriculum and informal curricula which enable students to learn through living life, to develop the implicit knowledge and emotional ethic. Living together in this creative environment, students attend interdisciplinary courses and activities which encourage both the teachers and students to think creatively. The qualified talents in the future must have the abilities to challenge the unknown, to imagine the future and the face the future.

So they used "X" as the name which means to pursue the educational creativity and vitality. And with rich resources from inside and outside of the university, both the academic community and the industrial community, X Academy has created a quite good and creative circumstance for students. As far as the creativity in students is concerned, the way of X Academy is much efficient than the credit program because students with various background live and study all together which provide them more chances to communicate with each other and to realize the difference from different views which is easy to spark creativity.

C. Curricula

In mathematical equations, the "X" is on behalf of the unknown. But in X Academy, X means emphasize much more on the "experience". With this in mind, the study here in designed as a process, "Faked Future → Conceptualizing → Modeling → Assessment", along with "Reflection" during the all process. Every subject is designed to involve more Students' participation and practice. There are 4 groups of curriculum offered by diverse colleges in NCCU, like College of Foreign Language, College of Law, College of Commerce, and so on. The first group is core curricula which teach students basic knowledge about creativity, for example the Introduction of Creativity. The second group is extended creative curricula which help students to have a deeper understanding of creativity, like "Question, Creative Ideas and Practice". The third group is creativity in profession, which encourage students to have creative ideas related to their own major, like "Governance of the Future City".

The last group is practice oriented which enable students to observe the surrounding environments and carry out their creative idea so they can experience the real innovation, like "X Program". Among all the courses, X Academy offers 3 compulsory courses and one selective course. The 4 courses are introduced as follows:

The first subject is "Service Learning Curriculum - Build Learning Circle in X Academy Life" which includes 3 main parts. Part 1 is animal zoo field study program in which students will collaborate with the animal zoo and solve problems after field study and observation. Part 2 is enjoying dormitory as home program in which students will clean and resign the dormitory according to the energy conservation and aesthetics. Part 3 is Creativity Laboratory designing program in which students offer their creative idea to make full use of the space in the art center.

The second subject is "Question, Creative Ideas and Practice". This course requires students to rethink how do they think, how do they feel, how do they experience and how do they imagine and try to evoke every individual's ability to express themselves in images, pictures, sound, body and abstract symbols. Therefore this course is conducted in different workshops, body workshop, sound workshop, words workshop, film workshop and picture workshop.

The third subject is "X Program" in which students have to solve the real problem with limited resources. During this process to solve the problems, students will learn how to use their creative idea, how to integrate the knowledge, how to work in team, how to make a program and carry out the program and finally evaluate the program. There are two parts -2 hours' theory lesson and 1 hour's workshop in each course. Students in different groups will go to different creative workshops and study under the teachers from the industry which provide students opportunities to experience how to generate creative idea, how to develop the idea and perfect the idea.

And the contents and forms in " X Program " are quite flexible and creative, which students and teachers often sit together and discuss what to do and then solve the problem and fulfill their tasks. Compared to the traditional study which focuses more on explicit knowledge, the study here emphasizes on the implicit, tacit and practical knowledge.

The fourth subject is "Communication, Collaboration and Leadership" which integrates the general education, professional education and creative experiments to develop students passion, courage, motivation and ability to face the future through learning in doing and help students to find their own small x and the collective big X.

The structure of curriculum in X Academy

Subject	Type	Credit	Brief introduction
Service Learning Curriculum	Compulsory course	0	Students in teams make and carry out the educational programs and academic programs
Question, Creative Ideas & Practice	Compulsory course	3	Teachers will lead students to explore themselves, think creatively, and solve problems. Different programs in different year according to the faculty and the social development.
X Program	Compulsory course	3	Different programs in different year according to the faculty and the social development. Students design and carry out the programs.
Communication, Collaboration& Leadership	Optional course	2	Students can only join in this course after election. They learn to communicate, collaborate and lead others through curriculum, living together and various programs.

There are many sub-programs in and students could join in different team according to they own interest and needs, like Comics publishing team, Lecturer recruit group, The field staff team, the life living team and the culture team.

5. Discussion

X Academy is the a experimental, multifarious, autonomous study platform where the students can find the passion for the themselves, their life, their profession and the world, where they can experience the fun in imagination, observation, generating creative idea, and practice innovation. Through the creative credit program and X Academy practice, NCCU has developed their own ways to cultivate students' creativity.

Leaders' support and integrated supporting resources

Leaders' support is the guarantee for the success of any program. The good achievement of creative education in NCCU, good names in the students and the society, cannot be achieved without the substantial support from the university leaders.

The creative college has changed the original art center in to the teachers' working place and students' classroom and activities space, and all the relevant teachers who can teach creatively or teach creative knowledge have been invited to cultivate creative talents. Besides, with the direction of the research achievements from the Center for Creativity and Innovation Studies, they developed the educational concept designed the curriculum. By mutual recognition of credits in other colleges, they have provided more courses which are good for fostering creativity. In a word, the creative college has made the full use of the university resources to provide a good environment.

Interdisciplinary faculty team

With the increasing globalization and the rapid development of technology, each individual is closely related to the world. In order to help the students to realize the connected, fast-changing, and complex world, and to develop their compatibility, insight, and multidisciplinary literacy which is quite necessary for creativity and innovation, the creative college has collaborated with teachers in the Center for Creativity and Innovation Studies, College of Law, College of Commercial, College of Communications, College of Foreign Languages, College of Education, Department of Advertising and Department of Journalism in NCCU to provide knowledge in different disciplines. Professors, vice professor, teaching assistants, and industrial experts in different fields teach here and share their real experiences in developing creative ideas and practice which greatly broaden the students vision and inspire the creativity sparks. Solid professional knowledge and skills plus a broad background of other knowledge will provide students a good basement for thinking creatively. Meanwhile, students have been gradually influenced by teachers' words, spirits and behaviors.

Innovative HR practices for student recruitment

Students who are admitted into the creative college come from different departments and grades and they have been selected after different creative tests. In order to select students who has creative potential, university needs creative tests or examinations allow students to show their creativity. In order to find out the potential creative talents, the creative credit program changed the requirement every year, from personal files and reflection on creative articles, to personal creative works and creative camp. And the judges with various backgrounds, including professors, teaching assistants and senior students, make the judgment more reasonable, acceptable and justice. To make sure all the students who are interested in this program can join in, they design the creative camp to let newcomers to experience the study here and then decide whether he or she is suitable to stay.

Take second year recruitment of X Academy for example. The applicants should to submit 3 files, "who am I", "the future tendency in my eyes", and "the must-do in NCCU". Based on the content and forms of their works, judgers marked the content integrity, students' expression ability, creative degree, and attitude toward tasks and then chose the potential ones.

Rich course contents focused on students' holistic development Courses provided by the Creative Laboratory or X Academy plus courses offered by many other departments in NCCU ensured the diversification of teaching content and the learning style. The curricula mainly includes 4 parts, core courses to learn creative basic knowledge and skills, extended creative courses to learn advanced creative knowledge, professional courses to bring out innovation related to students' majors, and practical course to allow students to practice their ideas in the real environment. Creative ideas might be too abstract to be touched, or taught. But they can be learned and experienced. So courses like Creative Credit Program and X Program actively construct creative and comfortable atmosphere and encourage students to experience.

Meanwhile, aimed to cultivate holistic person, the curriculum designed many sections, like teamwork tasks, to train students' responsibility, and the ability to understand, to communicate and to solve problems, and the heart to love and care about the outside world.

Facing the unknown world, students have to think wildly and creatively to find out where can innovations happen and they need a mood or a process to follow. As one graduate reflected about what he has learned here, he said he learned to think and to see things from different views. Most importantly, they learned to live in this world with being themselves, rather than just designation.

Teaching methods predicated on students' experience, interaction and teamwork

The creative education in NCCU considers innovation as the purpose, experiments as the motivation, imagination as the tool, and student-centered orientation as the core which help them succeed as a representative university in Taiwan. Courses here, especially "Questions, Creative ideas and Practices" and "X Program" emphasize students' participation, encourage students to learn in doing, provide opportunities for students to think bravely, to practice their ideas, to tolerate the obscure, to express themselves.

Future is constructed by doing rather than thinking. The study here is designed to meet the demand of future so students are encouraged to practice, to take actions to find their own future and the group future. X Program aims to assist students to explore them self and to find out their own future. In this course in the first year, students were divided into different working places, like sell stores, coffee shops, and bicycle fixing stores, to experience life in different field. Besides, they had to fulfill their tasks with their team and made a magazine to introduce them self which was documented as their products.

Conducive environment for creative learning

Humans are the product of the environment. Inspiring, creative, and comfortable atmosphere matters a lot to generate and develop the creative ideas. As the activity place for teachers and students to explore the creativity, the Creativity Laboratory is designed to respect students' need to create a comfortable home-like environment to attract everyone to create. Wooded floor classroom, well equipped kitchen, show platform are provided and no traditional classrooms which shows the human-oriented ideology. With wooden floor in classroom and activity place, students could take off shoes in class just like back at home. The well equipped kitchen gives students who like cooking to explore themselves and helps students to solve problems with current situation. While cooking and enjoying the delicious food, students communicate, discuss, and might create some new ideas. Teachers try to teach in a creative and comfortable way. For example, Professor Chen provides breakfast every Friday in her class in which all students sit comfortable and enjoy the "reunion food" as well as learn new things from the teacher.

Student's feedback

What is the outcome or achievement of the creative education in NCCU? Some may ask how many patents or corporate have they made. The chief leader and the designer of X Academy said "the authority of the judgments is with students, assistant teachers, professors and industrial experts who have been in our Creativity Laboratory, rather than me or the university". From the following feedback, we can imagine the positive influence that the students have got from this creative education. One student wanted to make the Creativity Laboratory more home-like place that students and teachers could enjoy fresh food right after class so he set up a creative food shop inside of the Lab after graduated from X Academy. Another student said besides the knowledge of creative think, he learn to solve problems with multiple solutions. Another one said they taught him to be honest and brave, "I have no money but I have the ability to solve problems which own to the teachers and experience here".

Limitations

Though this study uses the research methods of observation, interview and documents analysis, the research focus wasn't able to spend more time in different courses or workshops. With limited time spent in some lessons, the researcher might miss some other representative activities, and might constitute a biased, in-depth discussions during the writing of this paper deepened the understanding of the process of development. Confined by the research resource, this study did not tap on the role of teachers in creative education, what their characters are, how they design the class to make sure they can foster students' creativity, innovation or entrepreneurship as well as student/ graduate performance or outcome after receiving the creative educatIon. These can be achieved in future research.

Conclusion

Facing the background of constructing an innovative country and the fierce international competition for creative talents, countries like Brunei are in huge need for talents who is creative and capable to take actions. And since the high education has developed into the connotative development stage, we have to concentrate more on how to improve the teaching quality to educate high quality creative talents for which the practices in NCCU have setup a good example for us. Integrated supporting resources, interdisciplinary faculty teams, innovative HR practices for student recruitment, rich course contents focused on overall student development, teaching methods predicated on students' experience, interaction and teamwork, and conducive environment for creative learning will benefit the development of creative students.

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A Proposed Model of a Leadership Succession Plan

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***Abstract**: The cry for capable leaders is widespread. Today, companies and organizations are seeking to identify leaders who not only can improve productivity in the organizations but also can bring peace and prosperity. The issue then, is there a structure or system in place that plans for leadership succession? The paper presents a proposed conceptual model of a leadership succession plan which is developed based on existing literature and insights from the author. The model takes into account the processes which begins from the organizational level right up to the point where the potential candidate is assigned to a position in the organization. The proposed model may then be tested for its practicality and use in an organization. The paper also shares some initial findings collected from institutions of higher learning on leadership succession planning.*

1. REFESEARCH BACKGROUND

Human Resource Management has been around for a while. With it comes planning and recruiting human resource, improving their productivity, seeing to matters that relate to their well-being, and handling the exit process. This is the norm of any human resource practice. The order of the day is managing THE human resource – the plain employees.

However, with so much development happening in business: industry 4.0, blue ocean leadership, contingent workforce, and disruptive innovation, the focus now is on deciding who would be the best person to lead the organization. Are organizations ready to face these challenges? Are there capable leaders to see them through these volatile and fluid environment? In his discussion on succession planning, Rothwell (2010) noted that there are still problems with HR systems. Poor staffing, weak competency programs and insufficient technology support for succession remains in the system. Above all, leadership issues have been the mainstay of organizational problems and “a chronic crisis of governance” (Rothwell, 2010, p.xix) has yet to be resolved.

In a review of literature on succession plan, Lailawati and Abdul Rahman (2017) concluded that organizations demonstrate the lack of succession planning. Despite the need to ensure smooth transition of leadership in an organization, the process is still falling far behind. Combing through the various search engines for succession planning, much of the literature discussed Talent Management and Succession Planning as one of the same. Similar train of thoughts also goes with talent management and talent development. Researchers seem to equate succession planning with talent management, which the author believe that they are two different concepts.

Succession literally means “in line, subsequent, continuation” (Thesaurus, 2017). Merriam-Webster dictionary (2017) defines succession as “1) the act or process of following in order, 2) the continuance of corporate personality”. Shirey (2008) defines succession planning as a process which identifies and prepares suitable candidates to replace organizational leaders who retires. This is done through mentoring, coaching and job rotation. Rothwell (2010) on the other hand, suggests that succession planning and management should come hand in hand to ensure continuity in key leadership positions, where talented individuals are identified, retained and developed. In the context of Family-owned Business, Motwani, Levenburg and Schwarz (2006) describe succession planning as a process of passing over the business to another family member. Strategic Human Resource Planning suggest succession planning is about preparation and not preselection of individuals to fill a position. In a nutshell, much of the literature on succession planning is about identifying a potential person to replace someone who leaves an organization.

If the concept of succession planning is defined as such, there is not much difference between succession planning and recruitment or with training and development. A succession plan (as the name indicates) should plan out from the beginning of the succession pathway what exactly is needed to succeed. What is the basic platform to embark a succession trail, the roles that the successor need to perform and be accountable for, the competencies required for the roles and the match between the role and the successor? Having said that, there are a few notable succession planning models such as those by Groves (2007), Klein and Salk (2013) Lynn (2001), and Motor Carrier Passenger Council of Canada (2010).

With the questions asked, this paper intends to propose a Leadership Succession Plan which can later be tested in other research.

2. RESEARCH METHODS

Informants were selected from large universities in Malaysia. As this is an exploratory study to gauge the extent and the process of succession planning in Malaysian Higher Education Institutions, the research team decided to approach large universities bearing in mind that these universities would have better chances of having a succession plan as compared to the smaller ones. One large private university was also selected. A list of the large public universities in Malaysia was drawn and each university was requested for an interview with the top management. If the chosen university was not available, the next university in the list was contacted and the process continued. Other prominent scholars who can provide insights and experience on succession planning were also listed and chosen as informants. Based on a set of criteria, these informants were selected.

Ten informants were chosen to be interviewed. These informants comprise of prominent education scholars (three) and top public university management personnel (seven). The study sought to investigate how succession planning was done and the criteria in choosing potential leaders for the organization. Each interview lasted between 45 minutes to 90 minutes. A semi-structured interview was conducted where a series of questions were prepared to guide the interview. However, related questions were asked as the interview moved along to probe unclear responses.

The interviews were then transcribed. Data were coded and themes were drawn from the analysis. All the themes were distributed among researchers to ensure consistency in the coding and thematic extraction.

3. RESULT AND DISCUSSION

All the seven informants interviewed indicated that their university are in the process of developing a succession plan except for one who said that the university has one but at the time of the interview, the succession plan was not available. Other top management discussed on the characteristics of the potential successor.

One piece of interesting information stated by a prominent scholar was the revisit the concept of succession. The scholar argued that succession is not about succeeding the person who vacates the position but in fact succeeding the mission and vision of the organization.

A Proposed Leadership Succession Model

As intended by the author to capture insights and experience of top management on what is the model of succession planning available in Malaysian Higher Education Institutions, not much information was obtained. So based on the existing literature and author knowledge and experience in Human Resource Management, the model (Figure 1) below is proposed.

Phase 1 Core Business

Succession Planning begins with pinning down the organizational vision and mission.

A vision statement addresses the question of: what does the organization like to be seen in its future state, what is it going to be like? A mission statement would explain the organization/company reason for existence? What is its purpose? Once the vision and mission is clear and well understood, then comes the next phase, planning on how to achieve the vision and mission. For this, key functions, roles and positions are determined.

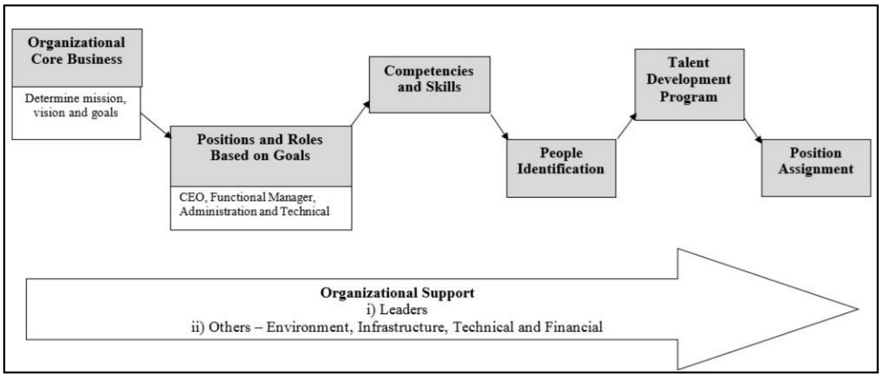

Figure-1: A Proposed Model of a Leadership Succession Plan

Phase 2 Determine Key Functions, Roles, and Positions

Key functions, roles and positions are determined to achieve the organizational goals and objective that were developed based on the vision and mission. An organization exists to achieve its vision, so goals are set to guide the mission. In order to achieve those goals, the organization has to decide the various functions that are responsible for the activities to be carried out. Based on the function, the roles and responsibilities of each personnel for each role will be determined and with such role and responsibilities comes the position.

Phase 3 Competencies and Skills

With each role and position comes the required competencies and skills. The organization would have to identify the required competencies and skills for a particular position so that whoever takes on the role would be able to execute the job and responsibilities effectively. That is, the job description and specification need to be specific and clear so that the person who holds the position would know exactly what they are expected to do and achieve.

Phase 4 People Identification

When the organizational structure, accurate assessment of required jobs and positions, together with the competencies and skills required have been determined, only then the organization would be able to identify candidates for the positions. Recruitment and selection done should bring in suitable candidates for the job. The potential candidate may not possess all the necessary competencies and skills but would be those whom the organization believe have the capacity and capability to perform the job. If the candidate lacks the required skills, the organization would organize a development program to groom these candidates.

Phase 5 Training and Development Program

Training programs are conducted to ensure that employees possess the necessary skills to perform their jobs. These programs are generally conducted for a specific group of employees or the general mass depending on the objectives of the training. Development programs on the other hand, are aimed at a particular group of employees whom the organizations have earmarked to be potential leaders of the organizations. However, employees who are seen have the capability to contribute further to the organization will also be developed.

Phase 6 Assign Positions

When all other components of the model have been successfully implemented, then comes the task of appointing a candidate for the specific position. Each leadership position should have general and specific criteria when choosing a candidate. Utilizing the pool of candidates already trained and developed during Phase 5, an organization would find ease in identifying a suitable candidate for a particular position.

The processes above would work well and be successful when the organization provides support to the effort. Top management together with HR department should be willing to spend time to plan the key succession activities especially during the earlier part of the Succession Plan. Where possible, financial resources, emotional support and time be given to the team who performs the succession planning and implementation.

4. Conclusion

In selecting who to recruit, one must be cognizant of the tacit knowledge and innate wisdom of those who have retired. Organizations need to tap into these abundance of knowledge reservoir which seemingly has been removed due to the retirement policy that calls for 60 years retirement age. With the increasing global mobility, talents are more difficult to capture. Talents are moving to where there are more pay and benefits and corporations and organizations need to compete for these talents.

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Moderating Effect of Switching Costs on the Antecedents of Consumer Behavioural Intention

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Abstract— The study investigates the moderating effect of switching costs on the relationship between consumer behavioural intention and its antecedents such as functional quality and technical quality with regards to retail banks in Nigeria. A sample of 800 bank customers was drawn from the selected banks operating in Kano metropolitan city of Nigeria. A multigroup analysis was employed using Analysis of Moment Structure (AMOS) software. The results revealed that switching costs have a significant moderating effect on the paths between technical quality, and behavioural intention. In contrast, switching costs do not have any significant moderating influence on the paths between functional quality and behavioural intention. As managerial and policy recommendations, managers should emphasise more on "what" is actually delivered to customers rather than the "how" or the process of delivery. Similarly, bank policy makers should deliver their services appropriately in such a way that customers perceive greater benefits than the sacrifices they made. Finally, directions for future research were discussed.

Keywords: Behavioural intention, Swicthing cost, functional quality, Technical quality.

INTRODUCTION

In the service sector moving from one service provider to the other involves efforts, time and money; thus these serve as constraints to customer behavioural responses. Similarly, switching costs are regarded as powerful marketing tool used in influencing consumer behaviour (Klemperer 1995). Interestingly, Zeithaml (1981) found that the effects of switching barriers are more prevalent in consumer services. Such findings according to Burnham, Frels and Mahajan (2003) constitute a general consensus that switching costs are important factors in understanding consumer intention. Some scholars such as Farrell and Shapiro (1988) observe that switching costs enhance price inelasticity, and so they have been considered as tools employed by service providers to generate profit. Furthermore, Chang and Chen (2007) observe that switching barriers include hard or soft benefits provided by the firm. Hard benefits are economic gains that customers receive while soft benefits relate to the customer's sense of 'special status' and recognition. They added that though various forms of switching barriers exist, some are more easily manipulated by the firm than others. Given these relationships it is vital for service providers to measure and monitor service quality and other antecedents of customer behavioural intention with a view to influence it.

Globally, there seems to be expansion of service companies and organizations. This rapid growth of service industry is however, not limited to the developed economies; developing countries are equally experiencing a similar trend. According to Malthora, Ulgado, Agarwal, Shainesh and Wu (2005) and Vijayadurai (2008) developing economies in Asia, Latin America and Africa also have rapidly growing service sector that significantly contribute to the size of their respective GDPs. For example, Thailand's economic survival is heavily dependent upon its tourism segment of the service sector (Nankervis, 2005). Given the above massive expansion of the global service sector, it is not surprising that it has attracted a lot of attention from both the researchers as well as industrialists.

Some studies (e.g. Aydin, Ozer & Arasil, 2005; Caruana, 2004; Chang & Chen, 2007; Colgate & Lang, 2001; Goode & Harris, 2007; Wong & Mula, 2009; Xavier, 2008; Shukla, 2009) investigate the relationships between switching costs and behavioural intention; however, very limited published research specifically probe the role of switching cost as a moderating variable in the studies conducted so far. For instance, in his study Patterson (2004) examines the effect of switching costs as potential moderators of the link between satisfaction and retention, and they eventually found that switching costs/barriers are important factors influencing a customer's decision to remain with a focal service provider. Wong and Mula (2009) also investigate the moderating effect of switching cost in the relationship between satisfaction and retention. Considering the foregoing and the price sensitivity of Nigerian customers, again it is expected that switching costs could moderate the relationship between service quality and customer behavioural intention in the Nigerian banking industry. Especially since the issue of service charges has been among the major concerns of bank customers in Nigeria (Anaro, 2009; Ochonma & Imoyo, 2008).

LITERATURE REVIEW

A. Behavioural intention

It is found that the consumer behavioural intention can be either favourable or unfavourable (Zeithalm, Berry & Parasuraman, 1996; Ladhari, 2009). While favourable behavioural intention often leads to being loyal to the services provider, increased volume of transactions, expressing positive wouth-of-mouth, and a willingness to pay price premiums. On the contrary, unfavourable behavioural intention leads customers to display higher probability of brand switching, plan to reduce their volume of business, engage in negative word of mouth, and display an unwillingness to pay high prices (Zeithalm et al., 1996). Consequently, researchers observe that financial success and future performance of organizations depends on the extent to which customers favourable behavioural intentions are fostered (Dabholkar, Shepherd & Thorpe 2000). In the same vein, Malhotra and McCort (2001) argue that eliciting a greater understanding of consumers' behavioural intentions continues to be a primary concern for marketing researchers. This is becomes obvious considering the frequency with which researchers have explored and modeled the antecedents of the behavioural intentions of consumers. Hence, customer perceived value, price and service quality have influence on customer bahavioral intention (Cronin, Brady & Hult, 2000).

B. Service Quality

Studies have established that perception of service quality is influenced by both functional and technical dimensions (Chau & Ngai, 2010; Kang & James, 2004; Gronroos, 1982, 1990, 2001; Lehtinen & Lehtinen, 1982; Parasuraman, Zeithmal, & Berry, 1985). According to Kang & James (2004) while functional dimensions of service quality focus on the service delivery process that is "how" the service is being provided, technical aspect focuses on the outcome quality of service delivery process that is "what" service is being provided. Hence, the process of quality evaluation occurs at the time when the service is being performed and is measured by the 5 dimensions of SERVQUAL instrument; on the other hand, technical quality evaluation takes place after service performance or rather the outcome of the service delivery. However, most of the research on service quality adopted SERVQUAL instrument which reflect only the functional dimensions of service quality and neglect the technical aspect (Gronroos, 1990; Kang & James, 2004).

C. Switching Costs

It has been established that service quality is linked to customer switching behaviour and other behavioural outcomes such as complaint and recommendation to others (Yavas, Benkenstein, & Stuhldreier, 2004). They found that different aspects of service quality seem to be related to different outcomes. For example, their research suggests that tangible elements of service quality are more closely related to positive word of mouth; while ''timeliness'' aspects of service quality are more closely related to satisfaction and switching behaviour. Probably, the fairly large number of studies in consumer switching tendency is due to its relationship with the behavioural outcomes. Several researchers investigated switching behaviour in a variety of ways (Grewal, Iyer, & Levy, 2004; Jones, Mothersbaugh, & Beatty, 2000; Zeithaml, 1981). Consequently, Goode and Harris (2007) observe that quite different terms have been used to descsribe the switching tendencies such as switching costs and switching barriers. To this end, Colgate and Lang (2001) consider switching costs as a category of a broader switching barrier. However, for the purpose of this paper the terms are used interchangeably.

While there is a general agreement of what switching costs are, its constituents are however, less definite (Caruana, 2004). For example, Jones et al. (2000) describe switching barriers as any factor that makes changing supplier (e.g. service provider) difficult or costly. Interestingly, Zeithaml (1981) finds that these switching barriers are likely to be even more prevalent in consumer services. On the other hand, Goode and Harris (2007) argued that switching costs are often portrayed as a loss of financially quantifiable resources and consist of a financial loss to the customer. According to Klemperer (1995) consumers who have patronised an organisation tend to face some costs for switching to another firm even if the two organisations offered similar product/services. Hence, he argued that switching costs arises from a consumer's desire for compatibility between his current purchase and a previous investment. Such costs may include; setting up the relationship, product/service usage and getting familiar with its features and psychological investment. In his study Patterson and Smith (2003) identify six switching barriers namely: search costs, loss of special treatment benefits, setup costs, risk perceptions, attractiveness of alternatives, and loss of social bonds. Similarly, Balabanis, Reynolds, and Simintiras (2006) itemised seven switching barriers in the online services. Notwithstanding the investments by the customer and the perceived switching barriers, some competitors offer incentives in order to attract potential customers.

HYPOTHESIS DEVELOPMENT

Similarly, there are a number of studies that investigate the effect of switching cost on behavioural intention; however, the concept has been tested with different set of variables in models that are although similar but different from the one focused in this study (e.g. Seo, Ranganathan & Babad, 2008; Aydin, Ozer & Arasil, 2005). Furthermore, Seo et al. (2008) drew the sample of his study from only one service provider and therefore, suggested that the result could be better reinforce with data from multiple service providers. Hence, this study investigates multiple retail banks in an attempt to fill in this methodological gap and thus, the following propositions are made:

H1 Switching costs moderate the relationship between functional quality and the customer behavioural intention in the Nigerian commercial banks

H2 Switching costs moderate the relationship between technical quality and the customer behavioural intention in the Nigerian commercial banks

The foregoing hypotheses propose the moderating effect of switching cost on customer behavioural intention. More specifically, it is proposed that the higher the switching costs the more unfavourable customer behavioural intention towards the bank.

METHODOLOGY

Since the research has to use perceptions and opinions of the target respondents, a descriptive survey design was employed. The total customer population of the selected clusters is one hundred and six thousand two hundred (106,200). Thus, using the table of sample size provided by Krejcie and Morgan (1970), a minimum sample size of 382 is required. However, to reduce sample size error and also to take care of the non-response problem, the sample size was doubled and rounded up to 800 (Hair, Wolfinbarger, & Ortinau, 2008). Furthermore, due to unavailability of sampling frame, convenient sampling technique was used to draw the respondents from the selected banks.

In order to test for the moderating effect, Multiple-group Structural Equation Modeling (MSEM) analysis using AMOS was employed. The moderating variable was recorded into a categorical variable consisting of two groups i.e. high and low as suggested by Hair, Black, Babin, & Anderson, (2010) and Byrne (2010). This has been used a lot in marketing research (e.g. Jaworski & MacInnis, 1989).

According to Im, Hong & Kang (2011) a common method of testing moderation is by enforcing a constraint for the path coefficient to the analysis. Hence, the following steps are observed in performing the test:

Step 1: Run the models for two groups (e.g. high and low) without any constraint (un-constrained model).
Step 2: Set the "equality constraint" that is running the model for the two groups while constraining one of the groups (constraint model).

Step 3: Compare the constraint and un-constraint models through the change in chi-square.

Step 4: If the test is step 3 is significant, then analysis the difference of each path coefficient. Meaning that, this step is only performed if there is a significant change in X^2.

RESULTS

Although, composite reliability is stronger than the Cronbach's alpha, in this study the latter was also assessed in order to complement the former. Cronbach's alpha reliability can be judged by some rule of thumb criteria: alpha coefficient of more than 0.90 is categorised as excellent, the coefficient that is greater than 0.80 is classified as good, the one that is greater than 0.70 is acceptable, while the alpha coefficient which is greater than 0.60 is questionable, the alpha level of greater than 0.50 is categorised as poor for scientific research and finally, the alpha coefficient that is less than 0.50 is generally unacceptable (John & Reve, 1982). Generally, Cronbach's alpha coefficient of 0.70 has been accepted as the minimum threshold for assessing reliability/internal consistency (Nunally & Bernstein, 1994). However, other authors like Hair et al. (2010) have recommended a lesser value of 0.60. From table 1 the values of Cronbach's alpha for this study is between 0.854 and 0.943 and therefore, going by the above rule of thumb it could be concluded that the scales for this study have a high reliability standard (Hair et al., 2010; Nunally, 1967; Sekaran & Bougie, 2010). Factor loadings for all the items which ranged from 0.502 to 0.889, Confirming that the indicators are strongly related to their various constructs and hence, an indication of construct validity (Hair et al. 2010).

Convergent Validity

In an attempt to establish construct validity for this research, convergent validity was examined using Average Variance Extracted (AVE) as recommended by Hair et al (2010). This test shows how indicators of construct converged and how they share common variance. In other words, the indicators should converge and share high proportion of variance on a common point, the latent construct. AVE is computed as the mean of variance extracted for the items loading on a construct. This computation can be done using the formula bellow with the standardized loadings:

$$\mathbf{AVE} = \frac{\sum_{i=1}^{n} L_i^2}{n}$$

Where: Li = standardized factor loading
i = number of items

So from the formula AVE is the average of completely standardized factor loadings. Hence, according to Hair et al. (2010) an AVE of 0.5 is a good rule of thumb indicating adequate convergence; while an AVE of less than 0.5 suggests that, on average more error remains than variance explained by the latent factor structure imposed on the measure. It is obvious from the table, that all the constructs exhibit acceptable level of AVE at > 0.5 minimum criteria. The values of the AVE range between 0.515 and 0.765.

Table 1: ***Constructs Validity and Reliability***

Constructs	*Items*	*Factor Loadings*	*Factor Loadings Squared*	*Average Variance Extracted*	*Composite Reliability*	*Cronbach's Alpha*
Functional Quality	Tan1	0.831	0.691	**0.609**	**0.959**	**0.943**
	Tan2	0.502	0.252			
	Tan3	0.777	0.604			
	Rel2	0.814	0.663			
	Rel3	0.731	0.534			
	Ass1	0.800	0.640			
	Ass3	0.778	0.605			
	Res1	0.746	0.557			
	Res2	0.780	0.608			
	Res3	0.822	0.676			
	Res4	0.822	0.676			
	Emp1	0.808	0.653			
	Emp2	0.760	0.578			
	Emp3	0.850	0.723			
	Emp5	0.824	0.679			
Technical Quality	Tech1	0.839	0.704	**0.690**	**0.899**	**0.943**
	Tech2	0.869	0.755			
	Tech3	0.837	0.701			
	Tech4	0.776	0.602			
	Pval6	0.826	0.682			
Switching Cost	Cost2	0.716	0.513	**0.596**	**0.855**	**0.854**
	Cost4	0.749	0.561			
	Cost5	0.805	0.648			
	Cost6	0.814	0.663			
Behavioural Intention	Wom1	0.889	0.790	**0.765**	**0.907**	**0.907**
	Wom2	0.868	0.753			
	Wom3	0.867	0.752			

Discriminant Validity

Discriminant validity assesses the extent to which a construct is truly different from other constructs (Byrne, 2010; Hair et al., 2010). Consequently, high level of discriminant validity suggests that a latent construct is unique and captures some phenomena which other constructs do not. Although, there are several ways to compute discriminant validity, a more rigorous method is to compare the AVE values for any two constructs with the square of the correlation estimate between these two constructs. The AVE should be greater than the square correlation estimate (Hair et al. 2010). Another way of doing this test is compare the square-root of AVE for a given construct with the absolute correlations of that construct and all other constructs. In either way however, the AVE must be greater than the construct correlation in order to establish discriminant validity (Fornell & Larcker, 1981). From the table 2 it is clear that all the square roots of AVE ranging between 0.739 and 0.874 are greater than the values of the constructs in the corresponding matrices. This therefore, indicates that each construct shared more variance with its items than it did with other constructs and thus, supporting discriminant validity correlation analysis was performed to establish association between the constructs under investigation.

		Tech	**Scost**	**Int**	**Fqual**
	SQUARE ROOT OF AVE	**.831**	**.772**	**.874**	**.780**
Tech	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	555			
Scost	Pearson Correlation	.425**	1		
	Sig. (2-tailed)	.000			
	N	555	555		
Int	Pearson Correlation	.590**	.561**	1	
	Sig. (2-tailed)	.000	.000		
	N	555	555	555	
Fqual	Pearson Correlation	.799**	.432**	.614**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	555	555	555	555

According to Mayer (1999b) relatively weak correlation of the range between 0.2 to 0.7 is sufficient enough to confirm the association between theoretically related constructs. From the above table 2, all the correlations between the variables are positive and significant at $p < 0.01$. It could also be seen from the same Table 2 that the correlations ranging between 0.425 and 0.799 are not weak and neither are they extremely strong (> 0.90) to indicate multicollinearity problem. The correlations are meaningful because construct that measuring similar phenomenon such as (functional quality vs technical quality) show relatively higher values.

$$\textit{Composite reliability}(\rho) = \frac{(\sum_i \lambda_{ij})^2}{(\sum_i \lambda_{ij})^2 + \sum_i \mathrm{var}(\varepsilon_{ij})}$$

Where:
λ_i = loadings of indicator *i* of a latent variable
ε_i = measurement error of indicator *i*
j = flow index across all reflective measurement model

Hypotheses Testing
From the AMOS output of multigroup SEM analysis under baseline model comparisons it was found that the ΔCFI between the unconstraint and constraints models for all the moderating variables (i.e. switching costs, individualism and uncertainty avoidance) is less than 0.01 and therefore passing the invariance test. The implication of this is that any subsequent changes in the multigroup models could be confidently attributed to the moderating effects of the variable under analysis. Hence, with the confirmation of invariance, the next logical step is to test the moderating effects.

	Model	X^2	Df	RMSEA	GFI	CFI	ΔX^2	Δdf	Critical Value	Sig
Basic model		921.164	419	0.047	0.9	0.960				
Moderating variables										
Costs	Un-constrained	1506.567	838	0.041	0.829	0.911				
	Constrained	1550.971	858	0.042	0.824	0.908	44.404	20	31.41	P < 0.05

Table 3: Test of Moderation Effect

Moderating Effect of Switching Cost
From Table 3 above it is clear that the X2 significantly changed from 1506.567 in the unconstrained model to 1550.971 in the constrained. The delta chi-square of 44.404 is greater the critical value of 31.41 and thus, considered significant at $p < 0.05$. Based on this result it could then be concluded that switching costs moderate the relationship between technical quality, perceived value and corporate on one hand and behavioural intention on the other hand. Furthermore, to evaluate the extent of significance between the groups of the moderating variable (high and low), the individual paths were analysed and the values compared (see Table 4 below). Hypothesis 1 which proposes that switching costs moderate the relationship between functional quality and behavioural intention was not accepted. This is because from the statistical results, the path between functional quality and behavioural intention is not significant in both the structural model and multi group analysis. Hypothesis 2 which states that "switching costs moderate the relationship between technical quality and customer behavioural intention" was accepted. Table 4 indicates that the moderating effect of high switching costs ($\beta = 0.411^{**}$, $t = 2.292$) is stronger than the influence of low switching cost ($\beta = 0.127$, $t = 1.221$).

Table 4: Comparisons of Path Coefficient and T-value (CR)

Hypothesis	Paths	Hi cost		Lo cost		Comparison
		Est.	t-val	Est.	t-val	
H1	Fqual → Int	0.009	0.072	-0.225	-1.259	H = L
H2	Tqual → Int	0.411**	2.292	0.127	1.221	H > L

*** p < 0.001, ** p < 0.05, * p < 0.1
H = High Switching Cost
L = Low Switching Cost

	Moderating Effects of Switching Costs	
H1	Functional Quality → Behavioural Intention	Not supported
H2	Technical Quality → Behavioural Intention	Supported

for High and Low Switching Cost

DISCUSSION OF FINDINGS

Moderating Paths
Moderating influence of switching costs on the relationship between the determinants of behavioural intention and customer behavioural intention

The objective of this paper is to examine whether or not switching costs could moderate the relationship between functional quality, technical quality, corporate image and perceived value on one hand, and customer behavioural intention on the other hand. To achieve this objective, four hypotheses have been proposed and tested as follows:

In an attempt to find out the moderating effect of switching costs on the relationship between functional quality and behavioural intention, first hypothesis "*switching costs moderate the relationship between functional quality and the customer behavioural intention in the Nigerian commercial banks*" was tested using SEM multigroup analysis. The result shows that switching costs does not exert any significant moderating effect on the relationship under examination. From the output of multigroup analysis, both the high switching costs and the low switching costs have insignificant and weak beta and t-values with respect the path under analysis. This result is however not surprising given the fact that the path from function quality to behavioural intention was not significant in the revised structural model.

Furthermore, in order to the assess whether switching costs moderate the relationship between technical quality and behavioural intention, hypothesis two "s*witching costs moderate the relationship between technical quality and the customer behavioural intention in the Nigerian commercial banks*" was tested using the out of multigroup analysis from

AMOS. As expected the results confirms that switching costs have significant moderating influence on the relationship in question. From the output, high switching cost has larger beta and t-values. This suggests that high switching costs exert greater moderating influence on the relationship between technical quality and behavioural intention. The implication of this finding is that since high switching costs has stronger moderating influence, meaning that when switching costs is high the relationship between technical quality and behavioural intention is stronger than when the switching costs is low. This corroborates Aydin et al. (2005) who found that the relationship between behavioural intention and its antecedent is stronger with high switching costs.

Theoretical Contributions

Given that virtually the studies reviewed which examine the moderating effect of switching costs, were conducted on other links different from the focus of this research. Consequently, the outcome of this research established that switching costs significantly moderate the causal relationship between technical quality and behavioural intention. The finding also confirms presumption that due to price sensitivity by the Nigerian retail bank customers, switching costs would have moderating effect on customer behavioural intention. To this end, this finding is hoped to have significantly contributed to marketing theory.

Conclusion

Based on the foregoing research findings, the conclusions of this study are itemised as follows:

That the scale used in the research is valid and reliable. This is evident from the acceptable values obtained in terms of: Discriminant and Convergent validity, Composite and Cronbach's Alfa reliability.

That switching costs have significant moderating influence on the relationship between technical quality and behavioural intention. Furthermore, high switching costs have stronger moderating effect on the relationship than low switching costs. On the contrary, switching costs do not have any significant moderating influence between functional quality and customer behavioural intention.

Managerial & Policy Recommendations

Moreover, from the empirical findings it has been discovered that switching costs positively affect the relationship between technical quality and behavioural intention. This finding further suggests that the effect of high switching costs is stronger on the relationships than the effect of low switching costs. Based on this therefore, the marketing executives and policy makers should strategies their marketing programmes in such a way that customer would relatively perceived high switching costs with regards to the bank's service being delivered.

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Consumer Purchase Intention Towards Luxury Handbag Brands

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Abstract: This paper investigates consumers´ purchase intentions towards luxury handbag brands. Specifically, functional value and social value will be used to predict consumers´ intentions to purchase luxury brand handbags among Kota Kinabalu, Malaysia consumers. Self-administered questionnaires will be distributed to shoppers based on convenience sampling in selected major shopping malls in Kota Kinabalu, Malaysia. Smart Partial Least Squared (PLS) version 3.0, a Structural Equation Modeling (SEM) technique will be used to analyze the data. Results are expected to indicate functional value and social value influences on Malaysian consumers' purchase intention for luxury goods. Appropriate marketing strategies to influence consumers' purchase intention towards luxury handbag brands will be further proposed.

Keywords: purchase intentions, luxury brands, functional value and social value.

Introduction

Generally, something that is associated with rich and affluent, and anything that beyond the bare necessities of an individual is defined as luxury (Ward and Chiari, 2008). People purchase and adorn luxury handbag brands to portray and display social status, conspicuousness, to create self-identity, self-esteem, or merely the satisfaction of a superior quality and the need of uniqueness by owning such luxury handbag brands. Today, the luxury goods market has grown rapidly (Kapferer, 2001) not withstanding developing countries such as Malaysia. This includes luxury handbag brands such as Louis Vuitton, Prada, Coach, and Michael Kors to name a few. According to Wilcox et al (2009), those who pay more attention to their image and self-presentation motivate them to consume luxury brand because it portrays their upscale image, social hierarchy and prestige of the individual. As stated by Ward & Chiari (2008), the crave for luxurious supplies is linked to cultural and physiological needs which constantly changing. Meanwhile, Chada and Husband (2006), redefine social position and identity whereby Asian people are more likely to own luxury brands. Culture influences the dominance any of one of these reasons for luxury handbag brands purchased and women who have high purchasing power income, who work in the urban area are more likely to purchase luxury goods of a famous brand (Nia & Zaichowsky 2000). There is numerous research conducted in Peninsular Malaysia with regards to intention to purchase luxury handbag brands. These studies were conducted among shoppers in major high-end shopping malls in Kuala Lumpur, Malaysia (Mohd Noor et al., 2016; Lim et al., 2012), generation Y (Kasuma et al.,2016), and public (Tatt et al., 2010). Among predictors used in previous studies include functional value, experiential, social influence, income, financial value, social values, emotional individual value, price, perceived quality, perceived societal status and brand loyalty.

However, as far as the researcher's knowledge, similar studies have yet to be done in Sabah, Malaysia context and filling this research gap is the agenda for the researcher. Specifically, the purchase intention of consumers towards luxury handbag brands in Kota Kinabalu Sabah Malaysia is examined to determine factors influencing consumers to purchase luxury handbag brands. This study is expected to further enhance understanding and add into the literature on related to consumers' purchase intention as well as suggesting effective marketing strategies for relevant industries.

Problem Statement

Counterfeit goods have ballooned into a global industry worth as much as $461 billion hence becomes a significant threat of economic that hampers the growth of economic and undermines innovation (Organization for Economic Co-operation and Development report, 2016). In 2008 alone, it is estimated 1.9%, counterfeit trade equivalent to Austria's economy which amounted 2.5% of world trade. The most imitated luxury handbag brand was Louis Vuitton as shown in global data on customs seizures (based on the report, "Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact", 2014). Ultimately, diluting the original luxury handbag brand and ripping off their intellectual property harms the original luxury handbag brand firms.

Hence, with the increasing counterfeit issues, it is imperative for producers to seriously consider ways to gain and strengthen consumers' loyalty for luxury handbag brands. In other words, producers of luxury handbag brands must translate deeper values of luxury handbag brands. In the literature, there are several studies on consumers' motives for purchasing luxury brands. Among others, high quality has been found as one of the motives for consumers in purchasing luxury brands. Consumers expect a luxury product to be functional, of good quality, and unique enough to satisfy their need for uniqueness (Wiedmann et al., 2009; Shukla (2012); Gentry, Putrevu, Shultz, and Commuri, 2001). Apart from that, the element of uniqueness is also a motivation for consumers to purchase luxury brands. For instance, past studies found that possessing luxury brands is seen to upscale image, social hierarchy, prestige of the individual as well as establishing a unique personal identity. as a tool to convey uniqueness as it is inherently scarce due to their high price and restricted distribution (Wilcox et al, 2009; Parket al.,2008; Vigneron & Johnson, 2004). The crave for luxurious supplies is not only linked to our physiological needs but also related to cultural needs that change according to the era in which we live in (Ward & Chiari, 2008). For instance, Asian people are more likely to own luxury brands to redefine their identity and social position (Chada and Husband 2006). Culture influences the dominance of any one of these reasons for luxury handbag brands purchased and women who have high purchasing power given that they have earned their own income, who working in the urban area are more likely to purchase luxury goods of a famous brand (Nia & Zaichowsky, 2000).

Based on the above discussion, there are many possible factors which may influence consumers to purchase luxury handbag brands. To further understand consumers' purchase intention on luxury handbag brands, this study seeks to examine the most prominent factors that lead consumers to purchase luxury handbag brands. Specifically, this study considers the effects of two values namely functional value and social value towards consumer purchase intention and thereafter to further suggest effective marketing strategies for marketing luxury handbag brands.

Research aim and objectives

This research aims to investigate the potential factors that influence the intention of consumers in Kota Kinabalu Malaysia to purchase luxury handbag brands. Hence, the research objectives are as follows:

1. To identify the relationship of functional value with consumer's purchase intention towards luxury handbag brand.
2. To identify the relationship of social value with consumer's purchase intention towards luxury handbag brand.

Hypotheses

H1: There is a relationship between functional value and consumer purchase intention towards luxury handbag brands.

H2: There is a relationship between social value and consumer purchase intention towards luxury handbag brands.

Significance of study

There are three significance of this study which are contribution to the body of knowledge (as a reference to the researchers in terms of theory and methodology), practical implications (to practitioners especially business owners/producers), and implications to the policy makers (government, government agencies).

Dependent Variable and Independent Variables

The dependent variable is consumer purchase intention towards luxury handbag brands. Meanwhile the independent variables are functional value and social value.

Functional value refers to the superior quality which is the product's core benefits. In general, a product or service is designed to provide a particular function (Wiedmann, Hennigs & Siebels, 2009). In this luxury handbag case, it is in terms of the sewing, materials and design of the products.

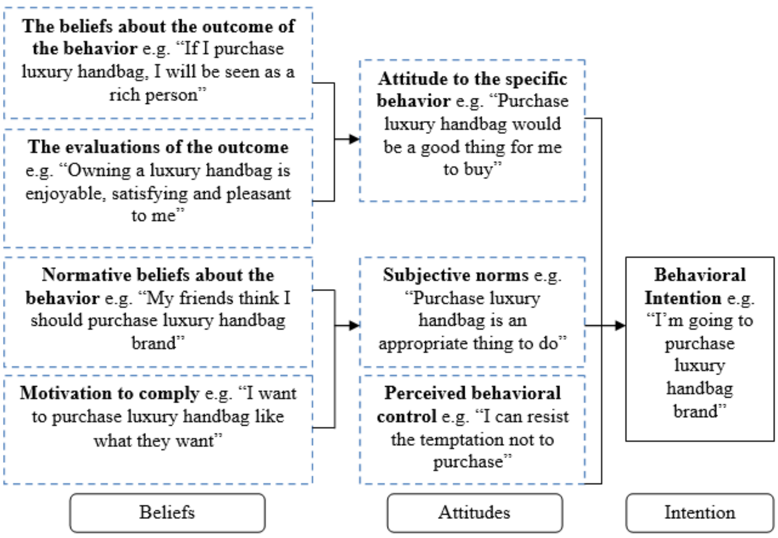
Social value represents the social status and conspicuousness. The social and cultural context category includes factors such as cultural norms (Franses & Lede, 2015) or the extent to which the brand fulfills social goals, as well as the influence of family and friends (Prendergast et al., 2002 and Wilcox et al., 2009).

Literature Review

Underpinning theory – Theory of Planned Behavior

The Theory of Planned Behavior is perhaps the most influential theory in the prediction of social and health behaviors" proposed by Rivis et al. (2009, p. 2985). According to Chen, 2016; Han et al., 2010; Kim et al., 2013; Yadav and Pathak, 2016, a field of ecological behavior has been successfully applied the theory of planned behavior. Ajzen (1985) argued within the TPB model that the perceived behavioral control, subjective norm and attitude affect intention, which in turn affects real behavior. On the other hand, as defined by Ajzen (1991, p. 188), the perceived behavioral control means “the difficulty of performing the behavior or the perceived ease”, subjective norm means “the perceived social pressure to perform or not to perform the behavior” and attitude toward the behavior refers to “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question”. In this study, this is how the researcher adapts the theory of planned behavior as shown in table below:

Figure 1: Theory of Planned Behavior
Theory of planned behavior adapted for this study. Adapted from the study of Mummery and Wankel (1999).



In this current study, the belief about the outcome of the behavior is belief about the likely consequences of the behavior. It means, it is when a consumer believes what will happen if luxury handbag is purchased. For example, “If I purchase luxury handbag, I will be seen as a rich person”.

The evaluation of the outcome is the value attached to a behavioral outcome or attribute which is the positive or negative judgments about features of the behavior. It contributes to attitude along with behavioral beliefs. It means, when a consumer evaluates what will happen if luxury handbag is purchased. For example, “Owning a luxury handbag is enjoyable, satisfying and pleasant to me”.

Normative belief about the behavior is individuals' beliefs about the extent to which other people who are important to them think they should or should not perform particular behaviors. It means, when a consumer believes about the expectation of others. For example, “My friends think I should purchase luxury handbag brand”.

Motivation to comply is motivation to do of what salient referents think an individual should do. It contributes to subjective norms along with normative belief. This means, a consumer tends to purchase the luxury handbag is because of the influence of people around. For example, “I want to purchase luxury handbag brand like what they want”.

Attitude to the specific behavior refers to a mental state involving beliefs, feelings, values, and dispositions to act in certain ways. It is a function of the individual's belief about the behavior (behavioral beliefs). It is also the individual's beliefs about the outcomes of performing the behavior (evaluation of behavioral outcomes). For example, “purchase luxury handbag would be a good thing for me to buy”.

Subjective norm is an individual's perception of social norms or his/her peers' beliefs about a behavior. It is a function of an individual's normative beliefs and motivation to comply with beliefs. For example, “purchase luxury handbag is an appropriate thing to do”.

Perceived behavioral control is an individual's perceived ease or difficulty of performing the particular behavior. It is assumed that perceived behavioral control is determined by the total set of accessible control beliefs. For example, “I can resist the temptation not to purchase”.

Last but not least is behavioral intention is an indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior. It is based on attitude toward the behavior, subjective norm, and perceived behavioral control, with each predictor weighted for its importance in relation to the behavior and population of interest. For example, “I’m going to purchase luxury handbag brand”.

The relationship between functional value and consumer purchase intention towards luxury handbag brands

Functional value refers to the superior quality which is the product's core benefits. In this research, quality value will be the main dimension of functional value.

Quality
According to Vigneron and Johnson (1999), consumers for luxury products have an inclination to compare luxury and non-luxury goods such as technology, craftsmanship and so on. In general, a product or service is designed to provide a particular function (Wiedmann, Hennigs, & Siebels, 2009). Quality and usability are the aspects of a product functional value. The fundamental characteristics of luxury products are of high quality (Quelch 1987). This functional value represents the perceived utility of a product characteristic; it refers to basic product benefits, such as quality, uniqueness, usability, reliability, and durability (Sheth, Newman, & Gross, 1991). Customers purchase luxury product because of the quality and performance, which are better than those of non-luxury products (O'Cass and McEwen, 2004). Consumers expect a luxury product to be functional, of good quality, and unique enough to satisfy their need for uniqueness (Wiedmann et al., 2009). Particularly in developed markets, consumers purchase luxury products, for their quality and functional values (Shukla, 2012). Gentry, putrevu, Shultz, and Commuri (2001) found that the main reason why consumers buy luxury brands is due to their high quality.

In a luxury product, quality is one of the functional aspect and basic benefits that can be seen. The consumers of luxury brand believe that high quality is possessed by luxury brand. Cesare and Gianluigi (2011) believed that quality is the main attribute that relative to luxury goods, followed by craftsmanship, design, and aesthetic value. High quality is one the main attribute that differentiate luxury brands apart from non-luxury brands. The quality of the luxury product should meet the consumer's high level of satisfaction since high quality is associated with a high price (Bian & Moutinho, 2009). Technology also helps in producing quality handbags that made up of quality materials.

According to Cordell et al., 1996; Bian and Veloutsou (2007), to gauge the performance and the functionality, certain products can be tried to encourage the willingness consumer to purchase. While, according to Orth, McDaniel, Shellhammer, & Lopetcharat (2004), it is perceived that the quality of the brand represents buying products with established brand name.

In previous studies, superior service quality is found to have a positive effect on customer satisfaction and behavioural intention, and many service firms in the private sector have used service quality to differentiate themselves from the opposition (Tam, 2000). Quality is one of the items in this functional value variable. Berthon (2009) also laid out at least three motivations for luxury brands purchase namely experiential, symbolic and functional. Therefore, based on previous research of purchase intention, which means, it is postulated that there is a positive impact of functional value and consumer purchase intentions towards luxury handbag brand.

The relationship between social value and consumer purchase intention towards luxury handbag brands

Social value represents the social status and conspicuousness by owning the luxury handbag brand. There are three elements that customers gain when buying luxury products such as perceived conspicuous value, perceived social value, and perceived quality value (Vigneron and Johnson, 1999). In this research, social status and conspicuous will be the main dimensions of social value.

Social status
According to Han et al. (2010), some consumers are called "poseurs" (p.17), which is the French word for a "person who pretends to be what he or she is not". These people are highly motivated to purchase luxuries for the sole purpose of status. According to Eastman et al. (1999,41), status may be defined as "the motivational process by which individuals strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolize status both for the individual and surrounding significant others". While, O´Cass and McEwen (2004) define status consumption as "the behavioral tendency to value status and acquire and consume products that provide status to the individual" and conspicuous consumption as "the tendency for individuals to enhance their image through overt consumption of possessions that communicate status to others". D'Astous and Ahmed (1999) argue the social value impact when consumers purchase the luxury products expecting that they can improve their self-status.

Social influence positively influences the willingness to buy luxury brands (Cheah et al, 2005). However, to assume that only the wealthy are prone to status consumption is inaccurate (Freedman, 1991; Miller, 1991; Eastman et al, 1997; Shipman, 2004). It is because according to Wilcox et al (2009), those who pay more attention to their image and self-presentation motivate them to consume luxury brand because it portrays their upscale image, social hierarchy and prestige of the individual. The level of prestige is associated with social status (Maiese, 2004). Some bottom-tier consumers want to buy luxury brands so they will appear to be wealthy people (Ordabeyeva & Chandom, 2011). Eastman, Goldsmith and Flynn (1999) identify status as the process by which individuals purchase luxury products in order to enhance their social image. Smith (1759) believed that the need for social status as what led people to display their possessions and consume conspicuously (Majic & Majic, 2011). Conspicuous brands are those that are purely bought to signal wealth (Amaldoss & Jain, 2005), while status brands can be described as brands that are purchased to impress others (Husic & Cicic, 2009). The traits and features of luxury brands have strong power of providing vanity sense to the consumers indicating that vanity is a psychological construct that describes a person's excessive concern with physical appearance or achievement (Durvasula et al, 2001). To some extent, conspicuous consumption has increased among bottom-tier consumers (Ordabeyeva & Chandom, 2011). An extent research has confirmed that the purchase intentions of consumers towards luxury brands promoted by their self-presentation attitudes as the symbol of social status and prosperity (Park et al., 2008). While, according to Van Kempen (2004), the premium brands bought by consumers have a strong self-presentation attitude which for their symbolic values. Thus, successful self-presentation strengthens the emotional rewards from possession and use of luxury brands by conveying one's status and garnering esteem, (Lee et al., 2008; Vigneron & Johnson, 2004).

According to Bain & Co. (2005), for the purchase of luxury brand products, consumers emphasize more on emotional benefits than on the physical attributes for the purchase. Choo et al. (2012) suggest, in terms of ownership and consumption, the emotional benefits create a comprehensive and memorable experience. Therefore, to build a long-term and sustainable customer relationship, luxury brand marketers are capitalizing more on emotional attachment (Orth et al., 2010).

Conspicuous

Conspicuous value is the second dimension of social value. As stated earlier, conspicuous consumption and status consumption have strong relationship which is related with each other. They are related each other in terms of the motivational behavior of consumer towards the luxury handbag brand. However, each construct is unique and has distinctive characteristics that attract the consumers (O'Cass & McEwen, 2004).

Berger and Ward (2010) and Han et al. (2008) focus on conspicuousness which is another key characteristic of luxury brands that indicates the extent to which a brand is visibly marked by other people. Meanwhile, this notion of visibility as well as the cognitive and affective bond that connect the brand to the consumers has been defined as brand prominence (Park et al., 2010). Conspicuous consumption not only encourages consumers to consume luxury products that appear to others but also promotes the brand's prominence, which is defined as "the extent to which a product has visible markings that help ensure observers recognize the brand" (Han et al., 2010). For example, a woman might purchase a luxury handbag but has an old dishwasher from a little-known brand at home simply because the dishwasher does not appear in public (Yajin & Griskevicius, 2014). When people purchase luxury product conspicuously, they are sending the status signal to others in society (Veblen 2009). As a conspicuous consumption to be visibly apparent, a consumer purchases recognizable brand for instance, a lady carrying a Gucci handbag, which is worth $695, can project something different about her social standing than a lady carring a Coach bag worth $268 (Han, Nunes, & Drèze, 2010). Han et al. (2010) showed that people with a high need for status and a desire to be associated with the upper class are more likely to consume luxury products with a visibly apparent and recognizable brand. Moreover, Mason (1981) argues that the satisfaction of customers from conspicuous consumption is displayed wealth, not necessarily the quality of the goods.

Previous researchers have shown that social value is one of the prominent values explored by Hennigs et al. (2012) which are financial value, functional, social and individual value. While, in the previous study done by Tagreed Abalkhail "An assessment of values concerning luxury brand purchase intention: A cross-culture comparison" also shown that social value is one of the prominent values which explored by the researcher which adapted from Hennigs et al (2012) as well. Therefore, based on previous research of purchase intention, which means, it is postulated that there is a positive impact of social value and consumer purchase intentions towards luxury handbag brand.

Research Methodology

This survey will be conducted among the respondents patronizing major shopping malls in Kota Kinabalu. Specifically, this research is focused on consumers who have previously purchased luxury handbags hence screening question is placed on the front page of the questionnaire.

The targeted respondents in this study are 200 respondents comprised shoppers patronizing major shopping malls in Kota Kinabalu, Sabah. According to Malhotra (2007), 200 respondents are the minimum numbers of respondents that are required in this study, for a problem-solving research study. Hence, 200 respondents are deemed sufficient to be the sample for this study since this study is a marketing problem-solving research.

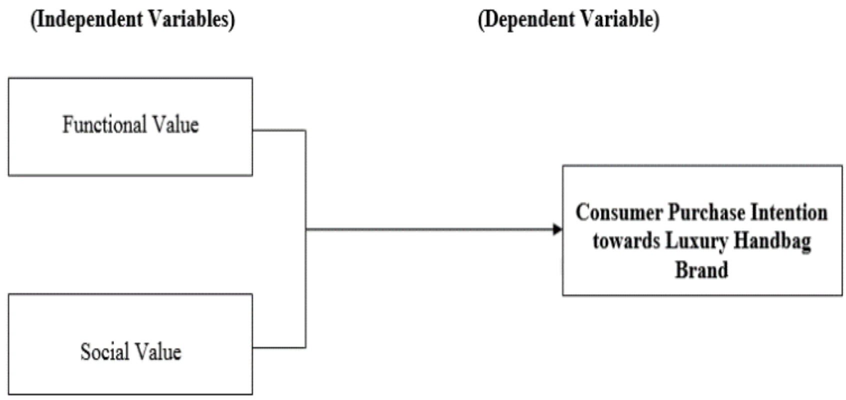


Figure 2: Theoretical Framework

Adapted from: Hennigs, N., Wiedmann, K., Klarmann, C., Strehlau, S., Godey, B., Pederzoli, D., & ... Oh, H. (2012). What is the Value of Luxury? A Cross-Cultural Consumer Perspective. Psychology & Marketing, 29(12), 1018-1034.

Theoretical Framework

Figure above shows the research frame work of the study where the components of luxury values (social value and functional value) are predicted to influence consumers' purchase intention towards luxury brand handbags.

Conclusion

Outcomes of this study are expected further enhance the current understanding on effects of functional value and social value to the consumers' purchase intention towards luxury handbag brands. Apart from that, further suggestions for marketing strategies to producers and retailers can be provided as well as adding to the current literature on consumers' purchase intention.

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Perceived Service Quality of Public Organisations and Government-Linked Companies in Brunei Darussalam

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INTRODUCTION

Brunei Darussalam, a nation reliant on the hydrocarbon industry that contributes more than 60 percent of GDP and 90 percent of total export (OECD, 2013), faces government budgetary cut recently as a result of the recent drop in oil prices (Oxford Business Group, 2017). Her dependent on oil and gas has led to a large public sector (OECD, 2013), and the Brunei Government has initiated plans and resources to diversify the economy. Economical diversification plans have led to some public organisations to be partially owned by the government, yet operate like companies in the private sector.

Improving performance-driven services for public organisations began to receive attentions due to cuts in government spending and increased pressure by the public (Coplin, Merget & Bourdeaux, 2002). Public organisations (also known as state-owned enterprise, SOE) and government-linked companies (GLC) are not immune from continuous calls for better service delivery to users of their services. Additionally, improving public services are prioritised by many governments to meet demands from different customer groups (Carvalho & Brito, 2012). Wisniewski and Donnelly (1996) pointed on the need for meaningful performance criteria for public services, in order to improve service delivery.

With emphasis on importance of quality service delivery by public institutions, it is timely to examine the Brunei public's perception of public services. It was reported that "the public care more about quality of provision than who provides their services" (Gash et al., 2013, p.21) which makes it important to gain insights into how public organisations perform in the eyes of their customers. Therefore, the aim of this paper is to examine customers' perceived service quality of public organisations and government-linked companies in Brunei. The paper uses SERVQUAL as a tool to investigate the gap between customers' perceptions of the service received by a service provider and their expectations of a service provider. Many studies have assessed SERVQUAL in the private sector, compared between different service industries, and across different countries. Few studies have applied SERVQUAL in the public sector, but there is scarce research comparing perceived service quality between state-owned enterprise and government-linked company. This study is the first to examine perceived service quality of both types of institutes in Brunei.

LITERATURE REVIEW

Service quality and public organisations

Zeithaml, Parasuraman and Berry (1990) defined service quality as customers' perception of how well a service meets or exceeds their expectations and it is judged by customers, not by organisations. The interactive nature of service process results in consumers' evaluation of quality immediately after the provision and performance of that service (Douglas and Connor, 2003), implying that due to inseparability at point of consumption, it becomes more critical to ensure that service delivered meets the receivers' expectations.

To improve customer service of public organisations, operating in a competitive environment may improve the performances of public services. However, public organisations are slow to adapt to quality approaches as budgetary resources are often not linked to performances (Brysland & Curry, 2001). Nonetheless, quality management approaches are pursued to enhance efficiency and effectiveness of public services. Brysland and Curry (2001) assert that measurement allows organisations to compare before and after changes are made to services delivered, and to allow organisations to identify specific areas that require immediate attention. Some studies have examined service quality in the public sector setting (e.g. Carvalho & Brito, 2012; Chingos, Henderson & West, 2012; Donnelly et al., 1995; Wisniewski, 2001; Wisniewski & Donnelly, 1996), and in general concludes that quality measurement system provides indication for areas that require attention in public services.

Some tools have been developed to measure service quality, but SERVQUAL instrument developed by Parasuraman, Zeithaml and Berry (1988) remains as the most widely used tool and have undergone extensive validation as a measurement tool of service quality.

Parasuraman et al. (1988) identified five broad dimensions that explains service quality of organisations; and these are: (1) *Reliability* (the ability to perform the promised service dependably and accurately), (2) *Responsiveness* (willingness to help customers and provide prompt services), (3) *Assurance* (knowledge and courtesy of employees and their ability to convey trust and confidence), (4) *Empathy* (caring and individualized attention provided to the customer), and (5) *Tangibles* (appearance of physical facilities, equipment, personnel and communication materials). SERVQUAL informs managers on customers' experience with a service provider (perceived service quality) and the level of service they desire from the service provider (expected service quality) (Donnelly et al., 1995). SERVQUAL is an appropriate instrument to assess service quality of public organisations, as it is adaptable to a range of services (Wisniewski & Donnelly, 1996).

Table 1: Reliability analyses for the SERVQUAL items in this study

Expectation	Cronbach's alpha	Perception	Cronbach's alpha
Tangibility (E1-E4)	0.793	Tangibility (P1-P4)	0.808
Reliability (E5-E9)	0.894	Reliability (P5-P9)	0.905
Responsiveness (E10-E13)	0.868	Responsiveness (P10-P13)	0.892
Assurance (E14-E17)	0.855	Assurance (P14-P17)	0.871
Empathy (E18-E22)	0.858	Empathy (P18-P22)	0.886

METHODOLOGY

Parasuraman et al.'s (1998) SERVQUAL instrument that consists of 22 items, related to the five dimensions was used by this study. A set of questions was adapted to measure customer expectations (E) of general attributes of service organisation, and another set was used to measure customer perceptions (P) of the actual service quality of a specific service provider. Respondents were asked to rate the 44 statements along a seven-point Likert scale ranging from 1 = strongly disagree to 7 = strongly agree. The dimensions illustrate good reliability with cronbach's alpha above the recommended level of .7 (Refer Table 1).

The organisations used in this study were a public hospital, a government-linked hospital, a public university, a government-linked airline carrier, and two government-linked telecommunication providers. A questionnaire was administered to the public residing around Bandar Seri Begawan, the capital of Brunei Darussalam. Respondents were approached by five research assistants, who requested them to rate one of the public or government-linked organisations along the various items related to their expectation and perception of service quality for that service provider. The respondents are users of the identified service organisations, and they were thanks for their participation in the survey, after answering the questions. A total of 732 valid questionnaires were collected, which were subsequently entered into SPSS for analysis. Descriptive statistics analysis was used to compute respondents' expectation and perception scores of a service provider, as well as, a gap analysis to determine areas that require attention of the public service organisations.

FINDINGS

Table 2 illustrates respondents' ratings of perception of service delivery of the six service organisations, their expectations score for a service in general, and the gaps between their perceptions and expectations, along the five SERVQUAL dimensions. The results show that, in general, respondents' expectations for services exceed their experiences with a service provider. As a whole, respondents hold highest expectations on services of airline carrier ($\bar{x}$ = 6.474), followed by university ($\bar{x}$ = 6.19), telecommunication provider ($\bar{x}$ = 6.173) and hospital ($\bar{x}$ = 6.01). On the other hand, a government-linked hospital received the highest score on perception ($\bar{x}$ = 5.203), while a local public hospital was rated the lowest for their service quality ($\bar{x}$ = 3.927). The government-linked hospital has the lowest mean gap score ($\bar{x}$ = -.75), while the gap between perception and expectation for the public hospital was the largest ($\bar{x}$ = -2.139).

Table 2: Mean scores for service quality dimensions of public organisations and government-linked companies

		Perception (P)	Expectation (E)	Gap (P-E)
GL Telco 1	Tangibles	4.7152	6.0761	-1.361
n=115	Reliabilities	4.2865	5.9826	-1.696
	Responsiveness	4.4645	6.1283	-1.664
	Assurance	4.7870	6.2652	-1.478
	Empathy	4.5113	6.0870	-1.576
	Mean	4.5529	6.1078	-1.5549
GL hospital	Tangibles	5.4545	5.8719	-0.417
n = 121	Reliabilities	5.1802	5.9372	-0.757
	Responsiveness	5.1529	5.9236	-0.771
	Assurance	5.1426	6.0599	-0.917
	Empathy	5.0843	5.9719	-0.888
	Mean	5.2029	5.9529	-0.750
Public hospital	Tangibles	4.0873	5.9848	-1.808
n = 126	Reliabilities	3.9000	6.0111	-2.111
	Responsiveness	3.8611	6.1528	-2.292
	Assurance	3.9484	6.1786	-2.230
	Empathy	3.8349	6.0889	-2.254
	Mean	3.9263	6.0652	-2.1389
GL airline	Tangibles	4.5000	6.4466	-1.947
n = 131	Reliabilities	4.6672	6.4962	-1.829
	Responsiveness	4.7290	6.5000	-1.771
	Assurance	5.0134	6.5782	-1.565
	Empathy	4.6473	6.3481	-1.701
	Mean	4.7114	6.4738	-1.7624
GL Telco 2	Tangibles	4.8354	6.0646	-1.229
n = 120	Reliabilities	4.2767	6.5300	-2.253
	Responsiveness	4.4854	6.3188	-1.833
	Assurance	4.4729	6.2500	-1.777
	Empathy	4.3883	6.0250	-1.637
	Mean	4.4918	6.2377	-1.7459
Public university	Tangibles	4.4244	6.1345	-1.710
n = 119	Reliabilities	3.6202	6.1714	-2.551
	Responsiveness	3.8592	6.2626	-2.403
	Assurance	4.5315	6.2143	-1.683
	Empathy	4.0487	6.1664	-2.118
	Mean	4.0968	6.1898	-2.0930

Findings also revealed that the largest gap score exists in the reliability dimension for GL Telco 1, 2 and the public university, assurance for the GL hospital and tangibles for the public airline. It is also important to note that the public hospital has average gap scores of more than -2 for reliability (- 2.111), responsiveness (-2.292), assurance (-2.23) and empathy (-2.254), while the public university with average service gap scores of -2.551 for reliability, -2.403 for responsiveness, and -2.118 for empathy.

DISCUSSION

This study provides insight into users' perceptions and expectations of service quality of a public hospital, a public university, a government-linked airline carrier, a government-linked hospital, and two government-linked telecommunication service providers. Results show that customers perceive service performances of government-linked companies as better compare to services delivered by public organisations. This is not surprising as government-linked companies exist in a competitive environment with profit-making objectives that drives sustainability of the firm, and they have to meet users' desired level of service; thus, leading to better services delivered by government-linked companies. In general, it seems that government-linked companies and public organisation ought to pay close attention on reliability and consistency of their services to improve perceived service quality, which subsequently may enhance satisfaction towards the organisation.

It is also not surprising that customers have higher expectations for services of an airline compared to other type of service providers, possibly due to the high price they have to pay to travel. On the other hand, as medical services are highly subsidised by the Government of Brunei for Brunei's citizens, users of medical services seems to place lower expectations on hospitals. Price and advertising plays a role on customers' service quality expectations (Zeithaml, Berry & Parasuraman, 1993), which probably explains the difference on expectation levels between the two types of service – customers tend to infer higher service quality from explicit (advertising and other communications) and implicit promises (price and tangibles) for a service.

Although SERVQUAL is extensively used in both private and government environment, there may be key aspects in public organisations that may not have been included in the measurement instrument. Results here are not generalisable across the Brunei public sector, thus, future research should aim to determine additional dimensions that affect customers' perceived service quality of public organisations. The Brunei government provides high subsidies for medical services, education, fuel, water and electricity, among others; therefore, future research should attempt to investigate factors that affect customers' desires on service performances of the different service types.

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Big Data in Organization Practices: Concepts and Applications

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Abstract— Many organizations, both public and private sectors, are adopting big data as it can be the next game changer in the increasingly competitive environment. Big data refers to a huge amount of structured and unstructured data from variety sources. However, big data is not only refers to huge amount of data that ever increasingly growing in size and varieties, but more importantly, it also includes the analysis of data to reveal hidden values and meanings. Big data has the potential to create a better future for humans and will definitely affect many industries. Big data, however, poses a serious challenge due to the complexity of data it stores. Hence, it is difficult to organize and new technology is needed to tap hidden values. In this paper, we introduce concepts and applications of big data for organizations. The paper will address ontological issues of big data application for future business practices. The pivotal role of big data is to address the complex problem, develop patterns, make prediction, and take decision.

Keywords: Big Data, Data Analytic, Volume, Variety, Velocity, Value

1. Introduction

Big data is a new area of research which is originated from the idea on how to handle and utilize rapid growth of volume of data that cannot be processed using the conventional data processing technology (Schönberger & Cukier, 2013). With the advancement Information Technology (IT), various tools, strategies and technologies have been developed to efficiently process the vast amount of data.

Big data is defined as a very huge data that potentially contains hidden patterns or trends of things. These hidden patterns or trends can be revealed using big data analytic to support business decisions. Managing big data is important for organizations as big data will help them in better decision making capability. Hence, this will help them to quickly see problems and grab opportunities for their competitive advantages.

An organization collects big data through various means, online or offline, and from various sources, including social media with the objective to understand the patterns made by the users or decision makers (Watson, 2014). The concept of big data strengthen the fact that data could be analyzed to reveal trends within the processed data (Anshari et. Al., 2016). Big data helps organizations understand the behavior of their customers and use it to help deliver expected customers' value (Anshari & Alas, 2015).

Some of the traits of big data are a large volume of data, high velocity and faster in data process. The amount of data, in various forms, is kept increasing rapidly. Without proper data management, processing, and analysis this big data will sit idly as waste. Even though the adoption of big data is in the early stage, utilizing big data as a means of important assets will transform our current lifestyle. This paper will introduce several concepts of big data and its utilization for organizations.

The objective of this paper is to portray the foundation for big data initiative and its applications. The analysis and discussion are based on concept, technologies, and applications. This paper is organized as follows: the next section is the literature review on big data, Section 3 explains research methodology. The discussion is presented in Section 4, and Section 5 is the conclusion.

2. Literature Studies

a. Definition

There is no clear definition of big data and it was also mentioned that the main principle of big data is about predictions (Schönberger & Cukier, 2013). The data that are stored in the computers can be retrieved and used for different purposes like predicting a search's keyword or Facebook suggested pages. Correlation analysis gives the picture on how computer algorithms can be used to predict human activities (Pence, 2014).

In a simple definition, big data is a huge amount of data, fast and diverse. In another perspective, big data is also known for the 3 V's: ***Volume***, ***Velocity*** and ***Variety*** (Laney, 2001). It is produced very quickly in many different forms and formats. Big data is used to analyses significant information with speed data processing. Another definition is a massive volume of structured and unstructured data that is obtained and processed through new techniques that can produce different results by combining datasets, contrasting them in different ways, and doing it as quickly as possible (Davis, 2013).

However, big data is aimed to deliver ***Value*** from those large volumes and variety of data by enabling high-velocity capture, discovery and analysis (Villars et al, 2011). According to Ohlhorst (2013), an extremely large data that is beyond what a traditional processing tools could manage or analyze is said to be big data. Big data is data that exceeds the processing capacity of conventional database systems. The data is too big, moves too fast, or does not fit the structures of database architectures. To gain value from big data, users must choose an alternative way to process it (Dumbill 2013) since big data is very different kinds of data that cannot be handled by traditional relational database management systems (Watson, 2014). Thus, any data that beat current processing technology can be considered to be big (Gartner, 2012).

Big data stands for vast amounts of data sets that cannot be analyzed by old methods of computing. Traditional data processing usually limits to calculations in finances, documents, stock records and personnel files and traditional data does not have a huge capacity as it only limits itself to process and store records. Big data however is able to broaden its capabilities to transfer and share, predict, visualize, capture and search data (Watson, 2014).

b. Characteristics

Previous studies explained that big data create value from data. Doug Laney, an analyst of META (presently Gartner) defined challenges and opportunities brought about by the increased data with a 3Vs model, i.e., the increase of Volume, Velocity, and Variety, in a research report (Laney, 2001). Gartner and many other enterprises, including IBM (Zikopoulos et al, 2011) and some research departments of Microsoft (Meijer, 2011) still used the “3Vs” model to describe big data within the following 10 years (Beyer, 2011). In the “3Vs” model, Volume means the generation and collection of massive data scale becomes increasingly huge. Velocity means the timeliness of big data, specifically, data collection and analysis, etc., must be rapidly and timely conducted, so as to maximum utilize the commercial value of big data. Variety indicates the various types of data, which include semi-structured and unstructured data such as audio, video, webpage, and text, as well as traditional structured data. Some of the semi-structured data based can use Hadoop. Hadoop is a big data tool focus on analyzing large volumes of data involved, as well as mining the amount of data and calculations involved in large amount of computing. In order to accommodate some characteristics of big data, the paper suggests the 4 V’s of big data; volume, variety, velocity, value (Figure 1).

c. Volume

The concept of *big data* was used to analyses the explosive of data volumes to gain a value from data. Data forms every elements of business. Even small enterprises rely on data for day to day activities. In traditional business practices, enterprise employs structured data source such as Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Supply Chain Management (SCM). While, big data extends the data sources from unstructured data such as social media, voice data, video recording, etc. Big data is a particularly massive volume, particularly large data sets, and such data cannot be set its content using traditional database tools, management and processing. The purpose of volume in the data is that they are gathered by the company which is later used for further knowledge. Often used in organizations, big data allows more storage space compared to traditional data that is only limited at a certain range and has storage issues.

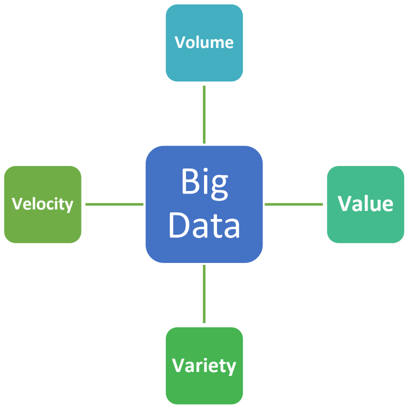

Figure 1: Characteristics of big data

d. Variety

Business needs different types of data to demonstrate the richness of raw materials. Variety refers to types, sources, interpretation, context, and formats. The data category variety (large), is a data from multiple data sources, data types, which include semi-structured and unstructured data. Variety is the type either of data that can be compromised which means that it can be structured or vice versa. It also allows a diversity of all types of data format such as pictures, audio and video, 3D models, simulations and location data for example Google Map.

e. Velocity

In the era of texting and instant messaging, the speed means everything to business. Even, customer applies zero tolerance for slow in service and delivery. It requires quick data processing capacity. Followed by the data processing speed, velocity which is fast in the case of very large amounts of data, but also be able to do real-time processing of data. Velocity deals with the time or speed in which the big data is being processed. In addition, big data escalates its speed velocity surpassing that of old methods of computing. The velocity of data affects the variability of data because as they increase data flows can be very inconsistent. Daily, seasonal and trending data especially in social networking are the factors of variability. The variability is difficult to manage along with the unstructured data. Complexity occurs due to the multiple sources of data. It is quite difficult to manage, link, cleanse and transform data across systems.

f. Value

There are many benefits of big data. First, businesses have access to more accurate data as big data can discover the hidden data connections and pattern. Second, it can improve business decisions because it provides as much data as possible. Third, big data reduces the maintenance costs, it is very expensive to replace and upgrade every technology, big data service can be facilitated through cloud computing so the important files or documents are intact in them. In addition, it also keeps the data save by detecting the internal threats. Moreover, it is improving the security and law lnforcement and understands customer's preferences like the Netflix that can detect traffic details for various devices, spot problems in the area and add systems that can help the future demand. They are also able to get more vision of their customer's desire (Matteson, 2013). Lastly, value is the situation given when the leader of the organization has to trust on the information being given so that is able to make the right decision for his business.

3. Methodology

The study attempts to explore the potentials of big data use in business organizations. The objective of the study is to investigate recent big data adoption in organizations. The methodology consisted of literature analysis of the research on big data use in business organizations. Contents analysis is applied for reviewing thirty literature reviews of big data published in peer-reviewed journals. The review process then is clustered into a thematic. We expect the use of big data can lead to an option that is technically feasible, value creation, and acceptable to the organization.

4. Discussions

Big data has become disruptive impact in many sectors, and expected to change the way business plan and run their organizations (Williamson, 2014). Big data is also creating a high demand for people who can analyze and use big data (Watson, 2014). Big data have an enormous potential to create a better future for society. It can be used to develop many industries like business, financial matters, health or agriculture. Value creation is the focus on creating value from data. Some examples how value is being created from big data in any business sectors shown in this section.

(a) Business Enterprise

This is due as it is most likely used in big organizations or enterprises, social media network, retail databases on recorded customer activity such as Amazon or supermarket retail databases, logistics and health care facilities. In order to be able to gain value from its data sources, it is important for the entrepreneur to establish a quality level of business, for example, the business handlers must first have the abilities or knowledge on how to recognize big data and its advantage. In conclusion, big data can be viewed as the latest generation in the evolution of decision support data management (Watson and Marjanovic, 2013). From my point of view big data brings a lot more benefits, not only for business but other field as well, most importantly, it really helps us to systemize usefully. One of the applications on the use of big data is to optimize machine and device performance. For example, Toyota Prius is installed with cameras, GPS and sophisticated computers and sensors to ensure safety precaution on the road automatically. It can be used to optimize energy grids using data from smart meters (Marr, 2013). There is an example of the successful use of big data when Netflix used big data to run their streaming video service as (Schectman, 2012).

Instead of using traditional methods of data gathering, business organizations can find out what their customers want and made accurate solutions. This shows that big data can perform better than any processes at double the speed. With the amount of data increase, it is said that oil and gas industry tends to be discarded or analyzed in a very casual way (Persons & Jensen, 2015). To demonstrate how big data analytics is effective, take Chevron for sample, how advanced and powerful computers with monstrous storage is utilize to increase their performance of successful oil drilling from a ratio of 1:5 to a ratio of 1:3. Hence, resulting in tremendous cost saving (Watson, 2014).

Big data is widely used by businesses in order to enhance their performances, and move the volumes of their sales to a more unimaginable quantity. With the aid of online shopping, business organizations have more control and understanding of their 'loyal customers'' behavior based on their clicks, purchase, budget, etc. With this ability that they possess, the company is able to know what their customer's taste and personality is, and can predict what their next purchase might be they can take this into account and advertise or offer discounts of products that would fulfill the customer's desire (Anshari et. al, 2017). In return, their business would expand by attracting more customers from reading the positive reviews by these so-called 'loyal customers'.

The reason for this process to be carried out is to see whether there are any patterns, trends in relation of the human behavior and interaction. There are different ways to how big data can be applied. Businesses can increase their sense of understanding for their customers' behaviors. Since big data can provide a pattern of customers' information, businesses can predict and assume what are the needs of their customers nowadays. For example, any retail shop would be able to predict what they would sell from the pattern or trend that received from the use of big data.

Big data is widely used and there are many sources of big data such as Web log files, social media and machines. A variety of analysis technologies, approaches, and products have emerged that are especially applicable to big data, such as in-memory analytics, in-database analytics, and appliances. One of the examples is where a coffee shop is introducing a new coffee product but this coffee shop is concerned that the customers would dislike the new coffee. On the day the coffee is introduced, this coffee shop can monitor blogs, Twitter, and niche coffee forum discussion groups to assess customer's reactions. From this they can know the reactions or feelings of the customers and any negative feedbacks about the coffee would make the coffee shop to improve the coffee. Other examples where big data is applied are in online gaming, which is highly dependent on big data and analytics (Rudin, 2010).

(b) Healthcare organization

Over many years, the demand for big data has increased. People using the internet have also increases, hence big data can be applied here to ensure that there will be no traffic or lagging when using the internet. Big data can be applied in many things. For examples, for health issues, IBM looked at local climate and temperature to find correlations on how malaria spreads from data on the World Health Organization. So they can predict the location of future outbreaks. Big data is also used by governments to address important problems faced by them (Anshari, & Lim, 2016). For example, in the healthcare industry, big data can be used to choose proper treatments for patients with severe diseases.

Big data has already an intensely discussed topic in many fields including healthcare. Hospitals: Analysis of fifty million records of the UK National Health Service shows that patients admitted to hospital on Sundays have a higher mortality risk in the following thirty days. Concomitantly, patients admitted during the week, staying on over the weekend, and discharged the next week, have a lower mortality risk. This led to a discussion if and how expertise and skills must be equally high all days of the week, including Sunday.

The explosion of data volumes from healthcare actors (patients, patients' family, nurse, management, and physicians) brings about new concepts and visions to promote a better health literacy and health status of the public. The Biometrics Research Group in the US estimated that the spending for the growth of big data will increase from US$4 billion in 2014 to US$7 billion in 2017 (King, 2013). The increasing availability and growth rate of biomedical information, also known as 'big data', provides an opportunity for future personalized medicine programs that will significantly improve patient care. Therefore, the predictive power of big data has been explored recently in fields such as public health, science and medicine (Costa, 2014). Aside from health care, big data is significantly used for food sustainability.

The application of big data can also be used to improve the health system. Big data is able to get information from DNAs through the analysis and this can help doctors to find new ways to cure any sickness and predict diseases patterns.

(c) Agriculture

Barnatt (2014) also claim that in time, big data may also aid farmers to precisely predict the weather and their crops conditions. Big data improves the accuracy and immediacy of weather forecasting. Better prediction for severe weather, like hurricanes, can help locate the right evacuation zones (Sullivan, 2016).

(d) Entertainment

Online games also use vast amounts of big data as it records and stores data of players logging in, hours of play, registered or how many that hasn't logged in for days and so on. For instance, Zynga collects a tremendous quantity of data. Upwards of 60 million people play every day, and every mouse click is recorded. Like most big data, however, only a small portion of the data merits long term storage and analysis. Alerts are sent within minutes when there are problems such as a game going down for a group of players. Reports are generated that show metrics such as the number of players, how many signed up today, how often they play, how many haven't played in 30 days, and the amount of revenue generated (nearly all from the purchase of virtual goods) for every game. Game designers make changes to the games weekly and analysts work with them to investigate how to make the games more engaging and profitable. Big data can make it easier as everything is controlled by one server but it can be complicated also as it is not easy to run it and even create it.

A. Challenges

(a) Complexity, Extraction and Acquisition

New form of technology to process, and hence enabling upgraded decision making, in depth discovery and optimization of the process. In other words, it is the revolution of data processing. This revolution requires efficient processes to turn complex data into a meaningful outcome (Gandomi & Heider, 2014). It can become complicated in terms of storing, analyzing and visualizing for further processes and results.

Big data however has its drawbacks due to it unstructured complexity as the more data it stores, the more complex for it to organize therefore become unstructured and difficult to trace. Research driven by big data reflects a discipline that, to extract meaning from very large datasets, incorporates various techniques such as data mining and visualization into diverse fields, including the humanities and social sciences.

Most of the big data surge is unstructured information and is not typically easy for traditional databases to analyze it. Traditional data management and analytics systems are based on the relational database management system (RDBMS). However, such RDBMSs only apply to structured data, other than semi structured or unstructured data. In addition, RDBMSs are increasingly utilizing more and more expensive hardware. It is apparent that the traditional RDBMSs cannot handle the huge volume and heterogeneity of big data (Chen et al, 2014). The research community has proposed some solutions from different perspectives. For example, cloud computing is utilized to meet the requirements on infrastructure for big data, e.g., cost efficiency, elasticity, and smooth upgrading/downgrading. For solutions of permanent storage and management of large-scale disordered datasets, distributed file systems (Howard et al, 1988) and NoSQL (Cattell, 2011) databases are good choices.

Lastly is about how many organizations struggle on how to manage, merge and govern varieties of data. As data nowadays has comes in all type of formats structured, numeric data in traditional databases or unstructured like email, video, audio and financial transaction. Due to its large size, big data cannot be processed by traditional computing techniques. It needs to be managed and processed by a machine with advanced technology and big storage.

(b) Privacy and Security

Most big data service providers or owners at present could not effectively maintain and analyze such huge datasets because of their limited capacity. They must rely on professionals or tools to analyze the data, which increase the potential safety risks. For example, the transactional dataset generally includes a set of complete operating data to drive key business processes. Such data contains details of the lowest granularity and some sensitive information such as credit card numbers. Therefore, analysis of big data may be delivered to a third party for processing only when proper preventive measures are taken to protect the sensitive data, to ensure its safety. Organizations must be proactive about privacy, security and governance to make sure all data and insights are protected and secure (IBM, 2013).

Despite all advantage, there are some challenge will be face when trying to initiate such program as it is only seen as vision for the future or just speaking hypothetically. For example, managing Big Data is not easy as it sound, knowing that many organization and company still struggle with small data management such as data integrity, privacy, piracy, data security and more, imagine what complex problem will be face when applying Big Data. It may seem as a new level of advanced computing; however it may raise more concern if it is capabilities not fully understand.

(c) Analytic

The era of big data is coming to bring new opportunities for discovering new values. In the big data era, reliable system of big data analytic is critical to provide reliable value. This process of data is given to data management and analytics. Data management involves using supporting technology to analyze and store data and to prepare and restore it for analysis. While analytics, involve using techniques to analyze and obtain intelligence from big data. Big data and analytics are closely connected to each other. Analytics is not a newly introduced thing; they have been available for years. What made it new is when they come together in computer technology and software, new sources of data, and business opportunity (Watson, 2014). There are three different types of analytics, which have different performance on different platforms. They are descriptive analytics, predictive analytics and exploratory or discovery analytics.

One type of analytic is the social media analytics. Social media analytics are being defined as "…the analysis of structured and unstructured data from social media channels" (Gandomi & Heider, 2014). To illustrate above statement: Starbucks has used social media, such as blogs, twitter and niche forum, to analyse the costumers' on the new product being introduced. This is much quicker as compared using a periodical method, waiting for the sale's reports to come in and evaluate its performances (Watson, 2014).

Big data analytics is a process to reveal the variety of data types in big data itself. Big data is popular among businesses as it can bring benefits to them, for examples, it can lead to effective marketing, better customer service and competitive advantages among other businesses.

However, big data will not process by itself. Although it was stated that the collected big data could be used to the company's advantage, it is also has to be analyzed in order to gain the needed info. This type of analysis is known as 'Big Data Analysis.' Watson (2014) explained that there are three types of analytics: descriptive, predictive and prescriptive. Descriptive analytics has a purpose to summarize the data of what happened before such as Twitter and Facebook posts. Predictive analysis is processing statistical data to be used as a prediction of the future. Similarly, to the predictive analysis, the prescriptive analysis can also be understood as a suggestion to take action or can also be used to identify necessary solutions. Therefore, the final product of analysis will have great value since the raw data is full of variety and volume; it could open doors of new possibilities and understanding.

The methods of data collection and analysis have evolved to the point that it collects even small details. An example would be the tagging of the location in which a photo was taken on Instagram and it is put together with other photos in the same location. This is irrelevant compared to the bigger, large-scale uses of big data. The data collected from social media users are like indirect feedback, this enables companies to know what improvements are needed, and this will allow them to come up with better versions to the previous ones.

5. Future Directions

Big data is not distinct, they have multi characteristics and properties. Big data is cohesive and linked to each other, they vary and sometimes does not fit into a category, requires appropriate processing capacity and diverse, complex and evolving in nature (Shiri, 2014). Nonetheless, what is sure is that the term "big" implies that size plays a big role and big data is often associated with dealing with data as big as one Zettabyte which is equivalent to 1x1012 Gigabytes (Pence, 2014). That huge amount of data is impossible for humans to work with on a daily basis.

A data set that grows up enormously can lead to the traditional data processing ineffective because it is hard and difficult to manage in a form of its high volume, velocity and variety. A big data has become an important role in the organization this is because a bigger set of data will give variety as when there is more data there will be more analysis and more result, which is useful for research by scientists. Large social network organizations also need massive data such as Tweets, Facebook and Instagram post as more than a billion people using it. A high volume of information or data in the web will result in a universal definition shared by different people with their own ideology. And a high amount of data is needed for any organizations that require storage of many details or information such as personal data in banks or email messages, documents in businesses and government. In order to successfully apply big data, an immense support from the government should be involved. Governments need to fund more research regarding big data awareness and implementation. Not only that, more organization either publics or privates need to invest into big data.

To fully operate the big data require three dimensions, which are volume that is large, Variety from structure to unstructured of all varieties such as video, audio and text. Velocity is how fast the data is processed. However, technologies plays important roles in order to process the big data have from the 3 dimensions. It consisted of application and technology for gathering, storing, analyzing, and providing access to data. Therefore, large storage processing computers that consist of very high processing software and it is very complicated and expensive. Hadoop provide a platform for big data, vast of companies and organization are using Hardoop for their database for storage and data processing. Although cloud computing base are example can be used for large organization that cannot afford big data storage. Data is already available on the website and it does not require downloading files or documents.

High volume of data refers to the volume is being collected every day, every second around the world from many different sources which relate to the high variety of data such as the internet, social media, machines and computer and more, whether it is structured or unstructured form, any transaction will be instantly recorded in the form of bytes from small as megabytes (MB) to big as petabytes (PB), which cannot be integrated easily due to the incredible rate of data being stream that is the high velocity of data. Therefore Big Data analysis is often linked to cloud computing because huge amount of data recorded in real time need specific platform to locate, synthesize and process the data from a variety of sources.

6. Conclusion

Big data is as important as the Internet to everyone, especially to business. More data helps to make a more accurate analysis, leading to a better decision making. Big data can be characterized by four Vs; Volume (great volume), Variety (various modalities), Velocity (rapid generation), and Value (huge value but very low density). Big Data is defined as a large amount of data that needs to undergo advanced management techniques due to its complexity and data size. Big data analyses multiple data to recognize any patterns or trends, especially to human behaviors. This cannot be done with old methods. Big data can be used to detect future problems such as **diseases and business trends**. This is due to its capabilities to gather data at an immense speed and able to distinguish the value of the data. Nonetheless, big data, when captured, formatted, stored and analyzed it actually can help an organization to gain useful insight to improve operation, especially to business and society as more data may lead to more analyses that are accurate. To put it briefly, big data use advanced computer systems to record the vast amount of data produced by humans daily. The data can be retrieved and reused for other applications or uses. With big data, it is possible to keep track of an individual's regular activities and predict their wants and needs. It holds a massive potential to get humans to another level of digital advancement.

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Islamic Finance Principles - A Way For Regulators To Reform Western Banking?

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Abstract: The 2008 Global Financial Crisis demonstrated the profound impact of financial instability as an on-going global threat. Regulators are therefore looking at the fundamentals of the supervisory framework and examining potential to develop alternative models. One such opportunity would appear to be in the rise in the application of Islamic Finance Principles, or what could generically be called 'ethical or participatory capitalism'. The basic principles are; no interest charges, profit and risk sharing, and prohibitions of excessive risk and gambling which, once detached from any religion, could form the basis for a global governance strategy.

This paper explores the potential opportunity the Islamic Finance (IF) Principles (Ethical Capitalism) present, by reconnecting financial markets with the real economy, asset backed investments, providing true intermediation between depositors and entrepreneurs and the ethical management of funds. Through Keynes, Minsky, Usmani and others, the discussion questions the validity of the interest mechanism as a way to govern financial markets and raises concerns over uncoupling investments from real productive enterprise, creating a 'veil of money'. After the Big Bang in 1987, money and debt were commoditized and real economic activity became subsumed under financial instruments which contribute nothing to the equitable intermediation between deposits and productive investment. The thesis is, that IF principles provide global regulators with an opportunity for fundamental change, while also removing the oppressive interest rate regime.

I. Introduction

With the world about to spin off into another financial crisis, regulators should be looking at the fundamentals of the financial markets policy framework and examining emerging alternative models.

One such opportunity would appear to be in the rise in the application of Islamic Finance principles, or what could generically be called 'Participatory capitalism'. An alternative description might be the more old-fashioned concept of interest-free mercantilism. It is, however, essential to generalise these principles, which primarily consist of;

- no interest,
- profit and loss sharing,
- and prevention of excessive risk;

detaching them from any specific religious belief system, in order to make them readily applicable as the global governance strategy, encompassing regimes with different belief systems or none.

One major aspect which has not been explored sufficiently in recent times, is the interest mechanism itself - the concept of payment for the use of money as if it was a production resource. Through Keynes, Minsky and others, there has been discussion on the validity of the interest mechanism as a way to govern financial markets and of concerns over the impact of uncoupling investments from real productive enterprise, creating a 'veil of money' hiding production from investors.

Once money and debt are commoditised, real economic activity can become subsumed under a market structure which permits construction of instruments such as Collateralised Debt Obligations (CDO) and Credit Default Swaps, which contribute nothing to the equitable intermediation between deposits and productive investment. The principles applied in Islamic Finance have parallels in classical economic theory which re-emerged and were reflected in recovery and resolution policy adopted since 2008 (in particular across the EU where the Bank Resolution and Recovery Directive was enacted into National Laws). Indeed risk management principles applied by 19th Century English bankers are also similar because banks were assuming some of the risk in partnership arrangements and therefore took a close direct interest in their client's success, because their own success was dependent on it.

This paper will review the principal culprits in the process of disconnection of production from investment, and discuss how the prohibitions of interest, excessive uncertainty and gambling, if broadly applied, could provide efficient intermediation and equitable outcomes. We will be working from the premise that the primary focus of regulators and governments should be to optimise the efficient use and distribution of available resources throughout society by enabling a market-based economy supported by simple and enforceable regulation. I acknowledge this assumption may be optimistic!

II. Basic Elements to be Adopted; to replace conventional financial instruments.

Mechanisms developed through Islamic Finance to provide credit and monetary policy tools can be adapted into generic instruments, for example suitable types of Sukuk structures could become the basis of 'profit sharing asset certificates'. Broad adoption of Participatory capitalism principles would provide scope for other innovative product developments. However, in all cases the link between the investor and the physical asset must be maintained and cannot be sold or hedged without recourse to the original asset or business. Risk and profit can only be assigned, with no transfer of ownership. Unlike the situation leading up to the 2008 crisis where loan originators set up sub-prime mortgages and then commoditised the loan and risk and sold it to investors, so that they had no further responsibility for outcomes.

The key aspect of the new instruments is the necessity to maintain a link to the asset.

There are a variety of mechanisms available for banks to earn a return efficiently without resorting to interest. Each of these mechanisms will have associated risk profiles which will be reflected in the margin added by the lender in each of; exchange transactions, lease to buy contracts, partnership and profit sharing arrangements, which we will now consider in turn. I realise many of you will already be familiar with these.

Exchange Transactions

Credit purchases such as those on a Credit Card create a challenge in the no-interest environment, but the major International Payment Networks, Visa and MasterCard have already developed appropriate systems. These transactions involve the bank acquiring an asset on behalf of a client and selling it, at cost plus margin, to the customer in instalments. There is some sharing of risk by the bank until the asset is cleared from its inventory. These have been in place for a number of years, for example Visa Credit Card issued be Standard Chartered in Pakistan.

The other simple transaction is where the bank provides finance for a productive enterprise by advance purchasing the products, crops or livestock, for re-sale at a higher price once the asset has matured.

Lease to Buy Contracts

These are similar to arrangements in conventional leases where the financer buys the asset and leases it to the customer on an instalment basis having added a margin. This arrangement facilitates such things as house and car purchase, where the ownership will gradually be transferred to the customer, thus reducing the risk for the originator.

Partnership Financing

In its simplest form this allows the bank and customer to jointly own the asset, which the customer will gradually purchase over time, while also paying rental on that part not wholly owned. Again this means the lender must take an interest in the success of the enterprise.

Profit Sharing

This perhaps reflects the essence of the principles. The arrangement allows the bank and customer to share in the profit and risks of investments and is the mechanism for banks to intermediate between depositors and borrowers. The stipulation in Islamic Principles for real economic activity and risk sharing places greater importance on credit worthiness and viability of investments to create wealth. One instrument offered, for example in UAE, to implement this principle is the Profit Sharing Investment Account (PSIA) which raises a number of interesting issues.

The concept of risk sharing is alien to modern conventional banking, but in contrast, the PSIA allows customers to suffer a capital loss in the event of insolvency. There is comparatively little regulation of PSIAs but they do offer a compliant investment product to retail and wholesale bank customers. These investments are based on partnership contracts between the customer and the bank who owes a duty of care to the customer. The arrangements take two forms one where the depositor specifies particular assets that the bank is authorised to purchase or the more common unrestricted type where the deposits can be combined and invested at the discretion of the banks' fund managers.

The PSIA is a significant funding vehicle for Islamic Finance and would be easily adapted for broader application. In these profit and loss sharing contracts the profit is shared between the bank and the depositor.

Profit Sharing Asset Certificates (PSAC) Sukuk

The development of the PSAC instrument has enabled something similar to conventional securitisation to develop. A PSAC is a certificate representing an equal and indivisible share in the ownership of a 'tangible asset'. The asset could relate to a specific project, physical equipment, infrastructure or service associated with a specific investment. PSACs are issued on projects where the investment is based on a partnership between the provider of funds and the entrepreneur who has the management expertise. The PSAC can either be participatory, as described above, or fixed return instruments which depend on a third party guarantee. These are traded on a primary market in the same way as shares, on the basis of ownership of assets or debt instruments. The PSAC differs from conventional bonds because the return is generated by the underlying assets. It should be noted that debts cannot be sold except at face value, maintaining recourse to the originator.

Securitisation was a key feature in the recent financial crisis, but that was because it relied on the selling-on of risk and interest but no recourse to underlying assets. Under 'Participatory Capitalism', instruments can be developed which give holders a proportion of ownership of the underlying asset. Debentures and bonds of the conventional debt market would be replaced because debts can only be assigned to others on a par value without transferring the risk of default. The difference is that the debt is only assigned not sold, therefore enabling recourse in the event of a default. Any returns are based on the profit or loss attaching to the original assets.

III. The Conventional System

'Money as an end in itself'

The concept of money, simply as a means of exchange, rather than a profit earning product in its own right has been considered and discussed by scholars including Keynes. Prohibition of usury was also widely applied historically across most religions including Christianity and Judaism as well as Islam – and there is a common rationale. That money cannot be used in itself to meet any human needs in the way commodities can. Commodities are classified into two categories, consumption goods and productive goods but fiat money cannot be considered to be either of these, because it has no intrinsic value. Indeed Adam Smith regarded money as 'dead stock'. Money was considered to be a measure of value and a means of exchange, and only recently as it disconnected from the underlying asset, it evolved and became accepted as an end in itself. Note; unpegging the US Dollar which led to the demise of the Bretton Woods System was one such case.

The Global Financial Crisis causes / deregulation

The two most significant post-war regulatory initiatives, Bretton Woods and the EU, underlined the regulatory preference for structural stability. However, despite this, the boom bust ten year cycles have continued, from the 1929 Wall Street Crash through to the Asian crisis in 1997, the 2007 Global Financial Crisis (GFC) and renewed concern that the World is on the path to another crisis in 2017/ 2018
Until the 1980's and 90's, regulators promoted stability and the need to separate speculative activity from core deposit-taking banking. What happened to change market philosophy in such a catastrophic way?

Financial Market deregulation and Financial Crisis

On both sides of the Atlantic pressure had been mounting to reduce regulation and allow financial services organisations to merge and take advantage of shared expertise and resources. The UK, under the 1980's Thatcher Government, wished to attain the status of global financial centre, and the existing constraints imposed by the London Stock Exchange were restricting the ability of foreign investors to trade in the UK. The London Stock exchange had been self-regulating and practices included; fixed minimum commissions and a 'single capacity rule' under which brokers and market makers were required to be independent, not part of a larger financial services group. The UK Big Bang of 1986 removed these restrictions overnight.

After the Big Bang the US government, under pressure from financial institutions, enacted the Gramm-Leach-Bliley Act, repealing post great-depression legislation, so as to allow mergers of financial conglomerates. The Act also provided for regulation by the Federal Reserve and for banks to create subsidiaries in insurance and securities trading. In the US and UK it was considered advantageous that clients could access all financial services and advice through a single organisation.

However regulators then came under growing pressure because of the increased systemic risk from financial conglomerates, should they encounter difficulties and the concept of 'too big to fail' was born.

Global Financial Crisis (GFC)

The period of de-regulation allowed development of massive debts by means of financially engineered derivatives, contingent on the ongoing rise in values in the US property market. Once it was clear that substantial tranches of assets in triple 'A' rated structured securities were in fact junk, banks ceased trading in hedge funds which precipitated a widespread loss of confidence. The financial markets relied on the concept of 'too big to fail' to underwrite the excessive risks being taken.

Since the crisis there has been a considerable amount of academic discussion of the causes and whether the primary culprit was the commoditisation of debt through securitisation or a shortfall in regulation. The crisis was precipitated by mortgage lenders funding long term lending with short term borrowing using securitised assets as collateral. The interesting question raised here was more about how regulators could develop control mechanisms for such a complex international securitisation market.
The traditional mechanism for institutional regulation has been capital adequacy, institutions being required to maintain levels of reserves in order to protect creditors and depositors. These reserves should reflect the riskiness of the assets, and the Basel II regulatory framework proposed the idea of risk categories, in order to assess how much capital should be held in reserve. The quality of those assets being used as reserves was a matter for consideration as was the idea of restraining leverage.

Securitisation of mortgages enabled lenders to provide mortgages at favourable rates without having to back them with retail deposits. This situation was sustainable for as long as there were low interest rates and plenty of liquidity but once interest rates started to rise and lenders realised that the tranches of triple 'A' rated assets they held as collateral were worth little, the market dried up. Restraining leverage and re-connecting deposits and lending would prevent these excesses and mean that changing market circumstances could cause only minor shocks to the system.

In the lead up to the 2008 crisis, institutional investors including pension funds were buying tranches of CDOs that were supposedly triple 'A' rated, because of the promise of higher returns but without being able to see what the assets backing them were; and ultimately the tax-payer paid for the overstatement errors in ratings and real value of those assets.

Another issue to consider is that National regulators supervise only the organisations within their ambit and the globalisation of financially engineered products was outside that narrow focus. Initially securitisation had been seen as a means to spread risk away from mortgage originators, but few regulators actually knew where the risk had gone. Since regulation is decentralised, cross-border securities transactions were effectively outside any regulator's sphere of control. The adoption of global principles of control would appear to be a necessity!

IV. Crisis Recovery-Plugging the holes

Regulators have therefore investigated structural reforms which perform in two different ways, the first involves changing structures to prevent the contagion that occurred during the crisis and includes ring-fencing, capital adequacy and corporate governance; secondly there are resolution tools which lead to a "bail-in" situation for some creditors, where the debt would be converted to equity.

The discussion has come full circle with conventional banking reaching the conclusion that equity is preferable to debt as a financing technique. Here I must acknowledge a debt of gratitude to Mohammad Taqi Usmani and his paper on the Causes and Remedies of the Financial Crisis, which led me to this path of study.

Usmani's assertion that sale of debt should be banned and that any major financing requirements should be equity based; using profit sharing, or by taking a share of ownership of the asset through PSAC, are key attributes for recovery and resolution as illustrated in the EU Bank Recovery and Resolution Directive.

The Bail-in mechanism simply brings an institution to the state it would have been had Participatory capitalism prevailed. This was the case, for example, when the UK Government re-capitalised Lloyds and RBS by buying equity in a short-term Nationalisation. The equity to be re-sold once the organisation restructure had restored profitability, although this is not assured of course.

V. Central Bank Policy Considerations

Conventional Central Banks use interest rate management as a tool to control liquidity in the system and to manage monetary policy, we know how world waits with bated breath to hear what the Federal Reserve is going to do with interest rates! In a regime where interest is forbidden there will need to be alternative tools to control liquidity. Indeed one must question, in the current situation of very low or negative interest rates, whether that system has already run its course. Central Banks are able to remove liquidity through sales of short-term asset backed PSAC or by requiring increased levels of reserves to be held. This mechanism is already employed in some jurisdictions, for example Bahrain uses 3, 12 and 36 month Sukuk to support monetary policy.

VI. The Need for Fundamental change

In reality the lessons of the GFC and ongoing problems still prevalent today can be summed up in three principles, which map onto those of Islamic Finance and require a number of specific developments.

The first fundamental principle is that money should only be used as a means of exchange, it should never be traded as a commodity (including currency speculation), therefore prohibition of interest is a valuable step.By 2008 financial engineering created a derivatives bubble that was twelve times the value of global Gross Domestic Product, illustrating clearly that there could be no real asset backing. Interest, as a payment for using money has been seen by many as the crucial element to facilitate investment but, as discussed above, there are alternatives.

The second fundamental principle is that financing should be on an equity basis, sharing profit and risk, rather than on a debt basis. Thus creating a situation where lenders must take responsibility for the outcome of their credit assessments.

Such a reform would present challenges and a need for strong regulation and taxation reform. However it is likely that the financial engineers who developed CDOs and Credit Default Swaps would be able to adapt to the new environment, but in such a way that innovative products would be properly backed by real assets, and would not allow the excessive leveraging of the GFC. The failure of CDOs and CDSs happened because they were opaque and included inaccurately-rated sub-prime loans, and is seen as a root cause of the GFC.

Thus it follows that the third fundamental principle is that the sale of debt is prohibited. This applies for a number of reasons: Firstly transferring the risk of default cannot be permitted, particularly in cases where the buyer was not aware of the true content of the security. Secondly there is the simple legal issue of knowingly selling defective goods.

In the case of CDOs, the reputation of the originators was such that institutional investors such as pension funds were persuaded to enter the market. The inaccuracies of the ratings compounded the errors of the originators. Finally, as was very much the case in the sub-prime mortgage market, originators were not concerned about the eventual default because the loans could be securitised and sold along with that risk.

VII. Conclusion

The foregoing describes how the prohibition of interest, risk and speculation as in Islamic Finance/Participatory capitalism, would have made the 2008 derivative-fuelled financial melt-down unlikely, with all investment and speculation based in a real production setting.

Derivative trading was a mechanism for money creation, outside the ambit of regulators, which commoditised risk, and resold it. Such instruments would be forbidden under the participatory capitalism. Lessons from history; Keynes and post-war developments, show the need for markets to retain the concept of asset backed saving and investment.

In the current environment of low or negative interest rates, emphasis should be on the use of equity and profit sharing arrangements. The disconnection of money and derivatives markets from the real economy being a major underlying cause of financial instability. Prior to de-regulation in 1980s and 90s, equity was the dominant economic indicator.

The foregoing discussion suggests that Participatory capitalism provides for a fundamental rethink of global financial governance. Resolution techniques introduced since the GFC reflect the principles of conversion of debt to equity, ring-fencing ‘prohibited’ activity and the maintenance of low or negative interest rates, suggesting regulators are ready for fundamental restructuring.

Consider how the IMF may be beginning to recognise that to have met the Greek, or any, sovereign-debt crisis by piling on more interest-bearing debt has been counter-productive, whereas a shared equity approach would incentivise the lenders to promote economic growth in the loan recipient rather than austerity driven stagnation.

Western governments are changing laws and creating an appropriate environment for Islamic Finance, as well as originating issues of Sukuk, notably the UK. Western fund managers and governments are ‘jostling’ to become the global Islamic Finance Hub. Interest, which is the mechanism to make money from money appears to have lost its potency as a monetary policy tool, while equity, rather than debt may be gaining competitive advantage. Since major change is normally crisis driven, could there now be the political will and courage that led to the establishment of the Bretton Woods regime, and the 80s

Big-Bang deregulation, to replace interest based debt with equity financing?

This would achieve a return to asset backed investments, providing true intermediation between depositors and entrepreneurs, sharing the profit and risk and requiring ethical management of funds. Are governments and regulators bold enough to take these radical, but in my view, necessary steps?

VIII. Afterword

There has been much discussion in the Islamic Financial Press and increasingly in Western journals of these principles. My assertion, and I am sure I am not alone in this, is that these principles of Participatory Capitalism should be applied globally, not just as Usmani suggests from an Islamic Perspective.

Is this revolutionary? No I don't think so, it is more about restoring and realigning the fundamentals of saving and investment.

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Towards a Theory of Islamic Financial Reporting

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ABSTRACT: This paper has two major streams. It seeks to devise an entity that will allow Muslims to raise the necessary finance to conduct large-scale commerce. Simultaneously, it presents ideas for a reporting scheme that suits this new structure. The need for a connection between the business form and its disclosure scheme is illustrated by reviewing the results of the attempts by the Accounting and Auditing Organization for Islamic Financials Institutions (AAOIFI) at setting accounting standards for a Mudaraba, a uniquely Islamic enterprise. The position of the Western corporation in Islamic law is then examined. It is found that Islam can only accept a separate legal entity that has unlimited liability. To overcome this constraint, a corporate structure that primarily channels investment through Islamic financial institutions is proposed.

The paper also identifies the quality and type of disclosures that any Islamic entity will need to make and then applies these criteria to create a reporting system for the proposed Islamic company. Among the central requirements, apart from financial information, are Zakat and Shariah compliance. It is pointed out in the paper that the proposed Islamic structure promotes a scheme of shareholder-regulated disclosure that can be used to achieve the necessary reporting standards. Even Shariah compliance can be handled for the most part internally through the Islamic bank's Shariah Supervisory Boards. It is, however, felt that Zakat is best policed by an independent agency, which would selectively audit returns submitted by the company. Through the ideas contained in this paper, Muslims should be able to share in the benefits of modern, large-scale commerce without having to compromise their religious teachings.

Key words: ***Financial reporting; Islamic enterprises; disclosure; Shariah boards; Accounting standards***

I. Introduction

Islam is a belief system that unites about 1.2 billion people, approximately a quarter of the global population (Sarwar, 1989, p.209). Within Islam there has never been a separation between 'religious and temporal affairs' and business activities, like personal conduct, are to be regulated by the *Shariah*, or Islamic teachings (Gambling and Karim, 1991, p.28; Karim, 1995, p.286). History, however, shows that the political, military and economic strength of the Islamic world has been steadily declining since the thirteenth century. This century has seen many efforts to revive Islamic practice (El-Ashker, 1987, p.28-34) and this must necessarily involve restructuring the commercial sector to conform to the *Shariah.*

Muslims have already confronted the first obstacle in this process, the provision of interest free finance. This step was initiated to honour the *Quranic* injunction forbidding the charging of interest on loans. This has resulted in the establishment of Islamic banks in recent years throughout the Muslim world, e.g. in Pakistan, Egypt, United Arab Emirates, Saudi Arabia, Sudan, Malaysia and Indonesia. Even Australia has been privy to these developments with the establishment in February 1989 of the Muslim Community Co-operative Australia (MCCA) Ltd.

Bank finance, however, is only one aspect of commerce that is governed by the *Shariah*. With Islamic banking securing a relatively firm foundation, it is now important that Muslims focus on other areas of commercial practice that may need reform. Today, forty-six countries have majority Muslim populations and many others contain significant Muslim minorities (Sarwar, 1989, p.203). In most of these Muslim nations, the 'Western' corporation is used to conduct commercial activity (El-Ashker, 1987, p.78-79). The next phase in the evolution of modern Islamic commerce should thus consider whether the corporation is an appropriate business vehicle. Muslims have always been encouraged to participate in business and share in economic prosperity:

> "And when the prayer is finished, then may you disperse through the land, and seek of the bounty of Allah (through trade, business and lawful professions) and celebrate often the praises of Allah so that you may prosper." (*Al-Quran* 62:10)

The proviso has simply been that their activities and enterprises should accord with the *Shariah.* If it is determined that the corporate form contravenes Islamic requirements, then the dilemma confronting the Muslim scholar is to devise a system that provides for the *Ummah's*[1] economic need to be able to mobilise large pools of capital and remain competitive in the business arena, while staying within *Shariah* parameters. It is hoped that this paper can contribute to the initiation of discussion and thought on this important step in designing a complete Islamic commercial package.

This inquiry into the corporation has an accounting angle. Indeed, it has been motivated by a series of developments that have collectively been dubbed 'Islamic accounting'. The consensus within this movement, which this study does not dispute, is that the double-entry system is simply a record keeping technique and therefore a technology that Muslims can safely adopt for their bookkeeping (Adnan, 1996, p.321; Baydoun and Willett, 1997a, p.10). Debate has instead centred on the appropriate manner in which this record, perhaps along with extra information, should be regulated and disclosed. It is argued in this paper that this is best determined by a four-step process, which involves identifying

a) What is the item / entity being monitored
b) What information on the entity needs to be collected and why it is needed
c) To whom the information has to be disseminated
d) How and when the information should be presented

To date, most work has concentrated only on the second and last questions. The result has been a disparate series of suggestions for possible 'Islamic' disclosures and a tacit acceptance of standards, like those in Western corporate regulation, as the correct tool to regulate reporting (Ahmed, 1990, p.374-375; AAOIFI, 1996, p.15-16). If, however, the structure of a large scale Islamic business form were to vary considerably from the Western company, the first question remains unanswered in the Islamic context. It would seem logical, therefore, that it should be addressed as part of the preliminary work in constructing an Islamic reporting scheme. The response to this initial question could also supplement existing views on the other three issues. The design of an 'Islamic company', then, is part of the groundwork necessary to develop an Islamic reporting framework. Based on its proposed vehicle for large scale Islamic business, the latter part of this paper is devoted to laying the seeds of such a framework.

In summary, then, this study has three main aims, viz; to evaluate the acceptability of the Western corporation to Islam, to construct a business form more compatible with Muslim beliefs and to suggest suitable reporting and disclosure arrangements for this new form. To achieve these objectives, this paper is organised as follows. Section 2 reviews the literature on Islamic accounting to compile the criteria that Islamic reporting must meet. Section 3 studies the experiment by the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) at setting standards for an Islamic enterprise, the *Mudaraba*, to illustrate the difficulty of designing reporting systems without accounting for the business structure. Section 4 scrutinises the compatibility of the features of the western corporation with the *Shariah*. Section 5 develops a framework for an Islamic company, specifying its structure and central features, including a facility for shareholder-regulated disclosure. In Section 6 strategies are suggested to incorporate some of the extra disclosure needs identified in Section 2 within the proposed Islamic corporate system. Potential problems for that system are also discussed. Section 7 concludes the paper.

II. Previous Studies

Interest in Islamic accounting has been an offshoot of the development of interest-free banking. This branch of study was spawned by the immediate accounting needs of the Islamic banks and has slowly been extended to accounting more generally. Consideration of reporting by entities other than banks, however, is still in its infancy. This section reviews the central literature in this field.

2.1 Accounting in Islam

Any appraisal of existing reporting systems or efforts to construct a new one must begin by specifying the role and purpose of disclosure in Islam. This can be done by reference to the centrepiece of all Islamic teachings, the *Quran*. The existence of accounting can be justified by the *Quranic* instruction to Muslims to record in writing all transactions that they are party to (*Al-Quran* 2: 282). Disclosure of this and other information can be related to the following verse:

> "Allah doth command you to render back your trusts to those to whom they are due and when ye judge between people that ye judge with justice...." (*Al-Quran* 4:58)

[1] A term used to describe the collective Muslim community.

In an Islamic context, therefore, reporting should be a means whereby the controllers of an entity can discharge their trust to any relevant stakeholders. The means by which this information is to be provided should be able to "give full measure when you measure and weigh with a straight balance..." (*Al-Quran* 17:35). In other words, it has to ensure that the information is not biased and will not mislead a user.[2] This would be part of the role of any Islamic regulatory system. The other is to ensure that, apart from conventional financial data, disclosure is also made of information peculiar to the duties and obligations demanded of Muslims by their religion. Thus, as is discussed below, efforts in this field have concentrated on improving/adding to the content of financial disclosure, as well as identifying the necessary supplementary disclosures.

2.2 Accounting for the Banks

Abdel-Magid (1981) was the first to recognise that Islamic banking would have unique accounting requirements. In a descriptive overview of banking practices, he separates the operations of an Islamic bank into three sections; the *Zakat* fund, normal services and investment deposits. The *Zakat* fund is a collection of the religious levy that all Muslims above a certain level of wealth must pay as charity. The bank administers the distribution of the monies to worthy recipients as designated by the *Shariah*[3]. Normal services are facilities traditionally provided by banks. They include such things as issuing guarantees and letters of credit, purchasing and selling gold bullion and foreign currency and collecting the value of commercial papers. The running of current and savings account also falls within this category as these deposits are available for withdrawal on demand and so do not share in the bank's investment proceeds. A flat fee is charged for all these services. Investment deposits are made for limited or unlimited terms and are invested by the bank on the depositor's behalf, with any return being shared in a pre-arranged ratio. Losses will also have to be borne by the depositors in the same ratio. Abdel-Magid (1981) feels that the distinct features of each area warrant separate records and disclosures.

2.3 *Zakat* - the Basis for Islamic Accounting?

Adnan and Gaffikin (1997) attempt to define a basic objective, from the Islamic perspective, for accounting as a whole. Noting that worship of Allah is the basic goal of Muslims and that *Zakat* is one of the central rites of that worship, their suggestion is that primary orientation of accounting should be towards providing information for determining the *Zakat* obligation. While calculating *Zakat* amounts would be an essential skill for an 'Islamic' accountant, it is disputable that it should be the focus of accounting reports. Adnan and Gaffikin (1997) have assumed that business entities, as distinct from their owners, have to pay *Zakat*. One of the aims of this paper is to consider whether Islam is prepared to recognise such 'separate' entities. A *Zakat* statement, which would be based on information stipulated by the *Shariah*, may also not provide all the relevant economic information that a user would want. Islamic reporting has to cater for both the religious and economic aspects of business.

2.4 Social Accountability and Full Disclosure - the Possible Principles of Islamic Reporting

Baydoun and Willett (1997a, 1997b) develop two principles they consider central to the preparation of Islamic corporate reports. In the first paper, they define and defend these principles. Ownership in Islam is viewed as the holding of resources in trust for God (*Al-Quran* 6:165; 57:7) and owners are thus expected to use those resources in accordance with God's wishes. Practically, this means use according to the *Shariah*. Baydoun and Willett (1997a) view this as an obligation that a business would owe the *Ummah*. This is termed social accountability and it is argued that the documenting of its discharge should be one of the central tasks of Islamic accounting. This information should then be made freely available under a concept of full-disclosure. The latter principle is poorly defined and at times, it seems to be a call for complete disclosure of all the data collected on every transaction of a business. While this might be an ideal, pragmatically it has to be tempered by some notion of relevance and materiality.

The confusion over the definition of these principles is exacerbated by the modifications to Western financial reports that the authors suggest they necessitate. These changes are outlined in the second paper and consist of supplementing existing statements with a current-value balance sheet and a value added statement. The major basis for the inclusion of both a historical and current-value balance sheet is full (or more comprehensive) disclosure. Interestingly, social accountability is also cited as support for this and for the value added statement. These proposals appear to be premised on a literal definition of social accountability. In Islam, activities are socially desirable if permitted by the *Shariah*, which expresses the basic norms of an Islamic society. Thus, social accountability should be a concern about compliance with the *Shariah*. Neither a

[2] This is not dissimilar to the concept of a 'true and fair' view in Western accounting

[3] Historically, *Zakat* has been administered by a public treasury and the desirability of a private sector organisation taking on this function is contentious (Briston and El-Ashker, 1987, p. 120).

value added statement nor a current-value balance sheet assists this cause.

2.5 The Entity Problem and Accounting for Equity

Gambling and Karim (1991) were the first to raise concerns about the suitability of Western style corporations under the *Shariah*. They leave the question open in their discussion and this inquiry is the focus of Section 4, where arguments from a number of sources, including Gambling and Karim (1991), are given greater scrutiny.

Gambling and Karim (1991) do hypothesise about alternative means of large-scale investment and they present two preferences - interlocking-partnerships and franchises. Interlocking partnerships are the structure used by professionals such as accountants and lawyers, whose codes of conduct prevent incorporation. However, it is not specified how this would be feasible for industrial or manufacturing concerns. Franchises would allow those with a 'name' to expand their business through franchisee's capital, but the process of acquiring a name is likely to take a number of years and would require an operation that is already relatively large-scale. It also makes no provision for small operators who are seeking capital for expansion.

The option pursued in Section 5 is for investment in Islamic companies to be channelled through Islamic banks. Gambling and Karim (1991) overlook this idea on the basis that investment by banks is not normally seen as a permanent source of company finance. This point is inapplicable to the situation of Islamic banks, who because of their inability to pay or charge interest, must rely on business investment for the major portion of their own revenue and to provide any return to depositors. It is widely acknowledged that Islamic banks already engage in participatory financing of business through a variety of profit and loss sharing schemes (Abdel-Magid, 1981, p. 83; Tomkins and Karim, 1987, p.104 -105; Ahmed, 1990, p. 50).

Gambling and Karim (1991) also make an important distinction about the capital structure of a fully Islamic enterprise. It will almost always consist solely of equity holders, a point that is more fully developed in Section 4. As a result, Gambling and Karim (1991) conclude that Islamic accounting should have a managerial slant. The distance between ownership and control and the lack of business/financial expertise among the bulk of shareholders in the Western corporation have been barriers to the disclosure of such information in large-scale incorporated business ventures. The suggested structure of the Islamic corporation in Section 5 could provide feasible means for equity holders to have managerial style access to accounting information.

This survey of the literature on Islamic accounting reveals a number of factors that any Islamic reporting scheme would have to consider. It would need to cater for the interests of investment depositors in Islamic banks, the payment of *Zakat* and compliance with the *Shariah*, along with the release of conventional accounting information. In putting forward methods to report such information, however, all the authors, apart from Gambling and Karim (1991) have implicitly assumed that disclosures would be made in a Western style corporate setting. This paper takes a more structured approach, first trying to determine the features of an Islamic company, before deciding on appropriate reporting and disclosure arrangements. An example of how the peculiar features of an enterprise can complicate its reporting aspects is outlined in the next section, which examines the work of an organisation that followed an alternative methodology to the one advocated here.

III. An Islamic Standard

The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) began as the Financial Accounting Organization for Islamic Banks and Financial Institutions in Bahrain in March 1991. It was the initiative of the Islamic Development Bank, which along with five other Islamic banking groups was the founder member of the AAOIFI. The main objective of the AAOIFI is to 'prepare, promulgate and interpret accounting and auditing standards for Islamic financial institutions' and so included in its structure is an Accounting and Auditing Standards Board (AASB). Statements and standards issued by the AASB are an attempt at self-regulation by the Islamic banks. This section is a critique not of the content of the Board's work, but the methodology it has employed. The concepts and standards relating to the *Mudaraba*, a uniquely Islamic business operation, are isolated and applied to a hypothetical example. An analysis of the results and ramifications follows.

At the outset it needs to be clarified that the standards produced by the AASB were aimed at Islamic banks. However, as is explained below, the banks engage in *Mudaraba* both in the capacity of financier and agent. Therefore it is felt that the AASB standards on the issue can be extended to *Mudarabas* generally.

3.1 The AASB Way

The process used by the AASB is discussed in the appendix to the AAOIFI's standards booklet. Its approach was to:

"review the standards which have been developed in prevailing accounting thought, test them against the *Shariah*, then adopt those which are consistent with the *Shariah* and exclude those which are not. " (AAOIFI, 1996, p.235)

This strategy of filtering previous standards work through the *Shariah* can conveniently be dubbed the sieve method. It is formally reiterated in the text of the two statements of accounting concepts (SFA No. 1, para 23; SFA No. 2, para 7). The only past standards on which the AASB could rely were all invariably developed to be used in Western commercial settings (Hamid et al, 1993, p.133). Examples include publications by the US Financial Accounting Standards Board, the UK's Accounting Standards Committee and the Australian Accounting Standards Board (Karim, 1995, p. 285). Most Islamic banks are formed as joint-stock companies (Karim and Ali, 1989, p.194; Abdel-Magid, 1981, p. 83)[4] and so it was obviously felt that general accounting concepts, objectives and standards of western companies would be a suitable starting point. However, simply because standards were not found to be in contradiction of any *Shariah* edicts, it does not mean that those standards are the best means to govern enterprises that have a different legal structure. This is evident when the AASB standards are applied to the *Mudaraba* form of doing business.

3.2 The *Mudaraba*

A *Mudaraba* occurs when a financier, referred to as the *Rab-ul-Mal*, entrusts an agent, the *Mudarib*, with capital to conduct a business venture. A contract specifying the terms of the venture, normally including some provision for the *Mudarib* to report progress to the *Rab-ul-Mal*, is reached between the two parties, but it must allow the *Mudarib* complete autonomy in running the daily operations of the business. The *Mudaraba* is undertaken for a specified period and profit is determined as the liquidated surplus above the initial capital at the end of that time. The other important principles in a *Mudaraba* are that any surplus is to be shared in a pre-determined ratio and that in the case of a shortfall, the loss must be borne solely by the *Rab-ul-Mal*. This is because the *Mudarib* is seen to be the one to have lost the effort invested and has to suffer a loss of reputation. Any further penalties are thus seen by the *Shariah* as excessive. A *Mudaraba* can also be terminated at any time by either party, with surpluses/shortfalls being calculated at the point of termination (Bacha, 1997, p. 28 -29; Hamid et al, 1993, p. 139 -142).

Islamic banks accept certain deposits in the capacity of the *Mudarib* and also provide funds to entrepreneurs through *Mudaraba* financing (Adnan, 1996, p.47). Hence, the AASB's Financial Accounting Standard No. 3 deals explicitly with the reporting of *Mudaraba* financing, while guidelines in the second statement of accounting concepts are to be used for reporting to depositors. All these disclosures would be made by a bank within the general purpose financial statements outlined in Appendix E of Financial Accounting Standard No. 1 (AAOIFI, 1996, p.97-127). For illustrative purposes, a hypothetical set of accounting reports that a *Mudarib* would produce using AASB standards is presented and analysed in the next section.

3.3 A Mudarib's AASB Disclosure

The following concepts contained in the AASB standards have been applied in the preparation of Ayesha's accounts. The *Mudaraba* is to be treated as a going concern (SFA No. 2, para 69) and its activities should be broken up into appropriate reporting periods (SFA No. 2, para 72 and para 76). Quoting the Prophet's saying that *Zakat* should be levied annually, the AASB recommends annual reporting (SFA No. 2, para 74). Net income is to be determined by 'matching revenues and gains with expenses and losses that relate to the period' (SFA No. 2, para 87), while balance sheet items are to be disclosed at historical cost (SFA No.2, para 98). Ruling 2/5/3 allows profit to be distributed during the life of the Mudaraba through the mutual agreement of the parties (FAS No. 3). That profit can be recognised in the financial period in which it occurs (FAS No. 3, para 15).

[4] If it is found that the existing joint stock form contravenes the *Shariah*, this practice will have to change.

Mudaraba's Profit / (Loss)

Liquidation Proceeds	$ 92 000
Capital Invested	$100 000
Loss of Capital	($ 8 000)
Add: Revenue Earned	$ 10 000
Profit to be apportioned after loss of capital is met	$ 2 000
Rab-ul- Mal's share	$ 1 200
Mudarib's share	$ 800

Rab-ul-Mal's overall loss

$ 15 000 - $ 1 200 = **$ 13 800**

Mudarib's overall gain

$ 800

Fig. 1 Mudaraba Accounts-AASB Way

Name: Ayesha Import/Exports
Capital Provided: $ 100 000
Term of Mudaraba: 3 years
Profit Sharing Ratio (Rab-ul-Mal/Mudarib): 60 /40

Extracts from annual statements issued to the Rab-ul-Mal

	1994	1995	1996
Share Capital	$100 000	$100 000	$100 000
Net Profit/(Loss)	$ 10 000	($ 5 000)	($ 10 000

Profit/(Loss) Appropriation

Rab-ul-Mal	$ 6 000	($ 5 000)	($ 10 000
Mudarib	$ 4 000	-	-

Liquidation proceeds at termination (as given) - $ 92 000

Fig. 2 Ayesha's Accounts-A Recalculation

A number of problems arise with Ayesha's disclosures. Profit is any amount above the capital initially invested. If there is a shortfall, any revenue earned during the period must first be employed to make up the difference before it can be apportioned. The resulting recalculation is shown below.

The correct sums vary significantly from the appropriations based on the first set of reports. There the *Rab-ul-Mal's* loss was $ 17 000 over the three years, while the *Mudarib* earned $ 4 000. On those figures, at termination in 1996, the *Mudarib* would actually owe the *Rab-ul-Mal* $ 3 200 of the earnings that were distributed in 1994. The discrepancies have arisen because of two novel features of a *Mudaraba*. It is an enterprise that ceases at a pre-determined time, not a going concern, with monetary losses borne only by the financier. For this reason, profit for appropriation is measured as the surplus above the starting capital. This figure will therefore not tally with the sum of periodic appropriations over the life of the *Mudaraba*. Also, given that either party can terminate the *Mudaraba* at any time, using the historical cost system does not provide adequate information to the *Rab-ul-Mal* on the state of his/her investment as cash or liquidation value is needed to gauge if adequate surpluses are being achieved. Western accounting has generally assumed that market valuations are unreliable because of the discretion it gives managers of corporations, who operate in an environment where ownership and control are often separated (SFA No. 2, para 96).

3.4 The Ramifications

The preceding example has two major implications. One is that it illustrates generally the problems surrounding the use of standards as the mechanism to regulate disclosure. The primary aim of standards is to achieve consistency in reporting practices. However, it is practically impossible for them to cover all situations and some flexibility needs to be preserved for special circumstances. With such circumstances in mind, standard setters have attempted to develop a prescriptive framework on which their work is based. This framework should, it is argued, allow preparers to deduce an acceptable approach where there is no explicit guidance (Karim, 1995, p.292-293). Historical cost and the accounting period are part of the AASB's normative framework and for 'consistency', they have had to use them in all situations, including the *Mudaraba*, leading to misleading results. Different standards from around the world have also been variously criticised for being too rigid and not making necessary exceptions, being vague and open to multiple interpretations and their enforcement being unpoliced (Karim, 1995, p.293, 297-298). Motivations of standard setting bodies have also been questioned (Karim, 1995, p.293). The structure of the Islamic corporation outlined in Section 5 promotes a shareholder controlled reporting scheme, that eliminates the need for standards and thus provides an opportunity for Muslims to avoid the problems associated with standard setting.

The Ayesha example also demonstrates the difficulties of devising a reporting system without an appreciation of the form and structure of the regulated enterprise. More appropriate means than the 'AASB way' are definitely needed for the *Mudarib* to discharge his trust to the *Rab-ul-Mal***.**

This section has depicted that standards designed primarily for the Western corporation are unsuitable for the *Mudaraba* form even when they do not violate the *Shariah*. The question remains whether the conventional corporation is Islamically permissible. The answer forms the topic of the next section.

IV. The Corporation Question

This study has proceeded along the presumption that there is doubt about whether it is *halal* (permissible) for Muslims to conduct business through the Western corporation. Any evaluation of permissibility in Islam is made by reference to the *Shariah.* There are thus two parts to this section. The first gives an overview of the *Shariah* and how it functions. The second examines three aspects of the corporation that may be inconsistent with *Shariah* provisions.

4.1 Part I - Islamic Law

The genesis of Islamic law can be traced back to a statement made by Prophet Muhammad (peace be upon him) in his last sermon, in which he informed Muslims that:

> "I have left you two things. If you hold fast to them, never will you go astray after me. They are God's Book, and His Prophet's *Sunnah*." (Reproduced in Ramadan, 1961, p.24)

God's book refers to the *Quran*, which Muslims believe to be the directly revealed word of God. The text of the *Quran* consists of 114 *Suras*, roughly chapters, preserved in the original Arabic from the Prophet's times. The *Sunnah* literally translates as 'method' and comprises all the Prophet 'said, did and agreed to'. Its basis is drawn from the *Quranic* verse, which states that:

> "And We have revealed to thee (Muhammad) the message that thou may make clear to men what has been sent for them and that they may reflect" (*Al-Quran* 16:44)

Ramadan (1961, p.31-32) accurately describes the *Sunnah* as human, though prophetic, clarification of the *Quran*. Its purpose is to make the *Quran* clear to men, through a man. To preserve the purity of the *Quran*, the Prophet did not, however, encourage the writing down of what he said. Two methods are thus available to verify what is actually *Sunnah* - the first is through some written records that were made in the Prophet's presence. These include the last sermon, the notes of Anas Ibn Malik and the records of Amr Ibn al-As (Ramadan, 1961, p.36-37). The second source of *Sunnah* is the science of *hadith*. The compilers of *hadith* books used a process called *isnad*, or backing, where each *hadith* was traced through a chain of narrators back to the Prophet's times. Then information on the lives and character of each of the narrators was scrutinised and the strength of the *hadith* weighted accordingly. This meticulous process has resulted in six great collections - Bukhari, Muslim, Dawud, Ibn Majah, Tirmidhi and An-Nasa'i (Sarwar, 1989, p. 162 -163). Following the prophet's instruction, the *Quran* and the *Sunnah* are the primary sources of the *Shariah*.

There is also a supplementary source known as *Ijitihad*. Literally, the term means “to exert oneself” and it originates from a hadith in which the Prophet questions a judge as to how he reaches a decision on matters which are not explicitly covered by the two primary sources. The reply, which met with the Prophet's approval, was by "exerting myself to form my own judgement" (Ramadan, 1961, p.64). *Ijitihad* occurs either through *Ijma* or *Qiyas*. *Ijma* is the arrival by scholars of *fiqh*, or Islamic jurisprudence, at a consensus opinion. *Qiyas* is simply reasoning by analogy (Sarwar, 1989, p. 162). The product of *Ijitihad* are the books of *fiqh*, which are compilations that include relevant *Quranic* and *hadith* extracts, of Islamic law on various subjects. These subjects are not limited to moral conduct or the performance of rituals, rather the *Shariah* is a comprehensive body of law that deals with government, trade, administration, crime and the conduct of all human affairs (Tawney, 1936, p. xi).[5] Four works of *fiqh* are generally cited as the best- those of Imams Abu Hanifah, Malik, Shafi and Ibn Hanbal (Sarwar, 1989, p.164).

All the four imams, though, pre-date 1258 AD, the year of the Mongol invasion of Baghdad. This decline in Islamic influence resulted in a growing fear that hostile and insincere forces would claim expertise in *fiqh*. To prevent the corruption of the *Shariah*, the door of *Ijitihad* was declared closed (El-Ashker, 1987, p.23). This explains why many Muslims today claim allegiance to one of the four imams (Hamid et al, 1993, p.135-136). The importance of *Ijitihad* as a tool for the *Shariah* to meet new questions has seen calls in this century for the process to begin again. Noting that in the 13th century the present four schools of

[5] Islamic Law, therefore, can be compared in breadth to the law of any state. However, while it can be administered by formal mechanisms, many people, even in non-Muslim states, follow its injunctions as a matter of personal choice.

law had actually been 19, the philosopher-poet Iqbal eloquently echoes this demand:

> "The teaching of the *Quran* that life is a process of progressive creation necessitates that each generation, guided but unhampered by the work of its predecessors, should be permitted to solve its own problems." (Iqbal, 1951, p. 53)

It is in this spirit that this paper tackles the status in the *Shariah* of the Western corporation.

4.2 Part II - The Corporation and the Law

Doubt about the corporation's status under the *Shariah* can be separated into two main areas. One concerns the distinguishing legal characteristics of the corporate form. There is also a controversy about the manner in which company shares are currently traded. This section confronts each question in turn before reaching an overall conclusion.

4.2.1 Legal Features

A Western corporation pools funds from many individuals, who often contribute varying amounts. The result is that ownership, or shareholding, of the company is dispersed. This makes it practically impossible for all the shareholders to be involved in the corporation's activities. So, a set of managers, who do not necessarily have to be shareholders, are appointed to run the company. Thus, a separation normally exists between the owners and the controllers of a firm. Previously, partnerships operated on the principle of mutual agency, where all the partners were jointly and fully liable for the actions of any partner on behalf of the collective. In a public (and even larger proprietary) corporation, the relationship between management and the 'partners' is likely to be highly impersonal and any contact infrequent. If mutual agency prevailed in such a context, company 'owners' would be extremely vulnerable to management's actions. Therefore to still induce investors to become shareholders and deal with the problem of diffused ownership, Western law has developed two doctrines. These are the principles of separate legal entity and limited liability.

Separate legal entity states that the corporation has an existence separate from that of its owners (*The Corporations Law* s.123). This gives the company the standing and capacity in law of an individual. It can contract, have title to property and be a party in legal disputes. Limited liability limits any claim that can be made against a shareholder to the amount he/she has invested (*The Corporations Law* s.516-517). In this way, a shareholder's personal wealth is protected from a company's creditors. The trend in *Shariah* studies of corporations has been to view these concepts as inter-linked, with limited liability treated as a consequence of the recognition of a separate legal entity. The reasoning has been that if the corporate entity were to liquidate, it is analogous to the death of a natural person. Under the *Shariah*, the creditors of a deceased have no further recourse beyond any assets left behind. If these are insufficient to meet the debts, the creditors suffer the loss (Usmani, 1997, p. 40). So, work has concentrated mainly on whether a separate entity is possible within Islamic law. The argument in this paper is that this link between the two concepts is tenuous given the type of entity that Islam is able to recognise. The theme put forward is that the *Shariah* can accommodate an artificial entity for the purpose of commercial convenience, but that Islamic standards of accountability will not permit shareholders limited liability. A separate scrutiny of each principle follows to illustrate this point.

A Separate Entity

Abdullah (1983, p. 222) notes that Islamic jurisprudence has historically not recognised a trading entity as having obligations apart from its owners. There have, however, been instances where non-commercial institutions have been recognised as independent entities (AAOIFI, 1996, p.50; Adnan and Gaffikin, 1997, p.124). The two primary examples are the *waqf* and mosques. *Waqf* refers to property that is given as an endowment for charitable or religious reasons. Examples include land that can be farmed or tenanted. A *waqf* has no human owner and if it purchases items to use in its income generating work, such as tools, their ownership vests in the *waqf*. Similarly, a mosque, which is seen as belonging to the general Muslim community with no one designated human owner, is capable of ownership and can transact in its own name (Usmani, 1997, p.40-41). Early Islamic states also had an institution called the *Baitulmal*, which served as the public treasury. If monies were appropriated from one department within the *Baitulmal* to another, it was accounted for as a loan from one entity to another (Al-Kayyat, 1958, p.339; Sarakshi, n.d., p.18).

All the above cases are of entities for which it is difficult to trace human owners. These establishments also exist for the public benefit, not individual profit. In a corporation, the owners are directly identifiable and profit is a major motive. There are difficulties, therefore, in fully translating existing Islamic doctrines of independent entities to the corporate arena. Recognition of a separate corporate entity would have to be limited. It may be considered a collective unit for purposes of commercial convenience only. This would mean that the corporate name will be used on title deeds and in contracts. Investors could then own easily transferable shares in the company, rather than have direct ownership of all underlying assets and obligations. Companies could also exist past the death of individual shareholders. These rights are intended to make day-to-day operations less cumbersome and should not harm outsiders dealing with a corporation. A precedent for treating businesses with shared ownership as one unit already exists in the law of *Zakat*. The *nisab*, which is the threshold above which *Zakat* becomes obligatory, is calculated and *Zakat* is payable on the joint stock of partnerships. The partners then share proportionally this total amount, even in cases where their individual holdings in the stock are below the *nisab* (Usmani, 1997, p. 43). Shareholders should not, however, use an Islamic separate entity/unit principle to mask themselves from liabilities the corporation incurs. The reasons for this restriction are outlined below.

Limited Liability

Ownership in Islam is a trust owed to Allah and every individual is accountable in the after-life for how his/her resources are used and the trust met (*Al-Quran* 84:8). One of the most serious obligations owed by any Muslim during their lifetime is debt. In one hadith, the Prophet sought protection from remaining in debt, equating it with unbelief, and on another occasion, he stated that all things are forgiven to a martyr except debt (Muslim, n.d., Hadith 4649). There is also an explicit statement that debt attaches to the soul (Tirmidhi, n.d., Hadith 2915). Even if the debt is incurred through a company, which remains a trust of its proprietors although a separate entity, the owners will still be the ones who are responsible to Allah. Along with the Prophet's strong admonition of being in debt and to adhere to the Islamic spirit of not separating spiritual from daily affairs, it is probably therefore only correct that company shareholders are made practically, as well as morally, accountable for corporate debts. This unlimited liability, though, may not be as strong a disincentive for investment in an Islamic environment as it would be in a Western context.

One reason is the likely capital structure of Islamic companies. All loans in Islam are to be interest free. A lender receives no returns above the sum advanced (*Al-Quran* 2:278-279). Any debt transaction, however, always involves some chance that the borrower is unable to repay. By not making the loan in the first place, this risk is avoided and the desired result at the end of a loan period is replicated - there is no loss of capital. As a result, there is little incentive in Islam to engage in debt financing. In practice, the only type of loan Islamic financial institutions provide are *Qard Hasanah*. This is a 'benevolent' facility made available to those in serious financial difficulty, with the lender prepared to delay or waive repayments altogether. Relatively small amounts of money are normally involved (Abdel-Magid, 1981, p. 90; Tomkins and Karim, 1987, p.105; MCCA, 1997). To obtain any return, Muslim financiers have to use participatory financing, becoming partners or shareholders who share in the business income[6]. This means that a company's capital will consist solely of equity. At liquidation, this will significantly reduce the outstanding debts that shareholders are liable for.

Shareholders in Islamic companies would also be shielded from the potential devastation of unlimited liability through the *Zakat* system. The *Quran* specifies seven categories of people to whom *Zakat* money can be distributed (*Al-Quran* 9:60). Included in this list are persons in debt and so it is feasible that a part of the annual collection could be apportioned to meet the claims of shareholders who are forced to personally meet unmanageable debts.

Another safeguard for investors can be borrowed from Islamic commercial law. The *Shariah* recognises a concept called an *inan*, or limited, partnership. The limit in this arrangement is not of liability, but of mutual agency. Outsiders have an action only against the partner involved in a particular transaction. That partner still has unlimited liability to third parties (Hamid et al, 1993, p.139; Saleh, 1992, p.114-115). A similar principle applies to the *Mudaraba*, where there is a definite separation between the owner (the *Rab-ul-Mal*) and the controller (the *Mudarib*). The *Mudaraba* contract can specify that the business is not to undertake obligations, which exceed the capital, contributed. If this condition is not met by the *Mudarib*, it is he/she, not the *Rab-ul-Mal*, who is fully liable for debts exceeding the capital base (Ray, 1995, p. 72; Saleh, 1992, p. 136-137)[7]. By isolating the individual involved in the activity that causes the debt, the *inan* principles meet the personal accountability standards that Islam demands and offer protection to third parties. In an Islamic company, it

[6] There is a risk that some of the capital advanced may be lost in the event of the firm failing. That risk, though, will be no different to a situation in Western finance where proceeds from charged assets are insufficient to meet loan repayments. This is because in the absence of debt, shareholders' claims over the business assets will not lose priority.

[7] Some authors (Al-Kafeef, 1962) have misinterpreted this result suggesting that a *Mudaraba* enjoys limited liability. The reason the *Rab-ul-Mal* may not need to make any payments beyond the initial capital is because of the stipulation that the business is to be managed so that liabilities exceeding the starting capital are not incurred. Liability, therefore, is contained by self-discipline, not through a legal device.

would thus be possible to specify the duties and rights of the firm's managers and where they act in contravention of their powers, the liabilities that arise will fall on them personally. This should then act as a restraint for reckless or fraudulent behaviour on their part. The *inan* idea is used in the proposal for an Islamic corporation discussed in Section 5.

4.2.2 Share Trading

The *Quran* contains injunctions forbidding gambling and games of chance (*Al-Quran* 2:219; 5:93). Based on this instruction, Islamic jurisprudence has evolved the doctrine of *gharar*, which outlaws speculative trading. Traditionally, *gharar* has been applied to transactions where there is uncertainty about the existence or characteristics of the subject matter of the dealing. Examples include the prohibition of the sale of livestock in the womb or the forward selling of unharvested produce (Saleh, 1992, p.106). Certain scholars feel that stock market trading of company shares may be affected by *gharar* (Gambling and Karim, 1991, p. 83-85; Tomkins and Karim, 1987, p.107). This will hinge on the element of speculation and uncertainty involved in current stock market trading.

Returns for investors in shares may arise in one of two ways. The first is through receipt of dividends. As this is basically a share of company profits, there will be no objection in the *Shariah* as long as the business activities are sanctioned by Islam. The more contentious issue is the holding gains that accrue to investors. If these holding gains were viewed as similar to profits resulting from the acquisition and disposal of a business interest, then the gains would be *halal*. Whether the situations can be equated will depend on how closely connected share prices are to business performance.

This study of the corporation and the *Shariah* indicates that the Western corporation is incompatible with Islamic beliefs. Islam is able to recognise a separate entity, but with unlimited liability. Scope for speculative trading in company shares must also be eliminated. Muslims still need to be able to pursue large-scale business and a modified corporate form using Islamic banks as the major investors could be the solution. The detail of this proposal is presented in Section 5.

V. Towards an Islamic Corporation

The starting point for an Islamic company would be the establishment of a special category of investment accounts, called 'corporate' accounts, at Islamic financial institutions. These accounts could allow customers to designate a particular industry into which they would like their funds to be channelled. A general account would also exist for those who would prefer the bank to make the choice of suitable investment opportunities. Money collected in these accounts can then be used by the banks to obtain shares in big businesses. To qualify for funding, the companies should have a large minimum capitalisation level, which may nominally be set at, say \$300 000. This is because the aim of this proposal is to assist large-scale commercial ventures raise capital. Businesses with capital needs below the required minimum will still have access to finance mechanisms such as *Mudaraba* and *Musharaka* (i.e. a partnership where all parties contribute capital and share profits/losses in an agreed ratio) from the banks. The share sizes available to prospective investors in the Islamic corporations should also be large, for example \$ 75 000. The reason is to make direct investment difficult for individuals, except those who are well enough resourced to compete with the financial institutions. Larger share sizes will, in addition, reduce the number of shareholders. This will forge a closer link between owners and controllers, which is important as the *Shariah* prevents limited liability. It is anticipated that the money from small investors, which enters the stock market, will be redirected into the corporate accounts. This has two benefits. It provides the banks with the extra finance they will need for their new role and still allows the 'mums and dads' investors who have limited expertise to be party to the potential rewards of big business.

Entrepreneurs seeking capital would first register their company[8]. It will be recognised as a separate entity for purposes of commercial convenience, but without limited liability for its shareholders. Its status can be equated to the unlimited liability company defined in section 9 of the Australian *Corporations Law*. An application will then have to be made to the banks to seek their subscriptions to the company shares. Limited advertising to a select demographic of individuals could also take place. The company promoters may choose only to approach certain banks and if offers of shares were received from many sources, they would be free to choose whom to place the shares with.

The banks too can form as separate entities. They should, however, be sponsored by underwriters able to provide very large sums of money, preferably in the millions of dollars. These sums would be committed for a long period of time,

[8] Private companies, whose aim is not public fundraising, could also continue to register a trading name. However, as they would no longer enjoy limited liability, the attractiveness of this option may be diminished.

possibly five to ten years. This would provide the banks with a measure of stability and liquidity. The underwriters would be entitled to profits from all bank services and facilities, including a share of the profits from corporate investment. At the end of the stipulated period, their initial investment may have appreciated or depreciated and they would be free to continue or dispose of their interest in the bank. If the bank were to incur liabilities that cannot be met by its assets at liquidation, the underwriters would have to meet any outstanding obligations. This risk, though, is tampered in the Islamic system for the reasons outlined in Section 4. Where the liabilities relate specifically to corporate debts of entities in which the bank is a shareholder, some of the impact will, as explained below, be cushioned by the 'corporate' account holders.

1.1 Shareholder Regulated Reporting

When applications are received by the banks, a feasibility study should accompany all requests for funding. The bank staff would then prepare an appraisal report on the particular company. Information obtained during this study would be used to design a disclosure package for the entity. By employing personnel with sufficient business and accounting acumen, the banks are able to understand the scope and arbitrariness involved in some accounting methods. This sophistication allows the banks to dictate the timing, format and even the policies to be used in compiling relevant reports. There will also be complete access to all business records if any clarification is needed. For efficiency, each financial institution may choose, from its experiences, recommended reporting styles and mechanisms for certain types of businesses or industries. The flexibility to make changes to suit the characteristics of a given company would continue to exist. The bank, or wealthy personal shareholders, will have the resources to undertake this form of continuous monitoring of their investments. They are also able to have regular contact with management and deal with them on an equal footing, something that the diffuse shareholdings of Western corporations prevent. The monitoring function would create costs for the bank[9]. However, Ahmed (1990, p. 368) in his study of 'partnership' financing by Islamic banks in Sudan notes that when the returns from similar businesses with different monitoring costs are compared, the proportionate increase in profit in the more expensive cases offsets the higher costs. There could, thus, well be an economic benefit from the involvement of the banks as there would be expert scrutiny of business ideas before they are implemented and the shareholders could act in an advisory capacity throughout the life of the company.

It is quite possible for more than one institution to hold shares in a company. It is most likely that the core of the information wanted by the different financiers would be similar. However, arrangements for extra disclosures to meet the specific needs of one shareholder could be made. The appointment/disposal of managers and any other major decisions would still take place by majority vote of shareholders.

1.2 How the Money is to be Collected and Paid

The manner in which the returns generated from investment in companies are to be accumulated and divided also deserves some consideration. Where a company has multiple shareholders, it will be treated as akin to a *Musharaka*. Profits/losses would, therefore, be apportioned according to the level of shareholding. The banks, as mentioned earlier, would be free to specify the method by which income is to be calculated. There could well be set allocations to be retained by the company from each year's earnings, possibly in the form of reserves or retained profits, for future purposes. *Musharaka* rules do allow the parties to change the profit/loss share agreement by mutual consent. Thus, a dividend proposed by management and acceptable to the shareholders can still be used as the means to payout profit. Again, as shares are closely held, investors will be able to give meaningful and informed scrutiny to management's recommendations. Entrepreneur managers, themselves, would be entitled to a special managers' share parcel, which would be smaller than the minimum share size that is offered to the general public. The suggested size is 5 % of the overall share capital of any entity. So, in companies where one institution holds all the 'external' shares, the Musharaka would be between the bank and the managers. Apart from the dividends that accrue to their shares, the banks may feel that some form of management fee out of profit is also appropriate.

Once the bank has collected the returns from all of its shareholdings, it will be responsible for channelling a part of these amounts back to the corporate account holders. The legal basis on which the bank accepts 'corporate' deposits will likewise be a *Musharaka*, where the bank mingles these funds with underwriters' capital to obtain company shares. The aggregate return to all the bank's shares will then be divided between underwriters and depositors in proportion to their contribution to the purchase price of all shares held by the institution. Losses will also be shared in this manner. While the bank is free to decide the maximum amount of underwriters' capital it will

[9] The banks could be allowed to charge corporate depositors a flat service fee to cover some of the cost. As is discussed below, market forces should ensure a fair price.

contribute, a minimum level, expressed as a percentage of the total funds earmarked for corporate investment, should be legislated for. This could be between 20-35 %. The reason is that the underwriters will be the ones in charge of appointing and overseeing the management of the banks and the involvement of their own monies will encourage the underwriters to be diligent in their supervision.

Another important control over the bank's activities will be market forces. It is anticipated that corporate deposits will be accepted for fixed, short terms. To begin with, the proposition is for a term of six months or a year[10]. To attract depositors to these accounts, a bank will have to show a history of good returns. Also, if customers are unsatisfied with the accounts' performance, they will take their funds elsewhere. This gives the bank underwriters and their managers the incentive to choose and monitor investment in companies profitably. In addition, it acts as a deterrent to any misappropriation of the depositors' share of corporate income to the underwriters. Although there might be an immediate gain to the banks' owners from such behaviour, to be competitive over time they need to provide customers the best possible return. It is worth pointing out that the problems of cost allocation would make regulating such disclosure difficult. With corporate accounts, too, policing the correct aggregation and division of income from various companies through mandated disclosure will be complex. While the banks can be asked to release a periodic statement showing the total income from companies and the share allocated to underwriters and depositors, it is felt that a more realistic method of dealing with these issues is to view account holders as customers 'buying' services from the bank. Where service charges are too high or returns low, the patrons will penalise the financial institution by withdrawing their business. This is likely to be a far more effective sanction against manipulation of service costs or returns due to depositors than any form of public reporting.

1.3 Other Issues

The final aspect of this proposal for an Islamic company is the introduction of *inan* clauses in the employment contracts of corporate managers. These could be broadly framed, allowing managers, for instance, to undertake 'all commercial activities commonly associated with persons in their role within the relevant industry'. Hence, fraudulent conduct by company executives would exempt shareholders from liability. Third parties must direct claims in these situations to the managers themselves.

In Section 2, a literature review was used to compile a list of requirements that any Islamic disclosure scheme should satisfy. The focus in this section has been mainly on how shareholder regulated financial reporting within the proposed Islamic corporation can replace mandated disclosures. Avenues to confront the other disclosure issues that were raised can also be found within the corporate structure outlined here. These details and any potential problems are discussed in the next section.

VI. Reporting Refinements

Two areas that were earlier identified as relevant to reporting by Islamic entities are *Zakat* and *Shariah* compliance. Although the structure of the Islamic company would alleviate many of the disclosure concerns of existing shareholders, there could also be a problem in relation to the sale of shares to 'outside' parties. Each of these issues is addressed under three separate headings in this section.

6.1 *Zakat*

Many questions exist about the *Zakat* payments of Islamic companies. The manner in which it is to be calculated for different industries is likely to vary (Clarke et al, 1995, p.7). It is also uncertain whether *Zakat* should be viewed as a personal obligation or one that falls upon the corporate entity (Gambling and Karim, 1991, p.103). This is an important distinction for those situations where the company meets the *nisab*, but the individual depositor, who has a share of ownership through the bank, is below the *nisab*. It is not the intention in this section to definitively tackle these issues. Instead, a system for the collection and administration of *Zakat* from Islamic corporations that can accommodate a range of answers to these questions is suggested.

As was alluded to previously, in early Islamic history, *Zakat* was collected and distributed by a central authority, the *Baitulmal*. Today, countries such as Saudi Arabia and Pakistan have reverted to centralised *Zakat* agencies administered by the state (El-Ashker, 1987, p. 46-51). The establishment of an independent body would probably be the most effective and efficient way to handle the *Zakat* payments of Islamic corporations. A *Zakat* agency would be responsible for developing rules, based on the *Shariah*, to govern the calculation of the amount due for particular business sectors. The companies would submit a return each year, prepared according to agency specifications, displaying their *Zakat* obligation. All *Zakat* monies would be paid directly to the authority. Functioning like the tax office, the agency could conduct surprise audits of a sample of companies to check that proper disclosure had been

[10] As banks become more adept at accounting for and collecting returns from companies, this period can be shortened.

made. It is important, though, to distinguish *Zakat* from taxes generally. *Zakat* is fundamentally an act of worship, part of what are referred to as the five pillars, or essential fundamentals, of Islam. This strong moral basis should act as a disincentive for the creation of a *Zakat* evasion industry. In addition, unlike taxes, the recipients of *Zakat* funds are clearly designated by the *Quran*, being mostly charitable and religious causes, and are not to be used at the discretion of the government in power.

A copy of the *Zakat* return could also be forwarded to each shareholder. The banks would then tally the total *Zakat* amount paid by their companies, expressing it as a per dollar amount of the total invested through corporations. A notice indicating this figure would be passed on to all corporate account holders. If a depositor's personal wealth did not exceed the *nisab*, he/she could use the notice to claim a rebate from the *Zakat* authority for the money already paid on his/her behalf. The procedure could draw on the experiences of franked dividends that exist in Australia (*Income Tax Assessment Act 1936* Part IIIA). This last part would only be necessary if it was decided that the company should not pay *Zakat* as a collective.

In non-Muslim countries, a bank's religious supervisory board would have to perform the role of the agency. It would promulgate the *Zakat* rules for its companies, collect and distribute monies and conduct audits. As it is an internal body, the board's credibility and independence would be paramount. These qualities are also necessary for what is envisaged in this paper as its main function and they are further explored under the next heading.

6.2 *Shariah* Compliance - Islamic Social Accountability

Islamic financial institutions already have *Shariah* Supervisory Boards to ensure that their activities are within the confines of Islamic law. The Board is thus ideally placed to also monitor whether companies in which the bank has a shareholding abide by the *Shariah*. Every application for corporate funding should be presented for approval by the Board, which could at this stage identify and demand some from of appropriate, regular assurance about areas of concern. Remembering that in Islam socially desirable behaviour is aligned to activities that accord with the *Shariah*, the Board's work could subsume the areas that come under the umbrella of social disclosures in Western accounting. This could first require the framing of an Islamic response to recent issues on which a *Shariah* position does not already exist. There have, for example, been attempts to reconcile Islam and the environment (Dolatyar, 1997, p.2). Once an Islamic stand is established, the *Shariah* Board would be responsible for implementing measures to see that it is followed by companies.

To successfully undertake this task, the Board must be immune from commercial pressures. The reputation and integrity of its members will, therefore, be critical. It may be possible to claim that the religious education and background of the Board members provides some security that the Board will pursue its role sincerely. Anecdotal evidence supporting this view is available, with reports that the Kuwaiti Finance House's resident *mufti*, or religious scholar, does not allow his bank to participate in hedged dealings, forcing it to operate in spot markets (Cooper, 1982, p.123-125). There is also the example of the Boards of the Sudanese banks recommending that cash accounting be used for *Murabaha* financing.[11] The fact that applications from company promoters are likely to be forwarded to a number of institutions could moreover provide a means to police the activities of renegade Boards.Where only one Board accepts a certain proposal, the others could ask for an adjudication from a 'Supreme National Shariah Council', that would be similar to the body in Pakistan that oversees Mudaraba companies. The Council would act only in situations of fundamental violations as the *Shariah* does permit difference of opinion on matters of detail (Ramadan, 1961, p.77-78). Where the difficulty has arisen on a point of technical detail, the Council can issue a clarification indicating its opinion. These rulings could assist in eventually achieving uniform practice amongst the banks. A Council could also have the job of accrediting suitable individuals to sit on a bank's Religious Board.

6.3 Trading in Islam

Apart from the general concerns about *Zakat* and *Shariah* compliance, there is a final problem, which is peculiar to the structure suggested in this paper for an Islamic corporation. It has been illustrated that one method to deal with unlimited liability is to channel investment through banks for all but the wealthiest investors. A consequence of this setup is that the number of shareholders is reduced and the financial institutions and large-scale investors have free access to all business information. The need for regulated reporting to existing shareholders is thus eliminated. However, when shares are being traded, the buyer has to rely on information the seller releases. On this basis, it could be argued that mandated reporting is still essential. This, though, confuses the probable manner in

[11] *Murabaha* is an arrangement whereby Islamic banks purchase commodities and sell them at cost plus a mark-up. The cost plus mark-up is payable in instalments. The purchaser must be made aware of the cost and mark-up amounts.

which share transfers would take place in this system. It is unlikely to be characterised by the anonymity of Western share markets (Gambling and Karim, 1991, p. 81-83). An Islamic capital market would list available shares and display offers to sell /buy particular shares. Institutions could then directly approach the owners of share parcels they are interested in, the smaller numbers and greater resources allowing this access. The bargaining for an agreed price would thus take place between two 'big players'. The buyer will have the sophistication to judge the quality of accounting numbers presented to it and can ask for particular figures and other information that it wants. A bank may adjust the price it offers or withdraw from the purchase if the material it wants is not forthcoming. So, once again, it would be sufficient for the Islamic capital market to simply issue a recommended reporting format for listed companies.

This section has introduced reporting devices to meet all the disclosures demanded by Islam. The ideas are a natural offshoot of the framework proposed in the paper for an Islamic company. It has hopefully been illustrated that a comprehensive disclosure scheme can be designed around the structure of the Islamic corporation. The detail of some of the suggestions can provide subjects for future research.

VII. Conclusion

This work has had two major streams. It has sought to devise an entity that will allow Muslims to raise the necessary finance to conduct large-scale commerce. Simultaneously, it has presented ideas for a reporting scheme that suits this new structure. The need for a connection between the business form and its disclosure considerations was illustrated in Section 3. There the results of applying AAOIFI standards to a unique Islamic enterprise, the *Mudaraba*, were analysed. These standards, although screened against the *Shariah*, had as their basis the Western corporate framework. It was shown that this lack of consideration for the legal features of the *Mudaraba* led to reporting that was misleading. Thus, the theme in this paper that Islamic accounting needs to be reoriented towards accounting for an Islamic company.

The study listed four questions in its introduction. The last words will be the short answers to them. The entity that Islam has to account for is an unlimited liability corporation, the major funding for which will be channelled through the Islamic financial institutions. The information that the entity will have to disclose includes *Zakat* and *Shariah* compliance details, as well as financial information. This information needs to be submitted to the shareholders, who, with the exception of *Zakat*, are free to choose the timing and format of reports. *Zakat*, and possibly the institutions' *Shariah* Boards, will, however, have some external controls. Through this Islamic company and its supporting reporting mechanisms, Muslims would have the means to participate in 'big business' without compromising their religious teachings.

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Competency of Shariah Auditors: Issues and Challenges in Pakistan

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Abstract: Purpose – The Islamic financial system has a crucial necessity to manage the competency requirement including knowledge, skills and some other obligatory abilities to fulfill the increasing industry loads. This paper proposes a novel idea of knowledge, skills and other abilities (KSOA) for the framework of Shariah auditors that can enhance their current performance to improve the Islamic financial system.

Design/methodology/approach - The study is based on mix method to present a new model for Shariah auditors in the Islamic Financial Institutions of Pakistan. The study has utilized the collection of information available in the previous literature. The study presented a model to be followed by IFI's while appointing Shariah Auditor based on their knowledge, skills and other related abilities. Extensive study of the literature has been undertaken to present the model.

Research limitations – This paper is a Pakistan based study, so situation may differ from that of Pakistan in other countries.

Findings - This article gives an overview of current situation regarding issues and challenges, concerning the competencies required for Shariah auditors in the Islamic Financial Industry of Pakistan. Literature review and study of practitioner's qualification shows that required knowledge about Shariah audit is still not established. It has been found that the internal auditors perform Shariah audit in IFIs in the light of Shriah governance framework given by State Bank of Pakistan (SBP). The study also resulted that most of Shariah auditors working in IFIs have no experience and qualification about Shariah audit and Islamic banking. Moreover the past study in Pakistan has not pointed the specific knowledge, skills and other abilities required for shariah auditors.

Originality/value – This paper is a value addition in the literature of Islamic finance which suggests that Shariah audit is one of the major concerns for the Islamic financial institutions of Pakistan. Therefore, the need of skillful and professional manpower which efficiently and effectively apprehends the both i.e. Shariah and Contemporary audit set of regulations has been established in Islamic banking industry of Pakistan.

Keywords – Competency, Shariah audit, IFI's, Knowledge, Skills, Other abilities, KSOA

1-INTRODUCTION

The increasing interest to understand Islamic financial system in the past two decades shows an enormous increase in the establishment of healthy Islamic banking system in Pakistan. According to the state bank of Pakistan (SBP) reported that the assets of the Islamic banks in September 2014 were 1102 billion rupees and their deposits recorded were 934 billion rupees. The market share of Islamic banking assets and deposits in overall banking industry increased 10.7 percent by the end of September 2014. In September 2015 the assets of Islamic banks reached to 1511 billion rupees and its deposits reached to 1271 billion rupees. The market share of Islamic bank's assets and deposits in overall banking industry reached up to 11.2 and 13.1 percent respectively (Islamic Banking Bulletin 2014 & 2015).

The world financial crises also increased the growth of Islamic financial institutions and the assets of Islamic financial industry had grown 19 percent in 2011 and 21percent in 2012 as compared to less than 10 percent increase in conventional banking system across the globe (Popper, 2013). This shows that consumers adopted Islamic financial industry cumulatively as compared to the conventional banking sector. It ascertains that there lie great possibilities for Islamic financial institutions (IFIs) to grow effectively. After all, the main aim of IFIs is to establish the Islamic values in all phases of financial matters. Any Islamic organization especially IFIs need to have consistent governance model and suitable policies that will boost the application of healthy and real corporate governance according to the principles of Shariah (Hassan, 2010). All the stakeholders of Islamic banks such as account holders, investors, shareholders, employees etc, have a high interest to support the Islamic values and principles. The only way to protect and retain the stakeholder's interest is by confirming Shariah complaint

processes and proposing Shariah complaint facilities. Accomplishing this purpose the process of Shariah audit is implemented by IFIs to increase the assurance of the stakeholder's credence regarding the system.
According to our best knowledge it has been observed that there is limited literature available discussing the phenomenon of set rules, process, qualification and competencies required for Sharih auditors to be deputed in IFIs. The Islamic financial system has a crucial necessity to manage the competency requirement including knowledge, skills and some other obligatory abilities to fulfill the increasing industry loads. This paper proposes a novel idea of knowledge, skills and other abilities (KSOA) for the framework of Shariah auditors that can enhance their current performance to improve the Islamic financial system.

1.2 OBJECTIVE OF THE STUDY

This paper is a value addition in the literature of Islamic finance which suggests that Shariah audit is one of the major concerns for the Islamic financial institutions of Pakistan. Therefore, the need of skillful and professional manpower which efficiently and effectively apprehends the both i.e. Shariah and Contemporary audit set of regulations has been established in Islamic banking industry of Pakistan.

2-LITERATURE REVIEW

Competency is the capability which leads the person in an organized way to make the procedure of identification, evaluation and development of behaviors comfortable (The IIA Global internal Audit competency formwork 2014). Competency can be categorized as the measurements of different activities linked to the better individual performance (Woodruf, 1993). Furthermore, it is related to the knowledge and some technical skills to do a job with professional attitude. It is noteworthy to know that competency can be general or organization specific. Drejor (2001) divided the competency in four different types 1) Competency in the form of technology 2) Human resource 3) Organization 4) Informal organizational culture of the companies. This infers that competency belongs to the abilities of individuals with potential to achieve some goals in the organization and complete different tasks in the given time frame.
According to Mensoori et al, (2009), the auditor needs to put emphases on accounting and auditing professional program to certify that they are up-to-date and can address the contemporary challenges. It is mandatory for a person performing audit and prepare the report must have the adequate knowledge and corresponding experience [Gul et al, (1994, p. 25)]. It shows that they should get both formal and informal training during their whole careers. Noor (1996) argues that for the success of any profession the following three points are essential, advance information, continuous professional education and minimum level of professional qualification. The auditors are required to triumph these three points through professional education of audit, research and training programs. According to Moutz and Sharaf (1986, p.140) a careful auditor is expected to have a deep knowledge, experience and skills of executing work independently.

2.1-PROFESSIONAL COMPETENCY

It is expected that auditors have to establish an extensive scope of competencies. From the perspective of accounting profession, the guideline on the international education standard (IES 8) of international federation of accountants (IFAC) is the required competence for auditors which summarizes formal audit education(IES 2), professional skills(IES 3) and ability of applying professional expertise, morals, principles and ethics in diverse conditions and organizations (IES 4). On the basis of these guidelines it could be inferred that competency is the amalgamation of knowledge, skills and abilities, which is the base to measure the general competency of the auditor.

The institute of internal auditor research foundation (IIARF), which is the part of institute of internal auditors (IIA), a regulatory body of internal auditors, conducted a comprehensive research in 2011 to 2013 to find the stakeholder's opinion on the competency of internal auditors. Through this study it was observed that either competency valued higher or lower, exposing a major gap among internal auditors and stakeholders. This research also showed that the high rating competency components were objectivity, confidentiality, professionalism and ethics as opposite to lower rating for negotiation skills, data collection, business analysis and analysis tools and techniques. Beside this the traits in which the stakeholders give internal auditors lower rating then the internal auditors themselves was understanding the business process, nature of business and problem solving skills. It is very interesting that in some areas the stakeholders view the internal audit performance higher than the internal auditors themselves (IIARF 2014).

Previous research showed that a big multinational audit organizations provide audit quality (e.g. Leuz and Verrecchia 2000; Asbaugh and Warfield, 2003). Because of greater audit ability the large audit organizations provide a better audit quality (Watts and Zimmerman, 1986). Pickett (2000) outlines several internal auditing competencies for the internal auditor of the companies to be able to face the changes in their working environment. To achieve the continuous development the companies must have to develop in-house development program and they also need to improve their personal audit competencies. Pickett (2000) also suggests that competency may be attained through the interaction of three elements, termed as three circles approach i.e. 1) Auditing Standards 2) Auditing Products 3) Organization risk management strategy. Furthermore, the organizations must have to arrange training programs for their audit staff to make them compatible with the changing working environment.

2.2-SHARIAH BASED HUMAN COMPETENCY

A suitable human capital is an essential part to support the validity of Islamic financial product and services. In addition, the accessibility of the trained human resource to produce sufficient groups of suitable Shariah professionals and experts is important to lead Islamic financial services and products (Laldin, 2011). Natt et all, (2009) argues that in the light of Shariah perspective a person must have a deep understanding and robust commitment to the basics of Islamic philosophies and ideologies. Different Islamic countries adopt different accounting standards so it is a crucial task for the coming accounting graduates to learn different accounting standards whilst IFIs chart different accounting standards. For instance, the study of El Razik (2009) shows that different Muslim countries used different accounting standards because of their different culture and business environment, and also we have to produce proficient graduates from Pakistan if we expect them to understand the international accounting standards and also the standards used by different Muslim countries however, they want to work out of Pakistan. The production of the experts and graduates having well knowledge of accounting and Shariah at same time before they enter the corporate industry is also a big challenge for academicians and scholars. This suggestion is also recommended by Abdul Rehman (2006) and Price Water House Cooper (PWC) survey conducted in 2011. They propose an increase in the human capital capable Shariah audit. The past empirical findings also suggest that it is necessary for accounting apprentices to read Shariah audit as a part of their syllabus. To fulfil this high demand the IFIs and the academia are advised to design new courses and training programs.

2.3-GENERAL COMPETENCY DIMENSIONS

The issues of competency have been discussed by different researcher in different disciplines. The technological revolution has set new goals for the employees to update their skills, knowledge and abilities accordingly (Heilmaan, 2007). Emotional and social competencies with cognitive intelligence can foresee the efficiency of leadership, professional and management responsibilities in many area of society (Boyatzis, 2009). Majority of financial professionals are unable to practice sharia concepts because of the conventional background, which might lead to clash of interests (Hussain & Parker, 2010). To produce competent Shariah auditors and to make additional parameters to address the Shariah audit problems, it is suggested to spend on educational facilities. According to a study by Kaseem and Muhammad Sanusi (2013) entitled "Issue of auditor qualification in Malaysia" it was observed that only 5.9~~%~~ respondent were there who qualified in both Shariah and auditing or accounting qualification as compared to 69~~%~~ who claimed to work in IFIs as Shariah auditors. Another research accompanied by Yahya and Mahzan in (2014) also supported the results, according to which 76% of internal auditors who practice Shariah audit have no knowledge of Islamic financial system. It was found that almost 39% of Shariah auditors have 10 to 12 years' experience of conventional banking and only 6% of them have 10 to 12 years' experience of Islamic banking. This points out the problem of unsatisfactory skilled human resource of Shariah auditing, which needs to be resolved that might affect the image of IFIs to all financial users. In order to perform a comprehensive Shariah audit of IFIs, it is of utmost importance for Shariah auditors to have deep Shariah knowledge of Islamic financial system.

3-METHODOLOGY

The study is based on mix method to present a new model for Shariah auditors in the Islamic Financial Institutions of Pakistan. The study has utilized the collection of information available in the previous literature. The study presented a model to be followed by IFI's while appointing Shariah Auditor based on their knowledge, skills and other related abilities. Extensive study of the literature has been undertaken to present the model.

4-DISCUSSIONS FINDINGS AND MODEL

There are three main elements related to the competency of Shariah auditors. These are knowledge, skills and other abilities. In IFIs working in Pakistan, more than 80 percent practitioners are qualified only in accounting and auditing or in Shariah and only 20 percent have Shariah, accounting and auditing qualification at same time. In addition to that 90 percent Shariah auditors having only 3 to 5 years' experience of Islamic banking. This shows the situation of competent Shariah auditor is not good in Pakistan. Below Table 1 shows the analysis of the data collected from a total of 70 out of a total of 100 questionnaires which were distributed among the Shariah auditor involved directly or indirectly in the audit of Islamic Financial Institutions. The analysis was made on the basis of mean values and the variance on the standard of Strongly Agree (5.00) and Agree (4.00) which is tabulated as under.

Th ebelow descriptive statistical results were found for the Qualifications of the Shariah auditors. This point toward the total difference between what is and what is desired Qualification of Shariah auditors in IFIs of Pakistan.

Table 1 Descriptive statistics

Aggregate mean values		Variance	
Desired Qualification	The "Actuals"	At 5 Rating	At 4 Rating
(5-4) A shariah auditor must be expert of accounting and shariah knowledge	(1.05) Ratio of the working Auditors	3.95	2,95

SHARIAH AUDIT PROCESS

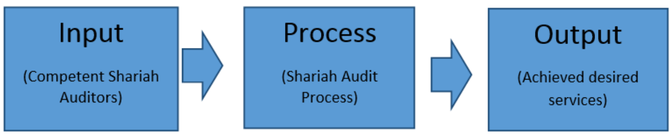

Figure 1:"shariah Audit Process"

Figure 1 gives a planned synopsis of the process of shariah audit. The ultimate target of this audit is to ensure shariah based products and services for the customers and conforming to Maqasid al sharia, which is for the elimination of Haram and hardships for the protection of public interests (Lahsasna, 2013). In order to complete a successful audit process some features such as regulation and human capital must have to inject in the first step which is input. This paper focuses on the first step especially on the competent human capital to implement proper and strong Shariah audit process. In the 2nd step the competency will be explained briefly as to cover knowledge, skills and other abilities, abbreviated as KSOA in the paper. The 3rd and last step is output which is the result of the Shariah audit process. This process comprises audit planning, documentation, review and result submitting. If such audit model is designed to get Maqasid al Shariah and to fulfil the needs of stakeholder regarding Islamic banks, the only preferred Output in the form of achieved desired services can be delivered successfully.

4.1 COMPETENCY REQUIRMENTS FOR SHARIAH AUDITOR

Figure 2 gives a planned overview on suggested factors of the KSOA model about competent Shariah auditors. The following discussion will bring the detail information about these factors.

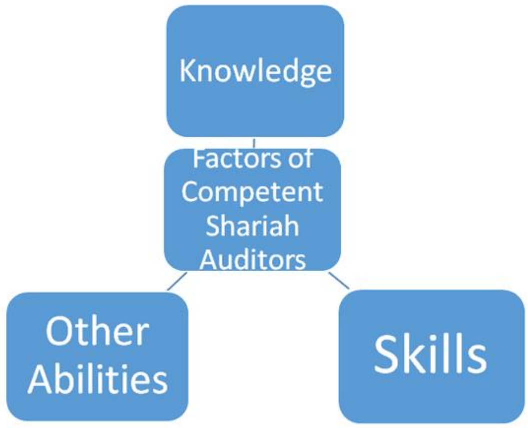

Figure No.2: Suggested factors of KSOA Model

4.2 KNOWLEDGE

"Merrriam web star Lerner dictionary" defines the knowledge as, Information, understanding or skills that you get through experience or education: awareness of something: the state of being aware of something. So generally knowledge is the understanding of something but in the perspective of Shariah auditor it can be general and specific. The general knowledge means the formal education based on the syllabus which Student get through their college and university. Natt et all, (2009) suggest two type of knowledge for a Muslim worker, i.e. revealed and acquired knowledge. The acquired knowledge means the knowledge that a person gets through his learning years in different institutions while revealed knowledge means the main source of knowledge revealed by Allah. To produce knowledgeable and well balanced worker to perform in Islamic financial institutions is possible only in one case when both acquired and revealed knowledge are implanted in human capital development and training programs. The required education for Shariah auditors in Pakistan can be classified in two categories i.e. University education and Madrassa education. General education obtained from universities is helpful in various disciplines in Islamic banking. But unfortunately there is no university in Pakistan offering Shariah audit in their accounting degree. Recently the only specific education by which competent Shariah auditors can be produced is the combination of madrassa and university education or some other agencies providing training about Shariah audit like Darululoom Karachi, Alhuda center of Islamic banking and economics (ACIBE), and center for Islamic economics Karachi.

The research institute of internal auditors IIARF (International internal auditor's research foundation) conducted a survey from the whole world to regulate their own common body of knowledge (CBOK) in 2006 and 2010 on the internal auditors. They want to document how internal auditors are practicing and they also want to find out the internal auditor's focuses area of knowledge (IIARF, 2010).

4.3 SKILLS

Business dictionary defines the skill as "An ability and capacity acquired through deliberate, systematic, and sustained effort to smoothly and adaptively carryout complex activities or job functions involving ideas (cognitive skills), things (technical skills), and/or people (interpersonal skills)." Hoffman, Hampe and Muller (2010) also support this idea they discovered the skills in two forms 1): Cognitive; involving creative and logical thinking 2): Practical; involving in the using of resources and methods. Wodruff (1992) suggested that for a competent worker, technical and communication skills are very impartment. As an internal auditor it is very necessary for Shariah auditors of Islamic financial institutions to gain the knowledge by which they become able to understand all types of transaction being occurred in their institutions, and then they will be able to protect their organization from all non Shariah compliance product and services. To achieve this phase their knowledge must have to exceed the knowledge of conventional internal auditors about banking process. CBOK (2010) (Common Body of Knowledge) divide the skills into two core classes, the first one is technical skills and the 2nd one is behavioral skills. Then they also recognized the five core technical skills i.e. understanding of business, governance, recognizing kinds of control, risk analysis and control valuation technique, risk and control tools and technique business process analysis. CBOK (2010) also categorized behavior skills into five core skills i.e.ethics sensitivity, objectivity, communication, confidentiality and judgment besides governance (IIARF).

4.4 OTHER ABILITIES

It means the behavioral aspects of an individual which should be definitely differ from other individuals (Hoffamn, et al, 2010). The institutions who want to hire best candidates for their professional vacancy they must have to build such recruitment process which should be able to identify such traits in junior candidates with the help of psychological test.
Generally for both internal and external auditor's combination of these three components are necessary to produce competent Shariah auditors. A competent Shariah auditor must have to gain basic Shariha knowledge about Fiqh ul Muamlat and Shariah audit for understanding and scrutiny of banking documentation. Current education system in universities is not able to produce competent Shariah auditors because no university in Pakistan have Shariah audit subject in their graduate's curriculum. In a right sense Shariah audit cannot be adopted by the Shariah auditors during their job without these three elements discussed earlier.

5-CONCLUSION

This article gives an overview of current situation regarding issues and challenges, concerning the competencies required for Shariah auditors in the Islamic Financial Industry of Pakistan. Literature review and study of practitioner's qualification shows that required knowledge about shariah audit is still not established. It has been found that the internal auditors perform shariah audit in IFIs in the light of Shariah governance framework given by State Bank of Pakistan (SBP). The study also resulted that most of Shariah auditors working in IFIs have no experience and qualification about Shariah audit and Islamic banking. Moreover the past study in Pakistan has not pointed the specific knowledge, skills and other abilities required for Shariah auditors.

After developing the CBOK, the academia will be clear about how to produce competent Shariah auditors so that the profession of Shariah audit gets its importance in the market.
This study recommended is for Shariah auditors to get more and more knowledge and exposure about Shariah audit through different training programs conducted by different organizations. This study also advised the academia to offer Shariah audit courses with other courses of Islamic finance to produce competent Shariah auditors and fulfill the needs of future.

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Socially Responsible Islamic Investment (SRII): a Review of Related Literature

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Abstract—The global financial sphere has seen the tremendous growth of socially responsible investment (SRI) from the perspectives of conventional financing. Whereas Islamic investment industry has yet to attract the attention of the global SRI industry. This study aims at exploring the area of SRI in Islamic investment industry and seeks to bridge the gap between the two. We used literature review process introduced by Pittaway et al. (2004) to select papers on SRI. Total twenty-two papers indexed in Scopus, covering both conventional and Islamic domain of SRI have been selected, and analyzed. The past research findings show that there are insufficient supplies of SRI fixed income instruments in the Islamic finance industry. They also show that there is no adverse effect on return among Shari'ah-compliant and conventional SRI. The literature review methodology adopted in this study limits its ability to provide primary evidence on SRI industry. Nevertheless, it is debatable whether Islamic finance is making a difference through innovating sustainable and SRI vehicles. One of such instruments, SRI Sukuk, has been reviewed, and its potential for making significant social and economic contribution to a Muslim country is provided through the review of past literature. It is expected that findings from this study will allow investors realize the importance of SRI which will improve its position in the global SRI market. It would also help enhance the global reach of the Islamic finance industry and in pitching its value proposition at the right platform. Cebeci (2012) was the first to integrate the social maslaha into Islamic finance, and this study aims to extend the existing knowledge on SRI among Islamic finance industry with a special emphasis on the maslaha principle of maqasid Shari`ah.

Keywords: Socially Responsible Investment, Maslaha, Islamic Finance, Sukuk

I. Introduction

The SRI works at the interface between the 'real economy' and the financial industry (Demuth, 2014). By definition, it encompasses any ethical concept or belief system with the integration of non-financial criteria into the decision-making process (Kurtz, 2009). Islamic finance industry works within the Shari`ah framework and incorporates ethical banking with limited interaction between actors of the two fields (Ünal, 2013). In 2012, Islamic finance assets stood about $1.3 trillion (in USD) globally (Davies, 2012). The growth of the industry has been consistently upward, growing a compound annual growth rate of 17 percent from 2009 to 2013 with an estimated to be worth $5 trillion in 2020 (IFSB, 2015). In comparison, SRI in Europe and US alone add up to over $12 trillion for the same year (Eurosif, 2012). However, according to the UK government, the market is still embryonic and is way below its potential scale (Marwan and Engku, 2016).

As calculated in 2014 SRI, also known as ethical investments, has reached $21.4 trillion of assets under management, which is an increment of 61% from $13.3 trillion in 2012. This fact shows that the investors are becoming more concerned about the social impact of their investments than ever before. On the other hand, Shari`ah compliant investments, though, follow the criterion which is supposedly governed by the golden rules of Islamic law; and that approach is superior to that of conventional ethical investment; however, Islamic funds hold only $75.8 billion of assets under management as of 2014.

The SRI is considered both financial and non-financial returns with the concern toward environmental, social and governance (ESG) issues. Around the world, SRI has proven to be a significant investment instrument. It has seen a massive growth through the increasing involvement of the major institutional investors (Roca et al., 2010). The interest and support for SRI have generated the creation of specific share indices such as Dow Jones Sustainability Index (DJSI) and FTSE4GOOD Index Series.2 Roca et al. (2010) found that SRI markets are significantly interdependent and have become more so over the years. There have been debates that SRI leads to lower performance for participating companies. Peylo (2014) rationalized through critical review of literature that SRI is not necessarily less rational than traditional investment can be implemented in a rigorous equity methodology. Social Responsibility can contribute toward business success. It can build sales by developing the workforce which in turn will boost enthusiasm and innovation. The result is enhanced trust in an enterprise and increase a company's reputation and standing. The link between corporate social responsibility (CSR) and competitiveness was explored by Battaglia, Testa, Bianchi, Iraldo, & Frey (2014) with a sample *of 213 small and* medium-sized enterprises (SMEs) located in Italy and France, and found significant correlations between competitiveness variables and CRS practices adopted. Boehe & Barin-Cruz (2010) showed that attention paid to environmental impacts could support performance in export markets through product diversification. Similar results were found by Edereka-Great (2015), and the authors point toward social changes that might lead to SME business leaders to embrace SCR practices to benefit stakeholders through making sustainable profits.

It seems that the Islamic investment criterion and industry have not been given their rightful position, and they are yet to attract the attention of the global SRI industry. Given that, there is a need to investigate the area of SRI to find more opportunities for Islamic finance to avail. This research correctly aims at this point by exploring the area of SRI in Islamic investment industry and seeks to bridge the gap between the two. To achieve this objective, it aims to compare and contrast the two industries; highlights difficulties faced by the Islamic investment industry in this regard, and finally propose possible recommendations to deal with those issues.

II. Literature Review

The SRI can be traced back to the 18th century. During that time, several religious groups such as Quakers had excluded companies involved in slave trading from their business (Schwartz, 2003). The boycott of South African companies to end apartheid in the 1980s have supported the development of SRI industry (Visser, 2012). The emergence of Islamic finance has some similarities with the growth of SRI, but there is a marked difference between SRI and Islamic finance in communicating information for investor decision making. One of the major distinctions is the introduction of "Shari`ah Boards" in Islamic financial institutions which have the fundamental duty to determine the Shari`ah compliance of a financial product or investment. But, the financial statements of Islamic banks provide only brief information regarding the activities of the Shari`ah supervisory board (Demuth, 2014).

Marwan and Engku (2016) have identified several commonalities shared by Islamic finance and SRI instruments. They have their roots from Islamic doctrine, guided by the principles of Shari`ah and share the principle of using money or wealth in a way that confirms to the traditional finance practice that is mainly driven by the aim to maximize risk-adjusted return. There are other similarities found by Bennett and Iqbal (2013) between Islamic fiancé and SRI. Since their introduction, both industries have focused more on equity than on fixed income investments within the capital market sphere. SRI traditionally has been a strategy applied mainly to equity investing through the application of various types of portfolio screening techniques which allowed financial intermediaries to create Shari`ah compliant and SRI equity products than fixed income ones (Bennett and Iqbal, 2013).

Miglietta and Forte (2007) discuss a quantitative and qualitative comparison between Shari`ah compliant and SRI funds' investment style and finds that Islamic and SRI funds exhibit different characteristics in terms of asset allocation. Financial theorists following Capital Asset Pricing Model (CAPM) principles argue that SRI portfolios are likely to underperform over the long term because they are subsets of the market portfolio. Elias (2012) has explored the compatibility of Islamic ethical principles with SRI practices with a panel data of self-composed Shari`ah compliant portfolios that differ in ESG criteria into a Shari`ah-compliant investment. The study reported no adverse effect attributed to ESG screens over the 2008 – 2011 periods. Chowdhury and Masih (2015) take a comparative approach in comparing Islamic finance and SRI portfolios using ARDL bounds testing3 approach and indicate that SRI and Islamic funds have significantly different behaviour in both the short and long run.

There have been several financial tools developed with SRI strategies such as Social Impact Bong (SIB) and Sustainable and Responsible Investment Sukuk to help alleviate the social problem of poverty, also to help provide economic security for society. Due to its socially driven objective, the SIB model falls into the gambit of the SRI sphere, while Sustainable and Responsible Investment Sukuk is said to be a form of SIB that is modelled using the Shari`ah-based contracts (Azman et al., 2016). Green bonds have similar features and allow for the issuer to borrow funds with the promise to pay back the money with a distinction that it offers investors the opportunity to participate in the financing of projects that support climate-related projects (Bank, 2015).

III. Methodology

The study was designed to provide an explicit review of SRI through selecting and analyzing relevant papers. Papers that dealt with both conventional and Islamic SRI themes are chosen in this study. Based on the extensive review of selected literature, this study was able to provide a description and evaluation of the current body of knowledge on SRI, and introduce a pathway for Socially Responsible Islamic Investment (SRII). Steps formulated by Pittaway et al. (2004) for a literature review are followed in this study.

First, keywords were identified based on the consideration of the prior literature to construct a search string. Keywords defined in the first step were used in Google Scholar to gather relevant papers. Also, the basic search string "Socially Responsible Investment" was used in Emerald to identify the key citation index for review. Using such search criteria, forty papers were obtained. Two stage process was used to select papers for the literature review. First, papers indexed in Scopus and discussed SRI are selected. In the second stage, the abstracts of the articles were checked to verify the compatibility of the paper with the undertake research area. Such inclusion and exclusion criteria resulted in the identification of twenty-two papers that discussed SRI from both conventional and Islamic perspectives.

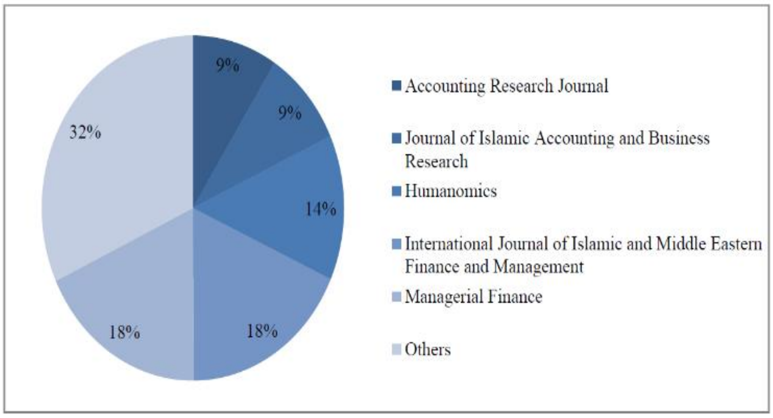
A. Data and content analysis

We have found that only three papers have gathered data for empirical analysis using a survey method; in ten papers data have been gathered through case study approach, whereas rest of the paper have utilized various secondary databases to gather data for empirical analysis on SRI. As almost half of the studies have used a case study approach, it is safe to infer that the concept of SRI has not yet been fully explored using an in-depth interview with various stakeholders. Table 1 indicates that fifty percent of the papers are empirical in nature, which has focused on exploring the trends in SRI in the context of developed and developing countries. Rest of the papers are qualitative in nature and discuss the concept behind SRI. Finally, papers selected in the study are divided based on their focus. Twelve papers concentrate on Islamic SRI, and two focuses on both Islamic and conventional SRI, the rest of the papers have discussed conventional SRI.

Table 1: Characteristics of selected papers Total (n = 22)

Study Methodology	
Case Study	10
Survey	3
Database	9
Nature of article	
Conceptual	9
Empirical	11
Literature review	2
Research Design	
Qualitative	11
Quantitative	11
Mixed	0
Scope of Research	
Islamic	12
Conventional	8
Both	2

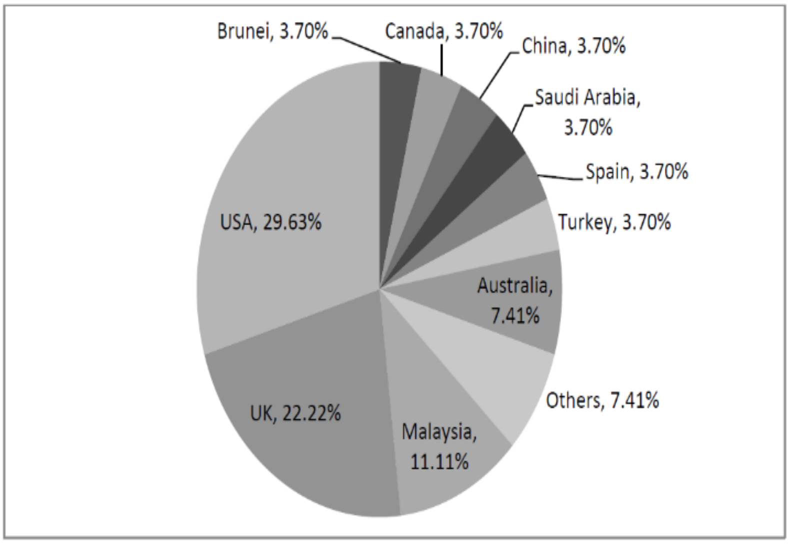
Figure1: Contributions of top journals in SRI literature



B. Descriptive analysis

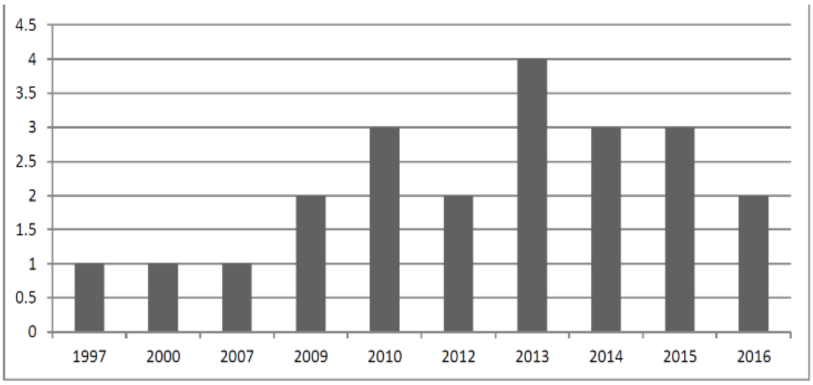
Figure 1 provides the notion that literature on SRI is scattered in several journals containing multidisciplinary topics. Top five journals that contribute to the literature of SRI include Managerial Finance, International Journal of Islamic and Middle Eastern Finance and Management, Humanomics, Journal of Islamic Accounting and Business Research, and Accounting Research Journal. These results show that there is a growing interest in SRI and research interest covers both conventional and Islamic SRI.

Figure 2: SRI literature across countries



In figure 2, the review papers are analysed according to the countries that feature within studies. It is found that SRI issues have been explored mostly in the context of US and the UK financial sector. Malaysia is ranked third in the list but provides most of the Islamic SRI discussions. Selected papers are further analysed according to their year of publications. Figure 3 proves that SRI is a recent phenomenon as the majority of the papers have been published after year 2010. More specifically, issues concentrating on Islamic SRI have attracted researchers' attention after 2012 and papers published before that period have addressed conventional SRI issues.

Figure 3: Distribution of paper per year of publication



IV. Results

Review of the literature has led to the identification of three board themes that are narrowed down into sub-themes for consistent discussion. As mentioned in Table 1, papers included in the review process discussed conventional and Islamic SRI, in two instances authors provided a comparative analysis of both conventional and Islamic SRIs. Thus, the first theme of the study concentrates on discussing SRI from conventional perspectives before moving on to Islamic and comparative themes.

A. Socially responsible investors

Junkus and Berry (2010) provide valuable information by exploring the demographic profile of SRI investors. The study found through the survey of a large group of US-based, well-informed, individual investors that typical SR investor is younger and well-educated than non-SR counterparts. Results provided by the study validate findings of Rosen et al. (1991). In a similar study, McLachan and Gardner (2004) concluded that demographic profiles have no impact on the SR investors while compared with a group of non-SR investors. In a study of Austrian customers, Getzner and Grabner-Krauter (2004) found that higher education and higher income were the main explanatory variables for the consumer's willingness to consider green criteria for stock investments.

While rationalizing SRI, Peylo (2014) integrated the financial theory of Miller and Modigliani (1961) and stated that rationale investors prefer more wealth to less and invest into the market portfolio that offers risk diversification. Pilar and Martí-Ballester (2015) analyzed investor reaction to SRI through a sample of 573 pension plans. Fixed effect panel data model revealed that investors prefer traditional pension plans to ethical pension plans. On the contrary, Renneboog et al. (2011) commented that US investors in SRI funds might be more concerned about the non-financial attributes than firm performance.

B. SRI and firm performance

An indication of preference in non-financial attributes among investors (Renneboog et al., 2011) has led toward the exploration of the second sub-theme. Under this category, papers analyzing the association between SR investment and firm performance are investigated. Recently, Wang et al. (2015) provided some insights into the relationship between socially responsible leaders, the key drivers of CSR practices and organisational performance. The results suggest that socially responsible leaders were positively related to organisational performance and return on equity. Hurtt et al. (2000) investigated whether chief executive officer (CEO) compensation levels are more associated with traditional performance measures for socially responsible firms than for firms deemed not socially responsible. Information on CEO compensation and performance variables was available for 270 different firms from Business Week and Forbes, which were further used for statistical analysis. Rank correlation analysis and regression indicated that performance variables of socially responsible firms are positively associated with CEO compensation level.

C. Diversification of Socially Responsible Investment Market

Evidence suggest that SRI investment positively affects the return (Roca et al., 2010), but at the cost of limited diversification for investors. Such problem of limited diversification can be eliminated through international diversification by integrating with the world SRI markets. Such diversification will provide more links for SRI investors as international portfolio diversification theory (Eiteman et al., 2009) suggests that lower linkages between markets will lead to higher benefits from diversification. Roca et al. (2010) investigated the extent and structure of equity price interdependence among the SRI markets in Australia, Canada, Japan and USA over the period of 1994-2010 after establishing the fact that prior studies conducted on similar issues provided mixed results (Grubel, 1968). The study found through variance decomposition analysis that the SRI markets are significantly interdependent and have become more so over the years. Hilliard discovered a close association among intra-continental markets during the oil crisis of 1973 while Jorion (1989) reported a high degree of linkages among European continental markets.

D. Socially Responsible Islamic Investment (SRII)

Convergence of Islamic Finance and SRI

Islamic history has seen the application of various instruments, i.e., waqf in reducing underdevelopment and economic inequalities, it is debatable whether an effective structure in contributing toward social development have been developed by Islamic finance for Muslim world (Cebeci, 2012). Despite its initially idealistic social objectives, such as helping reduce economic inequalities, alleviate poverty, and social banking experience particularly in Egypt in the early years of business, Islamic finance is yet to create a signature that systematically contributes to the enhancement of welfare in the society. Only a few studies have looked beyond the social responsibility of Islamic finance industry and explored its contributions to the "social maslaha". The study conducted by Cebeci (2012) is the very first in such context. The author identified that the failure of Islamic finance industry in integrating the social maslahah and CSR into practice could be explained through the transformation into almost exclusively murabaha-based Islamic banking promoting individual maslaha rather than social maslaha.

Wilson (2001) and Ahmad (2001) find that Islamic mutual funds are financially viable and Shari`ah-compliant investments can compete on a commercial risk/return basis. Merdad et al., (2010) indicate that Islamic mutual funds managed by HSBC in Saudi Arabia tend to underperform against their conventional counterparts during full and bullish periods, but they outperform conventional funds during bearish and financial crisis periods.

Islamic finance and SRI have some similarities that include the focus principally on individuals using their money in a manner that conforms to their morals and beliefs. Traditional financial instruments are solely driven by the effort to maximize risk-adjusted return, but Islamic and socially responsible investments have introduced investors with ethical and social-welfare activities. Another similarity between these two investment funds is their focus on fixed income investments. Such similarities led Bennett and Iqbal (2013) to explore the possibility to bridge the gap between Islamic and conventional markets though the Sukuk for which the proceeds are used to fund economic developments.

Western funds have moved much further than Islamic investment funds from an emphasis on the negative to focus on the positive elements (Bivell, 2008). In the beginning, SRI growth in the West was affected due to the over-emphasis on the negative similar to the attitude toward Islamic investment funds. It has been seen to be harmful toward investor's value if ethical investment revolves around the negative screening. A comparison of the Islamic equity funds and the SRI funds reveals vast areas of fund categories with different types. Since Islamic funds tend to avoid interest-based finances, the weight of the financials in the Islamic funds in low about SRI funds (Lewis, 2010). Using a value-weight approach, Paranque and Erragragui (2016) identified for US market that no adverse effect on return among Islamic and SRI exists due to the application of a double screening. The study of Paranque and Erragragui (2016) makes a significant contribution to the SRI literature by creating a venue for Islamic funds managers to consider SRI screening by Shari`ah requirements.

The major challenge for the Islamic investment fund is the size. Islamic SRI fund accounts for only 10 percent of the Islamic financial industry. Saudi Arabia and Malaysia are two major markets that account for 55% and 26% of the fund market respectively. Smyth (2006) emphasized on the need for educating the investors and addresses the issues of transparency. Muhamed and Lewis (2008) argued that the funds themselves can do much to gain the confidence of investors by improving the disclosure of fund information, providing investors with information as to how instruments are selected and how the fund is managed, setting out clearly the remuneration and fee structure, and by making information readily accessible through, for example, well-designed, informative websites.

SRII Financial Tools in Practice

There have been innovative tools to introduce SRI in the Islamic finance industry in recent years. Marwan and Engku (2016) find that there is a growing interest in innovative tools such as Social Impact Bond (SIB) and Sustainable and Responsible Investment (SRI) Sukuk globally. Kohli et al. (2012) define SIB as "an arrangement between one or more government agencies and an external organisation where the government specifies an outcome and promises to pay an external organisation a pre-agreed sum if it is able to accomplish the outcome". In this process, the government is liable to repay the initial investment to the investors in the event of an improvement in social outcome. SIB has several distinctive features as compared to conventional bond. One of such difference lies in the capital and return procedure which is only provided upon the success of a social program in SIB. Such initiative can increase the pool of capital that can be made available to fund social intervention programs by tapping into private sector funds (Callanan et al., 2012). As of September 2015, the UK has launched almost 30 SIB projects while 7 SIB projects are being implemented in USA (Marwan and Engku, 2016).

In 2011, Securities Commission Malaysia (SC) launched the Capital Market Masterplan 2 that was meant to promote socially responsible financing and investment with an agenda to develop a conducive environment for investors and issuers interested in SRI; and facilitate the growing trend of new financial instruments. The first SRI Sukuk in Malaysia was launched by Khazanah Malaysia Berhad in May 2015 with an RM 1 billion nominal value and tenure of 25 years from its first issuance. The sole Lead Arranger of the Sukuk is CIMB Investment Bank Berhad while the joint Shari`ah advisors are CIMB Islamic Bank Berhad and Amanie Advisors Sdn Bhd (Marwan and Engku, 2016).

The SRI Sukuk is a contract between a commissioner and a legally separated entity, and the activation of payments from the commissioner depends on the particular social outcome achieved by the delivery agent. Such feature indicates that SRI Sukuk is a form of SIB was the payment is dependent upon the performance of SRI project with regards to its key performance indicator. The proceeds from the SRI Sukuk are to be used by Yayasan Amir, a non-profit organisation incorporate under Khazanah with the aim to help improve the quality of education in Malaysian public schools through Public Private Partnership with the Ministry of Education (Ghani, 2015).

V. Conclusion

The study has focused on exploring SRI from Islamic perspectives through review of related literature. Evidence on the conventional SRI was provided before exploring the growing market of Islamic SRI. Findings provided by the study allow better explanations regarding the similarities and differences between Islamic and conventional socially responsible investments and lead toward the development of socially responsible Islamic investment with an inherent Shari`ah screening process. In this process, the Islamic finance industry will be able to contribute to the social maslahah by removing the traces of inequality, injustice, exploitation and oppression from the society. Document review process applied in this study limits its ability to draw conclusions from primary sources of information. Future studies should focus on drawing empirical evidence on the performance of Islamic SRI in developing countries' context.

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The Role of the Zakat System during the Colonial Period in Brunei, Malaysia and Uzbekistan: A Comparative Analysis

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Extended Abstract
Zakat is one of five Pillars of Islam and it is stated that one of main principle in Islamic finance. Its aim is to balance wealth distribution in the country fairly. Zakat is interpreted as almsgivings to the poor and needy and for payers, it is purification of their soul through helping needy and way of restraining from greediness and arrogance.[1] Legally, zakat means transfer of ownership of specific wealth to the specific individual or individuals under the specific conditions[2].
This research work will focus on the zakat systems, which were functioning right before and during the colonial rule in respective three countries Uzbekistan, Malaysia and Brunei-Darussalam. Research will cover the period starting from the pre-colonial time until independence of each country. In the case of Malaysia, the research will focus until 1957 when it became an independent state from Great Britain. Brunei became fully independent in 1984 and Uzbekistan became independent in 1991.

Statement of the problem
Zakat systems of the above countries, during the colonial time underwent serious changes due to imperial powers' intervention. The zakat system was an important part of the economy of the above states. For example, in Uzbekistan colonialists saw an opportunity to develop conventional taxation system and totally end Zakat and traditional tithe systems, whereas in Malaysia colonialists introduced dual system where both Zakat and taxation developed simultaneously.

Significance of the research
Comparative analysis of the zakat practices of pre-colonial and colonial Uzbekistan, Malaysia and Brunei is a unique study, which aims to clarify the nature of encounter of different civilizations such as Islamic and Christian.

The significance of this work can be identified by its uniqueness in its type and scope of the countries involved such as Uzbekistan, Brunei and Malaysia and the study focuses on colonial time. A comparison of the above three countries' zakat systems will be accomplished. This work is significant to identify the colonial practices of the zakat and taxation of the countries under research and insights of the study will encourage other academic enthusiasts to do further research on similar topics and contribute more on the field studied.

Rationale
The British in Malaya and Brunei as well as the Russians in Central Asia took serious steps to modernize existing laws and establish, as they perceived more advanced criminal and civil laws in order to influence socio-cultural relationships in respective states. Nevertheless, the efforts to initiate social changes did not totally change, but only influencing the population which involved in government related jobs, however, common people's live as they targeted, due to strong traditions and family cohesiveness in building Muslim identity, in relation to the religion, especially, was same as before the colonists invasion. Such influence in Central Asia did not diminish the role of *Shari'a* and traditions (*adat*), which had not been taken into account by the invaders at the beginning. The legal proceedings of both Malaya and Central Asia were in the hands of *Ulama.* Zakat collected by local zakat collectors or *aksakal*[3] in case of Uzbekistan and the Imam of the local masjid in the case of Malaysia. Paying specific attention on structural changes in governing the state's religious authorities and taxation system in the respective countries, during the colonial time compared to the pre-colonial era will enable us to see the similarities as well as the differences in the aspects of zakat management and taxation in general among countries studied. Insight on these

[1] Abdul Rahman, A. (2007), 'Pre-requisites for effective integration of zakat into mainstream Islamic financial system in Malaysia' *Islamic Economic Studies,* Vol. 14, No. 1 & 2, see p.6
[2] Abdul Rahman, A. (2007), 'Pre-requisites for effective integration of zakat into mainstream Islamic financial system in Malaysia' *Islamic Economic Studies,* Vol. 14, No. 1 & 2, see p.6
[3] 'White-beard': An elder, a village headman who played an important role at the village level and related works such as to help in solving family, tax and land disputes.

structural changes on governing the country will allow us to understand the situation, which specifically reflects administration of the zakat and taxation system. Changes, which reflected zakat administration, was due to fragmentation of traditional political arrangement and in the case of Malaysia, centralization of real power in the hands of the British residents. For example, in Malaysia "An introduction of an alien system of civil and criminal law to regulate all departments of life, other than touching upon 'Malay religion and custom', resulted understandably in the pressure to establish a 'formal' moral system of Islamic law (meaning backed by statues, acts, legislation etc., in the western sense) than hitherto existed"[4]. During colonial rule in Malaysia, range of statutes and acts passed regarding variety aspects of Islamic laws pertaining to marriage and divorce, inheritance and zakat management as well as the role of *Qadi* and religious courts became limited.

Objectives of the Study

1. Identify factors for the need to change zakat management system of both Malaya and Central Asia during the colonialists rule.

2. Find similarities and differences of the colonists' influence on structural level on the taxation and zakat systems among countries studied.

3. Through studying primary data such as original archival manuscripts, notes, petitions, memoranda and documents identify the Zakat practices of the period studied.

Research Questions

1. How was the state of affairs in the Islamic governance system of the countries under study in the colonial period?

2. What were the key features on practice of the Zakat in Brunei, Malaysia and Uzbekistan during the colonial rule?

3. How did the colonial powers affect the Zakat system after their arrival?

Methodology

Qualitative data analysis would be helpful to identify zakat practices and its role in the above countries. Aim of this research is to draw an objective picture of the situation before and during colonial period, relying on primary sources such as manuscripts, memoranda, petitions, topographical works, archival records, rare pre-revolutionary books and periodicals as well as secondary data such as related current era scholarly research works, articles and pamphlets published during colonial era, and other publications.

Data collection

Data will be collected from the archives of Uzbekistan, Malaysia and Brunei-Darussalam. These include the Historical (pre-1917) *Fond*s of the Central State Archive of the Republic of Uzbekistan in Tashkent (TsGARUz), which consist largely of records of the central bureaucracy of the Turkestan Governor-Generalship together with local records for those areas. Further, we would visit the department of rare manuscripts in Navoiy State Library in Tashkent, Samarkand State Archive, Manuscript department of the Samarkand State University, Archives of the Al-Biruni Oriental Studies Research Centre and the Al-Bukhari International library in Uzbekistan. In Malaysia and Brunei, the following places are to be useful for the research: Public library of Penang, Penang University of Science library, National Archive of Malaysia, University of Malaya library, IIUM library, Brunei History center, UBD library, National Archive of Brunei, Mufti library under MORA of Brunei, UNISSA library and others. These local sources will be helpful in obtaining objective information from original local records, which would prove essential in revealing the limitations of the colonial regime. With the essential language skills, it would be possible to interpret the situation of the pre-colonial and colonial period not from the viewpoint of the Russian or western scholars but from the local dweller's perspective. One of the drawbacks during data collection would be the language of the material written under the research such as Malay in the case of Brunei and Malaysia and Persian in case of the Uzbekistan, which the researcher does not possess the level of the languages in a manner that would allow scrutiny and interpreting data fairly. To address the above issues related to language, the researcher hopes to hire a specialist in those languages and obtain help for the translations of the required materials for the study.

Data analysis

Collected data will be analyzed on the comparative basis to render similarities and differences through logical explanation of the gathered data. Qualitative data analysis will help to interpret similarities and differences of the empires' ways of influence on the zakat system of the colonized countries

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Sharing the Income Tax Position in ASEAN Countries with the Presence of Zakat Mal

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Abstract: Not everyone has more money to pay taxes especially those on low incomes whose earnings have to be cut again by the income tax paid not to mention the religious absolute obligation to pay zakat mal. What about those who still need to spend money to meet the primary and secondary of theirs needs. Departing from this problem this paper is made with the purpose of providing a solution to them by the existence of the income tax is reduced by the existence of zakat mall.

When the alms payer must spend their alms, they no longer need to pay income tax that the amount is relatively large. This is because the alms issued have calculated as a tax deduction. However, it does not mean that they are free of any other established taxes. Because of this law, it gives significantly positive impact to taxpayers and alms payer. Increasingly alms payer then the society will feel welfare of the distributed result of alms to people that have been established in Koran. The study uses sample in Indonesia as a real model.

Keywords : Income Tax, Zakat Mal, Reduce, Benefit, ASEAN

Research Background

Every country has regulation in building their states. One of it is the regulation about taxation. Tax by definition is the payable dues from society to the nation (which can be imposed) based on the general rules (constitution) by not getting return achievement which can be assigned directly and aim to fund general spending related to country's duty to held governance (P.J A. Andriani, 2012). There are a lot of taxations set by a state for the infrastructure development. One of it is the income tax.

Tax is the main income of a country due to around 78% of state budget came from the tax itself. Thus government keeps increase tax revenue, yet the tax ration in Indonesia only reach 13.6% of the product domestic gross. The minister of finance, Bambang Brodjonegoro, stated that from the total citizen of 250 million, there are only 26 million of them who possess tax ID number, and from those 26 million only 10 million of them who enter tax annual notification. Even from the 10 million people who give tax annual notification, those who really pay are only 900 thousand citizen. The source of this huge number of tax is mostly at the hand of moslem citizen. As known that the moslem population in Indonesia is around 87% from the total resident. Even though the total number of moslem is 87% but this does not directly proportional with the existed tax revenue. It might be caused by the moslem who are reluctant to pay income tax because they already have alms in Islam.

Society thinks that tax is a burden meanwhile alms is a religion obligation which must be done. A *muzakki* in Indonesia is also a taxpayer. If they are asked to pay then they must choose to pay alms. This is because they feel overwhelmed by having two responsibilities to pay tax and alms with relatively higher amount without any tax subtrahend for them. Whereas the tax in Indonesia has a potential until 217trillion/year or about 3.4% from the product domestic gross if it is counted by the number of Indonesian citizen which reach 250 million people with 87% moslem, but the fact is National Alms Agency can only collect 1.5trillion in 2010 and increased to 1.7 trillion although has been predicted to reach 2 trillion yet still not suit the target. In fact, the potential of alms is very significant for poverty alleviation and unemployment if it can be distributed well by the institution which has been ratified by the government, so that the alms distribution will be evenly throughout the region. It can also lead to the zero overlap in each region. It is reported that there are still 28.59 million of poor who are scattered in every corner of Indonesia. With the huge potential of alms, we can decrease this number of poverty.

The distribution of alms shared to eight category which has been set by the law of Koran that are fakir, poor, slave (*riqab*), people who have debts (*gharim*), convert (*mualaf*), those who fight in the cause of Allah (*fisabilillah*), people on the go (*ibnu sabil*) and the worker in alms (*amil zakat*), so that if the distribution can be done evenly then sooner the problem of poverty and unemployment which has been a crucial issue in every country could resolved. Poverty are later be decreased and the economic development of a country will be increased. The income tax been used for the state's infrastructure and social welfare, but it is still different with the alms which clearly been used to prosper the society. With that consideration, the writer built a notion to make the alms as the subtrahend of income tax so it could minimize the burden for those who are obliged to pay both of the tax and alms, where it will lead to a positive impact in terms of increase the number of alms payer and tax payer. The result of these alms are going to be distributed well to the eight category set in Koran and eventually decrease poverty and boost economic growth in the country.

Literature Review

Among various cooperation programs by ASEAN such as in economic sector, this is done in order to make Southeast Asia more stable, prosperous, and highly competitive also for the strive of equal economic development and poverty reduction as well as socio-economic inequality in the states of Southeast Asia itself. Seeing this, the problem of economic can never be separated from social gap and poverty. Every country does not escape from the poverty experienced by its society, but they also strive to reduce it. The number of poverty in Southeast Asia is still high according to the data stated by the president of Republic of Indonesia (Ir. Joko Widodo) in the eight high-level conferences ASEAN-UN at Laos and known that the number of poor people in the region still reaches 120 million. This number almost attains quarter of ASEAN citizen which is currently reaching 600 million people. It is important for ASEAN to ensure that the program of poverty alleviation enters the sustainable development agendas 2030, says Mahmuddin, the head of media press bureau and information of presidential secretariat. As it is referring to the goals of ASEAN listed in Bangkok Declaration to:

1. Accelerate the economic growth, social progress and cultural development in the region through the joint ventures in the spirit of resemblances and friendship to strengthen the base of nations;
2. The prosperous and peaceful Southeast Asia;
3. Improve the active cooperation and assist each other in the issues which become the mutual interest in the field of economy, social, technology, science and administration;
4. Increase peace and regional stability in a way to respect justice and legal order in relations among nations in the region as well as obey the principles of UN Charter;
5. Cooperate more effectively in order to improve the agriculture utilization and their industry, expand the trade and assessment of commodity problems;
6. Maintain the strong and beneficial cooperation with regional and international organizations which have the same purpose, and to explore any kind of possibility to work together among themselves;
7. Mutually assist in the form of training facilities and research in science, profession, technology and administration;
8. International, improve transportation facilities and communication as well as improve the standard of living;
9. Advance the assessment of Southeast Asia recognition.

Of all the aims of ASEAN above, there are alluded about the economic growth and society welfare of the ASEAN itself. It means that the economic problem is a crucial issue which must be addressed seriously. Hence government set the tax as an effort to develop economy and prosper the citizen. But, is it fair for the moslem to be obliged to pay the tax as explained before while they are also responsible to pay the alms which equally important? Far before Adam Smith, theologians have discussed about the tax principles. All the Caliph *rasyidah* particularly Umar, Ali, and Umar bin Abdul Aziz stressed that the tax should be collected with justice and in a polite way, it must not exceed a person's ability to pay or make them fail to fulfil their basic necessities of life. Abu Yusuf said that a taxation system must be fair for both of the payer and the treasury; picked up more has been perceived as an unfair action related to the rights of the people, while picked up less is an unfair action for the treasury. Therefore, the cost of government services must be partly collected in form of tax based on the ability to pay. Vertical and horizontal fairness demand that the same one must be treated in the same way and the distinct one must be treated in the different way. Seeing this, society will not gain prosperity if they keep given the responsibility to pay both of the tax and alms with relatively big amount without a load reduction. Besides they still also need to pay other taxes such as vehicle tax with the same amount for every year even when their vehicle has been depreciated. At the same time, they have to fulfil other business and daily needs which continue to increase. If this is keep happening, we can no longer say that tax is a tool for society welfare and as long as there are still people who are burdened, it is far from prosper.

With the income tax subtrahend by the alms for those who experience *nisab* then it will help to lift society's burden all this time. If alms are used to be the tax subtrahend, it will automatically decrease the tax revenue. On the other hand, the amount of collected alms will be increased. Research in Indonesia has proven that around 78% state budget are coming from the tax. If the number of tax decreased, then it is going to negatively impact the economic condition. The concern is unfound. It is cause by the alms acceptance will not significantly decrease the tax revenue. The empirical fact denied those worries. Hafidhuddin in Harian Seputar Indonesia, October 8th 2007, showed that the alms acceptance and tax in Malaysia during 2001 to 2006 were equally increased. According to the report in 2006 from Malaysia's Ministry of Finance and the alms collector centre, it has been proven that the tax revenue and the alms have a positive correlation. As an example, the alms revenue in 2001 was 321million ringgit and the tax revenue was around 79.57million ringgit. The next year, the alms revenue was increased to 374million ringgit. So does the tax revenue which increased to 83.52million ringgit. In 2005, the alms revenue reached 573million ringgit, while the tax was 106.3million ringgit.

It means that when the alms decrease the tax, then the alms revenue and tax will be increased and gives a positive impact for the state's economic growth. If this is done by ASEAN as a collective regulation in Southeast Asia region, then the great economy as well as justice for ASEAN community will become true.

Discussion

Every country has its own tax regulation in order to develop the nation, not to mention Indonesia. Indonesia is a state with a bit complicated tax regulation and has been amended several times for the Act number 38/1999 about alms management and revised the Act number 17/2000 about income tax related to the alms as the tax subtrahend.

This has been demanded by the citizen as the burden subtrahend for moslem who already have obligations to pay the alms. With that initiative, the alms payer will race to pay their taxes. It is no longer a discourse only, but Indonesia has established a constitution about the alms as tax subtrahend. So we could refer to Indonesia as a country in Southeast Asia who set the alms as tax subtrahend. In Indonesia's taxation there is PTKP. From year to year there are several changes to PTKP (non-taxable income) where this is the amount of income which is non-taxable for the domestic tax payer inside the country. PTKP is used for counting the amount of taxable income from the tax payer in annual SPT (letter of notification) where the non-taxable income is later use to be a part of PPh (Income Tax) calculation in Article 21.

1. Alms calculation as the tax subtrahend

In order to make the alms be approved as tax subtrahend, there are several cumulative requirements and must be reported in annual income tax report that is:

2. The alms must obviously be paid by the moslem individual tax payer and/or domestic institution tax payer owned by moslem

3. The alms must be paid to the treasury or institution which is established or passed by government

4. The paid alms are the alms related with the income which become the tax object.

So in order to calculate the alms as the tax subtrahend (PPh), the tax payer must report the income alms which have been paid into the year-end income tax report as a requirement to create PPh report by the end of the year. The tax payer (individual or institution) are first registered as a legitimate tax payer in the tax office (KPP) where they are domiciled, and be given NPWP (tax ID number) by the local KPP.

That way then the alms which are paid in the year are able to be recognized as the subtrahend of PPh in the end of the year.

In the tax calculation, we need to know about the determination of PTKP and the progressive tax tariff first and the following are PTKP determination as well as the list of progressive tariff in 2016.

Non-taxable Income

Tax payer	Rp 54.000.000
Married tax payer	Rp 4.500.000
Dependents 1	Rp 4.500.000
Dependents 2	Rp 4.500.000
Dependents 3	Rp 4.500.000
Total	Rp 72.000.000

List of progressive tax tariff

0 - 50.000.000	5%
50.000.000 - 250.000.000	15%
250.000.000 - 500.000.000	25%
> 500.000.000	30%

The following is the alms depiction as the tax subtrahend in Indonesia with the subject of individual tax payer.

Fattah is an employee in a company with the income of Rp 25.000.000/month. He is married and has three children. Then how to calculate it is:

Income (25.000.000 x 12)	= Rp 300.000.000
Gross income	= Rp 300.000.000

Subtrahend:	
Position allowance (5% x 300.000.000)	= Rp 15.000.000
Maximum permitted	= Rp 500.000
	= Rp 299.500.000
Net income before the alms	= Rp 299.500.000
The alms must be paid	= Rp 7.487.500
Net income after the alms	= Rp 292.012.500
PTKP	
Tax payer	= Rp 54.000.000
Married tax payer	= Rp 4.500.000
Dependents 1	= Rp 4.500.000
Dependents 2	= Rp 4.500.000
Dependents 3	= Rp 4.500.000
	= Rp 72.000.000
PKP	= Rp 292.012.500
	Rp 72.000.000
	Rp 220.012.500
5% x 50.000.000	= Rp 2.500.000
15% x 170.012.500	= Rp 25.501.875
PPh 21/year	= Rp 28.001.875
PPh 21/month	= Rp 2.333.489

As is the constitution about the alms and income tax of course there needs to be the consequence in the implementation. In the Act of Income Tax there is a consequence for the rights and obligations as well as sanction for the tax payer if there is any violation to the Act of Income Tax itself. As it does a tax payer is willing to report the tax payment by the end of the year and wish to gain subtrahend due to the alms payout, then this individual must give the alms proof of payment in the institution established by the government. This case does to anticipate the violation by the tax payer. It is clarified in Decree Director General of Islamic Community Guidance and Hajj Affairs number D/291/2000 about Technical Guidelines of Tax Management article 16 clause 2: “The alms or income which obviously paid by the moslem individual tax payer and/or domestic institution owned by moslem to the treasury and alms institution which is created or passed by the government might be deducted from taxable income from taxable income tax concerned by using the legitimate proof of payment as meant in Article 14 clause 3 of Act number 38/1999 about Alms Management.” For the alms payer, materially there is a loss of the alms expenditure and that is the decrease of ready-to-spend revenue. However, the amount of alms expenditure which is only 2.5% is not significant compare to the total income. For instance, an executive salaried Rp 500million/month is only compulsory to expend Rp 12.5million/month for the alms. Besides, this executive possesses saving as the result of alms subtrahend of the taxable income.

This regulation has provided a huge impact towards the country because the existence of alms as the tax subtrahend leads to the growth of the alms payer and income tax payer from year to year. It gives a positive correlation. After the implementation of this regulation, there is an enhancement of income tax payer up to the end of 2015 reached 9.09million and it has been proven by the escalation of 17% from the previous year (Ariyanti, 2015). Whereas the number of alms payer is also increased from 2015 with Rp 98,473.1million or climbed with 18.72% compare to the previous year (baznas.go.id). This enhancement will provide splendid impact for the country and the citizen. The uplift of alms payer will lead to a better distribution for the poor as well so the poverty rate is going to be decreased too. Currently Indonesia has 250million people. If a family consisted of approximately five people, that are a wife with three children, it means there are 50million heads of family (KK). 87% of it is moslem so there are 43.5million KK.

According to the World Bank, around 60% of the citizens are poor. Whilst government says that the poor are only 40% so we can assume it within about 50% with the percentage of alms payer is also 50% or 21.75milliion KK. If the alms payer has Rp 10million of venture capital, then this individual must pay 2.5% or around Rp 250million per year. Averaged or assumed that someone has venture capital around Rp 200million or become an alms payer with Rp 5million per year or less than Rp 15.000 per day. That is to say, the collected alms are in the amount of 21.75million KK multiplied by Rp 5million or total around Rp 108.75trillion. After being deducted by the rights of treasury with 1/8 parts or about Rp 13.6trilllion, there are still Rp 95.15trillion which could be used by the receiver for education, health, social safety net and certainly productive economic sector to develop *dhuafa* entrepreneur. Therefore this alms fund surely could indirectly support the APBN (state budget). History has proven in the time of moslem paid the alms due to the punishment for those who are not, then 35% of the poverty in Tunisia and Algeria were managed to be mitigated in only less than three years by the Caliph Umar Bin Abdul Aziz (M. Fatwa, M. Jamal and Aries Mutfie, 2004).

If this could be done by countries in Southeast Asia then it will be very helpful for the states to reduce poverty. Besides that, society will also feel the high prosperous and equality among others. The wealth of the rich can also be enjoyed by the poor. Not only are the benefits gained, country will possess good economic growth as well so it could boost the economic cooperation within the relations in ASEAN.

2. Superstructure

2.1 Regulation (the act of responsibility to pay the alms and income tax)

In order to increase the number of tax payer and the alms payer indeed needed a regulation which has been set in the constitution so it is going to be an obligation and necessity to be done by the tax payer and alms payer. As regulated in the constitution, the obligation to pay income tax has been set in Act number 17/2008 about Income Tax. Income tax is one of the taxes which directly collected by central government (Directorate General of Taxation) and fully assigned to the tax payer themselves, in the sense that the tax expense cannot be shifted to the other parties. It is explained in Article 2 clause 1A number 17/2008 that the income tax payer should be treated equal with the institution tax subject. In Article 2 clause 2 the tax subjects are divided into two which are domestic and foreign. The domestic tax subject is regulated in Article 2 clause 3 that is:

1) Individual: residing in Indonesia, has been located in Indonesia for more than 183 days in 12 months, being in a tax year existed in Indonesia and possess willingness to settle in Indonesia
2) Institution: established or positioned in Indonesia
3) Inheritance which has not been divided as the unity is the substitute of tax subject, replace those who have rights and that is the heirs. Appointment of the undivided inheritance as the substitute tax subject is intended to keep maintaining the income tax from the heritage itself.

Whereas the constitution which oblige to expend the alms has also been regulated in Act number 38/1999 about alms management. Article 1 in this Act in intended to:

1. Tax management is the activity of planning, organizing, implementation, and supervision towards the collection and distribution as well as the utilization of the alms itself.
2. The alms is the treasure which obliged to be set aside by a moslem or an institution owned by moslem in accordance with the religion provision in order to be given for those who deserve.
3. Treasury (*muzakki*) is an individual or institution owned by moslem who is responsible to pay the alms.
4. *Mustahiq* is an individual or institution who deserves to accept the alms.
5. The religion is Islam
6. Minister is a minister who has the scope of duty and responsibility in the field of religion.

Whist in Article 2 stated that every citizen of Indonesia who are moslem and capable or institution owned by moslem are obliged to pay the alms.

With the existence of regulation from constitution which organize the tax and organize the alms surely give a statement to the society that whether you want it or not, paying both is mandatory. The obligation for one of it does not abort the other. It is because to empower a nation is not only the duty of the government but the society as well. With this also can improve tax payer and the alms payer more in particular after the alms has been recognized as the income tax subtrahend.

2.2 Institutional

In managing the alms surely needed a particular body which has been passed by the government, so there will be no other institutions with the same purpose. This is in order to avoid uneven alms distribution as stated in Act number 23/2011 about alms management. According to Article 5 of the Act number 23/2011 is meant:

1) In order to implement the alms management, government established National Alms Agency (BAZNAS)

2) BAZNAS as stated in clause (1) is located in the state capital

3) BAZNAS as stated in clause (1) is a non-structural government institution which is independent and responsible to the president through minister

Article 6 stated that BAZNAS is an authorized institution to do the alms management nationally. With the regulation of the alms management clearly stated in the constitution above, hence if a citizen wish to gain tax subtrahend then the individual must submit the alms proof of payment in the legitimate governmental institution. As stated by Directorate General of Tax in regulation number.PER-15/2012 that the body/institution which is set as receiver of the alms/other religious donation which is mandatory can be deducted from the gross revenue consisted of BAZNAS, ISLAZ, LAZIS, LEMSAKTI (the Indonesian Christian alms institution) and BDDN YADP (national fund dharma institution of Adikara Dharma Parisad foundation).

Conclusion

The regulation of income tax subtrahend is created due to the existence of the alms which is very beneficial for the citizen. All this time the tax payer and alms payer feel overwhelmed. They consider tax as a burden and alms as a religion obligation. Besides they also still need to expend the increasing needs for life. This regulation will assist to lessen their burden. It is not only them who possess the advantage, but it also benefits the country due to the enhancement of tax payer and alms payer which lead to the alms distribution and eventually eradicate poverty rate in the country itself. If the number of poverty has been decreased, the fund could be shifted to other social sectors such as education, empowerment for the unemployment, etc.

It is surely profitable for ASEAN if able to implement this as a collective regulation, which later when the countries in Southeast Asia have began to rise from the high poverty rate indeed will become a prosperous and peaceful region with the rapid economic growth.

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Literature Review: Streamlining Components of Basic Financial Statements of Regional Governments in the Perspective of Financial Accounting Standards

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Abstract*—*The Government of Indonesia (GoI) has issued a policy that shifts the cash-based accounting of the regional governments to the accrual-based accounting, fully coming into effect starting 2015. In principle, the accounting system applies a similar accrual basis with the corporate accounting system that complies with the Financial Accounting Standards. This suggests that the Financial Accounting Standards have developed and been implemented better than the Government Accounting Standards. Problem remains exist especially in reviewing the components of financial statements prepared by the regional government to attain relevant, understandable, reliable and comparable statements. This article attempts to find out the components of the financial statement by the Financial Accounting Standards to compare with the components of the basic financial statements prepared by the regional governments. Further, this article is expected to encourage the stakeholders in the regional governments to present streamlined financial statements. With the qualitative method, this study highlights literature review by making comparison between the theories, previous studies and field practice based on the writers' experience (direct observation). As suggested by the analysis done, the components of the financial statements of the regional governments in the perspective of the Financial Accounting Standards (SAK) can be streamlined into five components of the basic financial statements including Statement of Financial Position, Statement of Operations, Statement of Changes in Equity, Cash Flow Statement, and Notes to the Financial Statement. Thus, Statement of Budget Realization and Statement of Changes in Balance of Budget Surplus are made internal statements of management which are not presented to public. Aligned components of the financial statements adhering to the Financial Accounting Standards and the Government Accounting Standards will pave the way to setting the standards of financial statements in both public and business sectors.

I. INTRODUCTION

The results of the audit by the Supreme Audit Agency (BPK) to thirty-five Financial Statements of the Regional Governments (LKPD) presented in the Summary of Semester II-based Audit (IHPS) reported a decline in Unqualified Opinion (WTP) of LKPD 2015 compared to the previous year. The decline occurred because the government faced challenges in the year due to accrual-based implementation which was likely to affect the quality of the government financial statements (Feby, 2015).

The implementation of accrual based accounting represents the government's drive for transparent and accountable financial management to achieve more measurable performance. This effort is expected to encourage the efficiency among activities conducted and promote good and clean corporate governance, to ensure that the development goals for the prosperity of the people are well achieved. To achieve the goals, both the central government and the regional government shall maintain quality financial statements. The afore-mentioned quality is generally reflected from the opinions of BPK [11].

In regard with globalized financial statements, the International Accounting Standards Board (IASB) gears to develop a set of high quality accounting standards for acceptance worldwide. IASB presents three examples of globalization issues-driven studies to comply with the standard setting to illustrate how the research questions that generate relevant conclusions can be derived from the motivating questions. The article also summarizes the evidence in two aspects of globalized financial statements. The first relates to the relative quality of accounting quantity within standard-setting regime and the second relates to whether or not the global financial statements are achievable or even desirable [7].

The financial statements of the regional governments have shifted from cash-based to accrual-based financial statements which are fully implemented starting 2015. Viewed from the conceptual accounting, the accrual basis is believed to support implemented cost calculation of public services with a more reasonable assessment. Accrual implementation incorporates all burdens either paid or unpaid burden, more timely recognition, and future liability disclosure as its advantages. Prior to the implementation of accrual basis, the government requires four financial statements to be prepared including the Statement of Budget Realization, Balance Sheet, Cash Flow Statement and Notes to Financial Statements (Committee for Government Accounting Standards, 2006).

The change follows the development of the implemented accounting policies in the non-government sector set out in the Financial Accounting Standards (SAK). Therefore, the government accounting standards are considered late and far behind the policies issued by the Board of Financial Accounting Standards (DSAK).

Problems arise as the components of the basic financial statements of the regional government are too many compared to the basic corporate financial statements. As a result, it sparks confusion among the authors and readers of the financial statements. Criticism driven by the complex use of terms was proposed by Wakter Schuetze (1991) stating that most accountants and public in general are unaware of FASB's definition of assets and characteristics. It is hard to solve accounting issues with the term. Hence, the writer attempts to review the components of financial statements of the regional governments within the perspective of the Financial Accounting Standards [12].

In Indonesia, it is difficult to exercise the economic concept when matching cost against revenue in the government sector. The economic concept in the government sector focuses on efficiency and effectiveness relying on cost and revenue (based on revenue and expenses per cash). Issues in accrual accounting and cash are endless conceptual problems. The implementation of accrual basis in Indonesia that puts the Statement of Budget Realization Report as a statutory report becomes a normative barrier towards the advantages of accrual-based accounting (Committee for Government Accounting Standards, 2006).

This article discusses the components of the basic financial statements of the regional governments in the perspective of the Financial Accounting Standards. Few critical reviews are made to this issue; therefore, this article aims to be a critical review to ensure simple and easy-to-read financial statements of the regional governments. Thus, this topic will be interesting when discussed along with the perspective of the Financial Accounting Standards, which are more advanced and of many and quality literatures. Simple and easy-to-understand financial statements of regional governments are then the main questions and topic in this article.

This article further discusses the design of financial statements by the Financial Accounting Standards, compares the financial statements of the regional governments adhering to the Financial Accounting Standards (SAK) and ends with a conclusion.

II. LITERATURE REVIEW

A. Components of the Financial Statements

Brigham and Houston (2010) argued that the financial statements are only some sheets of paper on which some numbers are written. What's more important is to understand the real assets behind the figures [1]. Then, Subramanyam (2010) stated that the financial statements are made through the process of financial statements set out by the accounting standards and rules, manager incentives and mechanisms for corporate implementation and supervision [10]. Understanding the environment of the financial reporting shall be alongside the awareness of the objectives and concepts underlying the accounting information presented in the financial statements. This knowledge will help see the real financial position and better corporate performance.

To achieve its objectives, the financial statements are prepared on an accrual basis. On this basis, the effects of transactions and other items are recognized during the transactions (not when cash or cash equivalents are received or paid) and recorded in the accounting notes and reported in the financial statements in a given period. This assumption indicates that the financial statements prepared on an accrual basis not only provide information that occurs in the past in cash receipts and payments, but also present information on the liability for cash payment and cash resources to occur in the coming period [8].

With qualitative characteristics, the financial statements present worthy information for the users. As Kieso (2011: 44) stated, the qualitative characteristics of financial statements include (1) Understandable, the information which the financial statements contain should be easy to read by the users. (2) Relevant, the accounting information should be distinguished in decision made [6]. Unable to affect the decision, the information is therefore irrelevant to the decision made. Relevant information will help users make predictions about the outcome of events in the past, present, and future, which has predictive values. Relevant information also helps the users to justify or correct the expectations of the past. Thus, it has a feedback value. Information is considered relevant if it is available for decision-making before the information loses the capacity to affect the made decisions; then it has timeliness. (3) Reliable, accounting information is reliable if: a) it can be verified where reliability occurs when the independent test instruments with the same measurement method obtain similar results. b) Accurately presented (representational faithfulness). Representational faithfulness means that the figures and explanation in the financial statements represent what actually exists and happens. c) Free from errors and biases (neutrality). Neutrality means that the information is beyond the particular interest of user groups. Information presented must be factual, true, and no bias. (4) (4) Comparable, information from different corporations has comparability if it is measured and reported in the same way. Financial information will be more useful to the users if it can be compared with the financial information in the previous financial statements and financial statements between companies.

In the Statement of Financial Accounting Standards (PSAK) , the Board of Financial Accounting Standards defines financial statement is a structured presentation of the financial position and financial performance of an entity. Adhering to the Financial Accounting Standards, financial statements aim to provide information about the financial position, financial performance, and cash flow of an entity, which is useful for most users for economic decision making. The financial statements also show the results of management accountability for the use of resources entrusted. In a bid to attain the objectives, the financial statements provide information about an entity that comprises: (a) assets; (B) liabilities; (C) equity; (D) income and expenses, including profits and losses; (E) contributions from and distributions to owners; and (f) cash flow. Alongside the information in the notes to the financial statements, the afore-mentioned information helps the report users to predict the future cash flow and, in particular, in terms of timing and certainty of obtaining cash and cash equivalents.

A full financial statement consists of components as follows: (a) statement of financial position at the end of a given period, (b) statement of comprehensive income during a specific period, (c) Statement of changes in equity within a period, (d) statements of cash flow during a particular period (e) Notes to the financial statements with a summary of key accounting policies and other supporting information.

Statement of Financial Position is a presentation of the financial position that provides an overview of the assets, liabilities and equity (capital). The statement presents the basic accounting equation, including debt (liabilities) and capital (equity) on a given date. In general, companies present the accounting period at the year-end. To cater for internal need however, the companies allots interim accounting period comprising a monthly period for internal information purposes and quarterly for external reporting purposes.

Income statement informs and compares revenue that companies obtain by costs over a given period such as a monthly or annual period. Revenue refers to the amount of money received by the company for selling goods and / or providing services. Expenses are costs incurred to generate revenue. The net profit is the difference between revenue and expenses.

Statement of changes in capital presents all changes in owner's equity for a specified period. The report describes the impact of owner's equity transactions during an accounting period. The statement in the statement of changes in capital informs initial and ending balances of capital so as to provide an overview of each new capital acquisitions made during the accounting period. The statement also shows that some amount of the net profit is detained, not shared to the share owners to be listed in the retained earnings.

Cash flow statement explains how the company acquires and uses of cash within an accounting period. Cash receipts are called cash inflow while the use of cash is called cash outflow. Thus, cash flow statement is classified by operating, investing and financing activities and is prepared on the clarification during a certain period.

Cash flow statement is added to the annual report as a response to the demand for the need for better information regarding the cash inflow and outflow. Current assets in the statement of financial position show how much cash the company has at the end of each accounting period. This amount can be compared on an annual basis to see how much cash balances change, but it only gives little information about how or why the cash balance has changed.

In the financial statements, accounting figures are presented despite not stating entire transactions. For various reasons, these three financial statements are likely insufficient to fully inform the operating results and financial position. To enable good understanding on the financial statements among the users and to avoid misleading information, all important points shall be disclosed in the notes to the financial statements and are presented systematically. In consequence, accountants require that notes should be made available in addition to the financial statements. The notes provide a detailed explanation and are listed in the annual report as an integral part of the overall financial statements. In accordance with Government Regulation No. 71 Year 2010, financial statements are defined as follows:

"The financial statement refers to a structured report regarding the financial position and transactions undertaken by a reporting entity."

Government Regulation No. 71, 2010 related to the quality of financial statement is Appendix 1:02: the Statement of Governmental Accounting Standards (PSAP) 01 on the presentation of financial statements. The regulation states the components of the financial statements as follows:

1. Statement of Budget Realization
2. Statement of Changes in Balance of Budget Surplus
3. Balance Sheet
4. Statement of Operations
5. Cash Flow Statement
6. Statement of Changes in Equity
7. Notes to Financial Statements

The above explanation indicates that the financial statements by PSAK and PSAP can be compared

TABLE I. FINANCIAL STATEMENTS

PSAP- Based	***PSAK- Based***
Balance Sheet	Statement of Financial Position
Statement of Operations	Statement of Comprehensive Income
Statement of Changes in Equity	Statement of Changes in Equity
Cash Flow Statement	Cash Flow Statement
Notes to the Financial Statements	Notes to Financial Statements
Statement of Budget Realization	
Statement of Changes in Balance of Budget Surplus	

Source: PSAP and PSAK

This article will further review comparison among the components of the financial statements of the regional governments in the perspective of the Financial Accounting Standards. The discussion focuses on how the financial statements of the regional government are presented, as to whether or not the basic financial statements compared with the Financial Accounting Standards are simple.

B. Accrual-based Government Financial Statements

Deloitte (2004) in his review stated that "many countries have chosen phased implementation of new public management. This can be done in different ways: 1) implementing an output-focused budget and then accrual accounting and budgeting. 2) Starting with implementing accrual accounting and introduce accounting budgeting at a later stage. 3) using a number of pilots before starting an integral roll-out. 4) making the shift from cash accounting to accrual accounting in an number of steps."

Then, the International Public Sector Accounting Standards (IPSAS) explains that the accrual-based financial statements at least include: the Statement of Financial Position, Statement of Financial Performance, Statement of Changes in Net Assets / Equity, Cash Flow Statement and Accounting Policies and Notes to the Financial Statements.

Then, 12 of 31 OECF member countries have implemented accrual-based accounting in their financial reporting including Australia, USA, UK, New Zealand and Sweden. To note, the Swedish government has implemented accrual basis at the ministerial level since 1993 and in 1994 at consolidated level (Ministry of Finance of the Republic of Indonesia, 2014).

France also uses the accrual-based accounting, where the components of the financial statements include: balance sheet, statement of surplus deficit, cash flow statement and notes to the financial statements. In Sweden, the components of government's financial statements consist of: balance sheet, statement of financial performance, cash flow statement, statement of appropriation, a performance report and notes to the financial statements (Committee for Government Accounting Standards, 2006). In Indonesia, the components of government's accrual-based financial statements include balance sheet, statement of operations, statement of changes in equity, statement of budget realization, statements of changes in balance of budget surplus, cash flow statement, and notes to the financial statements.

C. The Financial Statements of the Regional Governments in the Perspective of the Financial Accounting Standards

In a bid to ensure that the information in the financial statements is understandable, relevant, reliable, and comparable, how the components of the financial statements of the regional governments are prepared should be reviewed for the best benefits for the internal and external parties such as the regional councils, public and other related parties. Discussing the components of the financial statements in the perspective of the Financial

Accounting Standards focuses on three topics including the statement of budget realization, the statement of changes in the balance of budget surplus and components of other financial statements such as Balance Sheet, Statement of operations, Cash Flow Statement and Notes to Financial Statements.

First, the Statement of Budget Realization. In accordance with paragraph 61 on SAP Conceptual Framework, it is stated that the Statement of Budget Realization presents an overview of sources, allocation and use of financial resources managed by the central/regional government. It further illustrates a comparison between the budget and its realization in a given reporting period. The statement of budget realization is obligatorily prepared and published.

The statement of budget realization is a part of components of must-published financial statements of the regional governments while in the perspective of the Financial Accounting Standards, the statement of budget realization is not necessarily prepared separately and presented to public as it is a part of the basic financial statements. Along with the international development, adhering to Study No. 14 issued by the International Public Sector Accounting Standards Board (2010), said that the information presented on the accrual-based accounting in the financial reporting allows stakeholders to: 1) assess the accountability of all entity resource management, 2) assess the performance financial position and entity cash flow and 3) make decisions on providing resources entities. Therefore, the components of the basic financial statements are made simpler; budgeting as a form of short-term planning is a part of the management accounting, not a part of the components of the basic financial statements of the regional governments.Thus, the statement of budget realization is reviewed for omission given that the statement is indeed reflected in the accounting reporting such as the statement of financial position, the statement of operations and the cash flow statement. The statement of budget realization report as a component of the basic financial statements is technically rigid in preparation. The process of budget compilation is not flexible as it allows no changes to cater for possible changes in regional policies and target of public services. In the context of corporate budget implementation, budgeting is made flexible by taking into account factors including products, competitors, and changes in government regulations to fit into the corporate needs and strategies. On the contrary, the budget preparation of the regional governments caters more for political interests especially on the ratification of the regional budget and the budget bill at the beginning or the middle of the year.

Glenn A Welsch (1988) defined budget as follows:
"*Profit planning and control may be broadly defined as sistematic and formalized approach for accomplishing the planning, coordinating and control responsibility of management*"

The definition suggests that the budget of an entity is always associated with management functions such as the functions of planning, coordinating and supervising. Among the afore-mentioned functions of management, the budget management for entities is crucial because it functions as planning, organizing, directing and supervising at each entity level.

Second, the Statement of Changes in Balance of Budget Surplus. Paragraph 8 PSAP No. 01 on the Presentation of Financial Statements defines that the Statement of Changes in the Balance of Budget Surplus is combined balances of accumulated SiLPA / SiKPA of previous fiscal years and the current year as well as other adjustments permitted. This statement is directly linked with the statement of budget realization. In the perspective of the Financial Accounting Standards, the Statement of Changes in the Balance of Budget Surplus is beyond the components of entity's basic financial statements. As previously discussed, the Statement of Changes in the Balance of Budget Surplus is therefore improper to be the component of basic financial statements of the regional governments. This statement is sufficient to be a part of management accounting to measure performance and a means of institutional evaluation either by the regional councils or by the auditors.

Third, the Statement of Financial Position. By definition, the statement of financial position (balance sheet) is presented in such a way to describe the financial position of a company at a particular time commonly during the closing. As regulated in PSAK No. 1 Paragraph 49 which was revised in 2009, the balance items at least contain the following information: 1) tangible assets, 2) intangible assets, 3) financial assets, 4) equity method-using investments, 5) inventories, 6) receivables and other receivables, 7) cash and cash equivalents, 8) accounts payable and other debt, 9) liability provisions, 10) long-term interest bearing liabilities, 11) minority interests, 12) share capital and other equity items.

Based on the definition, the statement of financial position of the regional governments and the accounts presented comply with the criteria stated in the definition. Therefore, no material difference was found between the statement of financial position of the regional governments with the corporate financial statements.

Fourth, the Statement of Operations. As stated in Paragraph 78, the conceptual framework of Governmental Accounting Standards presents an overview of the economic resources adding equities and their use under the administration of the central regional government for governance activities in a particular reporting period. Compared with the financial statements adhering to the Financial Accounting Standards, the statement of operations can be made similar with the income statement. Under PSAK No. 1 Paragraph 56 as revised in 2009, the income statement shall at least includes items as follows: 1) income, 2) business profit and loss, 3) debt burden 4) a part of the income or loss of affiliated companies and associates required uses the equity method, 5) tax expense, 6) profit or loss from ordinary activities, 7) extraordinary items, 8) minority rights, 9) net profit or loss for the current period. Above criteria indicate that the statement of operations of the regional governments and other accounts presented have met the criteria set out in the definition, so no material difference was found between the statement of financial position of the regional governments and the corporate financial statements. The problem remains in the name given to the statement of operations which feels improper. The statement of surplus deficit is better for use.

Fifth, the Cash Flow Statement. Based on Paragraph 80, the conceptual framework of Governmental Accounting Standards presents cash-related information related with the activities of operations, investment, funding, and transitory depicting the initial balance, receipts, expenses and ending cash balances of the central/regional government within a certain period. In the perspective of the Financial Accounting Standards, the cash flow statement provides information that enables the users to evaluate the changes in corporate net assets, financial structure (including liquidity and solvency) and the ability to affect the amount and timing of cash flow in order to adapt to the changing circumstances and opportunities (PSAK No. 2, 2009). Based on the compared definitions, no material difference was found between the statement of financial position of the regional governments and the financial statements of companies.

Sixth, Statement of Changes in Equity. Paragraph 82 of the conceptual framework of the Governmental Accounting Standards explains that the statement of changes in equity presents the increase or decrease in equity in a reporting year compared with the previous year and Notes to Financial Statements. Meanwhile, the highlight of the Financial Accounting Standards, statement of changes in equity describes an increase or decrease in net assets or wealth during the given period. Based on PSAK No. 1 Paragraph 66 under 2009 revision, companies must present a statement of changes in equity as the main component of the financial statements, that comprises: 1) net income for a given period, 2) each item of income and expense, profit or losses and amount based on the related PSAK recognized directly in equity, 3) cumulative effect of the changes in accounting policy and improvements to the fundamental error as set forth in the related PSAK, 4) capital transactions with owners and distributions to owners, 5) the balance of accumulated profit or loss at the beginning and end of the period and the change, 6) reconciliation among recorded values from each type of capital stock, agio and reserves at the beginning and end of the period, separately disclosing each change. In principle, the purposes underlying the definition of statement of changes in equity both SAP and SAK are the same. However, the accounts have their own the characteristics in use, but in overall, no material difference was found in the components of statement.

Seventh, Notes to the Financial Statements. Paragraph 83 of SAP conceptual framework highlights that Notes to the Financial Statements include a narrative description or details of the amount stated in the Statement of Budget Realization, Statement of Changes in SAL, Statement of Operations, Statement of Changes in Equity, Balance Sheet and Cash Flow Statement. Notes to the Financial Statements also consist of information on the accounting policies used by the reporting entity and the other information required and encouraged for a disclosure in the Governmental Accounting Standards as well as the necessary phrases to prepare the decent financial statements when compared with the definitions in the financial accounting standards, the financial statements cover (PSAK No. 1 paragraph 68 as revised in 2009): Information about the basis for preparing the financial statements and the accounting policies opted and implemented for important transactions and events, 2) Must-present information in the Statement of Financial Accounting Standards, not presented in the balance sheet, statement of income, cash flow statement and statement of changes in equity, 3) additional information which is beyond the financial statements, but deemed necessary for fair presentation. Basically, the intent and purpose of the definition of the financial statements by SAP and SAK are identical. As suggested by the definition, within the perspective of the Financial Accounting Standards, Balance Sheet, Statement of operations, Cash flow Statement, and Notes to Financial Statements comply with the Financial Accounting Standards. A difference lies in Statement of Operations, compared with the Financial Accounting Standards, the statement of operations is identical with the comprehensive statement of income presenting presents revenues and expenses in a given period. Streamlined basic financial statements of the regional governments help the drafters of financial statements to free from regular technical problems and too many components of reports to be prepared at the interim or year-end.

III. METHODOLOGY

Using the qualitative method, this study highlights a literature review by making comparison between the theories, previous studies and field practice based on the writers' experience (direct observation) The qualitative research method produces descriptive data either written or spoken sentences by people and observable behaviors where this approach focuses on the background and individual holistically (Moleong, 2011: 6).

IV. DISCUSSION

The preparation of fully accrual financial statements by the regional governments remains far behind that of corporations. Hence, significant changes are deemed necessary in the accounting policy in the government sector, especially in preparing components of the basic financial statements of the Regional Governments. The expected changes aim to ensure that the governmental financial statements provide quality information for users.

The possible challenges that the regional governments face are worries towards changes in accounting policies from the implementation of cash-based to accrual-based accounting and too many components of the financial statements to prepare. Consequently, under supervision by the Supreme Audit Agency (BPK), the opinion resulted remains the same as the previous year.

The discussion and the perspective of the Financial Accounting Standards suggest that streamlining components of basic financial statements such as the statement of budget realization and the statement of changes in the balance of budget surplus should be put into review. Given that both statements are likely to be the internal reports, the mechanism in budgeting and its realization should be more flexible.

Further, the Board of the Government Accounting Standards is recommended to examine the components of the financial statements of the regional governments to be simpler in compilation. Given that the Statement of Budget Realization and Statement of Changes in Balance of Remaining Budget are in principle also presented in Statement of Financial position, Statement of Operations, and Cash Flow Statement and realign the mechanism of proper budgeting to ensure flexible and easy technical implementation and therefore, it is deemed necessary to review budgeting policies into simpler, incorporative and efficient to fit into the internal need and external factors.

V. CONCLUSION

Based on the analysis performed, the components of the financial statements of the regional government in the perspective of the Financial Accounting Standards (SAK) can be streamlined into five components of the basic financial statements including the Statement of Financial Position, Statement of Operations, Statement of Changes in Equity, Cash Flow Statement and Notes to the Financial Statement. In addition, the Statement of Budget Realization and the Statement of Changes in Balance of Budget Surplus are made internal statements of management which are not presented to public. Aligned components of the financial statements adhering to the Financial Accounting Standards and the Government Accounting Standards will pave the way to setting the standards of financial statements in both public and business sectors.

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Business Groups and Firm's Capital Structure: Emerging Market Evidence

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Abstract: ***We examine motives of group-affiliated businesses in Pakistan about use of debt financing. We find that these firms maintain higher levels of debt relative to stand-alone firms. We also document evidence of risk-sharing hypothesis that group-affiliated firms have better risk profile since firms in the group enable each other to share risk by lowering earnings volatility and by reallocating resources to firms where they face constraints. These results are also supported by the findings that group-affiliates have better accounting performance than stand-alone firms. Further, we also examine whether business groups also act as an internal capital markets, in an environment with under-developed financial markets. Results support the view that business groups assist affiliated firms overcome some of the constraints in raising the external capital and are likely to provide an alternative way of financing for member firms. Our results also support tax-reduction hypothesis for the use of more debt financing by group-affiliates relative to stand-alone firms.***

Keywords: business groups, capital structure, ownership structure, firm performance, emerging markets

1. INTRODUCTION

Several recent studies document that diversified business groups, where a group of firms is typically controlled by a dominant shareholder, typically a family, is a wide-spread corporate ownership phenomenon in many developed and developing markets (La Porta et al., 1999; Khanna & Rivkin, 2001; Paligorova & Xu, 2014; Faccio & Lang, 2002; Claessens et al. 2002; Liu, Luo & Tian, 2015). Khanna and Yafesh (2007) defines business group as "typically consist of legally independent firms, operating in multiple (often unrelated) industries, which are bound together by persistent formal (e.g., equity) and informal (e.g., family) ties". However, whether family-ownership (and control) do add to the firm's value is an issue that is far from settled and we find conflicting empirical results (Fama and Jensen, 1985).

For instance, Anderson and Reeb (2003) document that family-controlled firms are more profitable and have higher firm value than other firms where ownership is widely dispersed. Similar results are also reported by Villalonga & Amit (2006). Previous studies also document that controlling family expropriates minority shareholders through other means such as pyramidal structures and higher levels of debt (Paligorova and Xu, 2012). However, there is insufficient empirical evidence on whether a controlling family also maintains high debt to facilitate expropriation given that highly liquid assets such as cash can be easily exchanged for private rents (Liu, Luo & Tian, 2015; Myers & Rajan, 1998)[1]. We examine whether group-affiliated firms with excess control by a group maintain higher leverage ratios as compared to stand-alone firms in Pakistan. We additionally examine some of the motives for group-affiliated firms to maintain higher levels of leverage such as tax-advantages or for risk-sharing purposes. Our third research objective is to examine whether group-affiliates outperform stand-alone firms in terms of financial performance. Finally, we also examine whether business group act as an internal capital market in mitigating their financial constraints.

We examine Pakistan's market because of the unique features of Pakistani business organizations. Like many Asian countries, family-controlled business groups is a significant feature of Pakistani capital market (Ghani and Ashraf, 2002; Cheema 2003; Abdullah, Shah and Khan, 2012)[2]. As noted by Fama and Jensen (1985), Demetz (1983), Maug (1998), that family ownership and control is considered as a less efficient ownership structure because of the inherent inefficiencies and the potential expropriation by the controlling family. Bennedsen et al. (2005) points out that family firms have survived and prospered in emerging markets because they adapt to peculiar environmental opportunities, inefficiencies, imperfections and constraints, and this renders it interesting to explore how the capital structure policies of Pakistani family-controlled firms are influenced by these features of Pakistani firms. For instance,

[1] Liu et al. (2015) document that family-controlled firm with excess control rights tend to maintain high levels of cash which they tunnel rather than invest or payout as dividends. Similar results are also reported by Chen and Wang (2014).

[2] Cheema et al. (2003) documents that family firm uses pyramidal structure where family control is maintained through cross-shareholdings and interlocking directorships. They also note that family firms control two-third of the textile sector companies and 56 per cent of the non-textile companies in Pakistan.

unlike developed economies that are based on formal relationships and legal contracts, Asian markets in general and Pakistan's business environment in particular, is dominated mainly by informal relationships such as strong personal ties, social networks, political affiliations, and affiliation to a particular religious or communal class. Under this institutional settings, strong personal ties and political connections of family founders may also influence firm's financial policies given that these connections have an influence on the personal incentives of these controlling shareholders in Pakistani firms.

Another common feature of group-affiliated firms in Pakistan is the excessive involvement of family members in the management as they hold top executive positions and are board members, and this implies that they enjoy enormous powers over the controlling firms. The board members are usually hand-picked. These arrangements results in poor corporate governance mechanisms and increases the possibility of expropriation.

Results of our study shows that, in Pakistan, group-affiliated firms maintain relatively higher levels of debt than non-group firms. We find support for the risk-sharing hypothesis that firms in the group support each other and that reduces earnings volatility and better positions firm to raise external capital in the market. Furthermore, we also find evidence that group-affiliation out-perform stand-alone firms in terms of accounting performance. Results also find support for the tax reduction hypothesis as a motive for group-firms to maintain higher debt.

This study is related to the literature on business groups in several ways. First, we examine whether business groups have developed as an internal capital market and provides evidence that supports the view that business groups help member firms in alleviating some of the constraints in accessing external financing and help reduce reliance on costly external capital in an environment with under-developed financial and capital markets. This study also provides support to risk sharing hypothesis. We find that business groups in Pakistan's market helps the affiliates to smooth earnings by reducing the earnings volatility and thus better positions them to raise external financing. Third, in line with the risk-sharing hypothesis we document that group affiliation has favorable impact on company's financial performance.

Next section of the paper reviews literature and develops testable hypotheses while section 3 presents detailed methodology followed by discussion of results and conclusion in the last section

II. LITERATURE REVIEW AND HYPOTHESES

2.1 Business groups and Leverage

A distinct feature of family-controlled businesses is the separation of ownership (that is, cash flow rights) from control rights (La Porta et al., 1999; Claessens et al., 2000) which give rise to agency problem and facilitates controlling shareholders in expropriation of minority shareholders in various ways such as tunneling activities where resources are reallocated among group firms through cross-subsidization (Beak et al., 2006; Byun, Choi, Hwang, and Kim, 2013; Fan and Wong 2002). Agency problem arises when controlling shareholders become more entrenched and manage firm in ways that best serve their interests (Stulz, 1988) and extract private benefits more than their investment could warrant. Debt can mitigate agency costs by reducing the misaligned incentives and can also constrain managers from overinvestment as it reduces free cash flows available to management (Jensen, 1986). Debt also subjects managers to increasing monitoring by external investors (Harvey et al., 2004). However, because controlling shareholders have higher voting rights than their cash flow rights, it facilitates greater control over resources and they may use debt for other purposes such as tunneling, transfer pricing, related party transactions (Joh, 2003; Baek et al., 2006) or to avoid ownership dilution (Stulz, 1988). Because of these incentives, controlling shareholders may use more debt for expropriations activities. They also have an incentive to compel some firms in the group to raise higher debt and reallocate these funds to firms where they can have direct access to these funds. Consequently, we develop the following hypothesis:

H_1: Because of the divergence between controlling and cash flow rights in group-controlled businesses, such ownership mechanisms incentivize controlling shareholders to maintain high debt levels.

One of the main advantages of debt financing is the tax-deductibility of interest expense. This incentive may be used by many firms to reduce tax burden (Miller, 1977). This incentive may also be used by controlling shareholders to increase debt ratios to alleviate tax payments. Our second hypothesis is as follows:

H_2: Group-affiliated firms maintain higher debt ratios in affiliated firms for tax-saving purposes, citrus paribus.

2.2 Business Groups and Business Risk Profiling

Business groups own firms from different industries making them fairly diversified groups. This diversification allows the group to create internal capital market. He, Mao, Rui and Zha (2013) argues that group-affiliated firms are helped by each other by facilitating risk sharing through transfer of resources from one firm to another in times of financial constraints. This helps groups to survive in the long-run, and provide affiliated firms an alternative sources of financing. Khanna and Yafeh (2007) uses data from several emerging markets and document that business groups facilitate risk-sharing among group members by lowering operating profit volatility. Since these affiliates have access to alternative sources of financing and can diversify their portfolio through cross-subsidization, this may contribute to their better risk profiles allowing them more flexibility to raise external financing at more favorable terms. Hence we formulate following hypothesis:

H_3: Group-affiliated firms utilize more debt because these affiliates have better risk profiles than stand-alone firms, which allow them to raise debt at favorable terms from external market

2.3 Business Groups and Financial Performance

As discussed in the preceding paragraphs for hypothesis 3 that because of the fairly diversified nature of firms in the business groups, these firms can take advantage of the infrastructure and competencies of the affiliates to become competitive and yield better financial performance (Fisman and Khanna, 2004). Chang and Choi (1988) also report that Chaebol firms in Korea are more profitable than non-group firms while Khanna and Palepu (2000) find similar results for Chile and India. Besides monitoring and control advantage (Shleifer and Vishny, 1997), families have extended investment horizon (James, 1999) and this may lead to higher investment efficiency. However, group-affiliation, ownership, and control is commonly perceived as a less efficient structure, particularly in developing markets where controlling shareholder has incentives for pursuing private rents (Fama & Jensen, 1985; Demestz, 1983). Furthermore, because of the weak legal and regulatory environment in developing markets and the unique position that controlling shareholder enjoys in the firm, they may expropriate minority shareholders through such activities as excessive compensation, special dividends, co-investment, related party transaction, or through tunneling (Johnson et al., 2000; Wang and Xiao, 2011) and higher levels of debt. Thus while controlling shareholders might pursue policies that satisfy their personal utility, many of these actions may result in suboptimal investments and financing decisions that inevitably result in poor firm performance (Bebchuck, 1994; Demsetz and Lehn, 1985; Faccio, et al., 2001). Given the mixed empirical results of economic advantages of group-affiliated firms, we develop a non-directional hypothesis about the group-affiliated firm's financial performance relative to stand-alone firms.

H_4: Financial performance of group-affiliated firms is different than the financial performance of stand-alone firms, satires Paribas

2.4 Business Groups and Financial Constraints

Presence of imperfections in capital markets such as information asymmetries, managerial agency issues, and transaction costs can create wedge between external and internal financing. Under such circumstances, internally generated funds can become a significant determinant of firm's investment decisions. Business group can be viewed as formal arrangements that mitigates the information asymmetric problems that firms face when they seek external funds. Business groups also allow development of internal capital markets (ICMs) where affiliates can have access to intra-group funds. ICMs thus facilitate access to capital and reduce reliance on external capital markets. ICMs can create value by increasing efficient allocation of capital among affiliates, particularly in an environment where capital markets are underdeveloped and information asymmetries are high. This efficient allocation of capital results from the manager's superior information about firm's potential investment opportunities.

Based on these arguments, business group's ICMs can mitigate firm's financial constraints by reducing its reliance on external capital markets and decrease the sensitivity of its investment to its cash flows. Several studies, beginning with Fazari et al. (1998), have shown positive investment-cash flow sensitivity for financially constrained firms. Many studies, such as Hoshi et al. (1991) and Prowse (1992) (for Japanese keiretsu), Shin and Park (1999) (for Korean chaebol) have reported that group-affiliated firms are less financially constrained since their investment is less sensitive to cash flows as such affiliates have better access to external capital. Hence, we develop the following hypothesis:

H_5: Group-affiliated firms face less financial constraints than stand-alone firms, citrus paribus

III. METHODOLOGY

To examine our research objectives, we use methodology of Paligorova & Xu (2012) as our baseline model. This model is represented by the following equation:

$$LEVERAGE_{it} = \beta_1 GROUP_{it} + \beta_2 PROF_{it-1} + \beta_3 TANGIB_{it-1} + \beta_4 LOGSALE_{it-1} + \beta_5 CASHFLOW_{it-1} + \beta_6 ASSETMAT_{it-1} + \beta_7 SIZE_{t-1} + \beta_8 CAPEX_{it-1} + \beta_9 NDT_{it-1} + \beta_{10} NDT_{it-1} * GROUP_{it} + \epsilon_{it} -------- (1)$$

Where $LEVERAGE_{it}$ is the ratio of total debt (Compustat items #9: DLTT and #34: DLC) to total assets. Many studies have used this measure in their corporate leverage analysis (e.g, Rajan and Zingales, 1995; Booth et al, 2001; Cho et al, 2014). Yet, several studies favor long-term debt as the main representation of firm's leverage. These studies (see e.g., Ferri and Jones (1979); Marsh (1982); Kim and Sorensen, 2016) argue that short-term financing is mainly associated with peculiar nature of raw materials financing as a convenient vehicle rather than a pure source of financing. However, main explanation provided by several studies (e.g, Shah, 2011; Shah and Shah, 2016, Shah and Khan, 2007) for our measure of leverage is that firms in the developing countries rely heavily on short-term loans, particularly in bank-dominated capital markets. However, we also conduct robustness test by using ratio of long-term debt to total assets (results are available on request). $GROUP_{it}$ is a dummy variable which equals 1 if a firm belongs to a group and 0 for non-group firm at year t. $PROF_{it-1}$ is a measure of profitability and is estimated as Earnings Before Interest and Taxes (EBIT) and then scaled by total assets. Pecking Order theory suggests negative coefficient for profitability since internally-generated funds have lower information asymmetry costs which may prompt profitable firms to maintain lower levels of leverage. $SIZE$ ($LOGSALE$)is the natural logarithm of total assets (sales). Trade-off theory argues that large firms face lower information asymmetries and lower incidence of default and, hence, are likely to employ more debt (Titman and Wessels, 1988). *CASHFLOW* is the operating cash flows and measured as Income Before Extraordinary Items (Compustat item #18: IB) plus depreciation (Compustat Item #133: DP), less taxes and interest expense (Compustat items #16: TXT and #134: XINT), less changes in net working capital (Compustat item #134: WCAPCH) and then divided by total assets. $TANGIB$ stands for tangibility and is the ratio of fixed assets (Compustat item #141: PPENT) to total assets. Tangibility is a proxy for collateral and allows firms to raise external funds at favorable terms. CAPEX is capital expenditures scaled by total assets. CAPEX can be used as a proxy for firm's growth opportunities and can have an impact on firm's demand for external funds. Finally, $ASSETMAT$ stands for asset maturity and is measured as: $ASSETMAT = \left(\frac{PPEGT}{AT}\right) \times \left(\frac{PPEGT}{Dep}\right) + \left(\frac{ACT}{Dep}\right) \times \left(\frac{ACT}{COGS}\right)$, where abbrevations stand for: PPEGT (Compustat item #7: Property, Plant and Equipment-Gross), AT (Total Assets), DEP (Depreciation expense), ACT (Current Assets, Compustat item#4: ACT) and COGS (Cost of Goods Sold).

To examine our second hypothesis, we include Non-debt tax shield (*NDT*) employing methodology of Paligorova and Xu (2012). NDT is depreciation divided by EBITDA. Equation (1) also contain interaction term of *NDT* with the group dummy variable. A positive coefficient for this variable suggests that group-affiliated firms use more debt than stand-alone firms for tax purposes.

To test our hypothesis (hypothesis 3) related to risk-sharing, we use methodology of He, Mao, Rui and Zhan (2013) and use "standard deviation of operating profit" as a measure of firm's risk in the following regression specification:

$$STDOPPROFT_i = \alpha + \beta_1 OPPROFIT_i + \beta_2 GROUP_i + \beta_3 SIZE_i + \beta_4 LEVERAGE_i + \epsilon_i -- (2)$$

Where $STDOPPROFIT_i$ is the standard deviation of operating profit. We calculate this measure using total number of yearly observations for each firm (Shah and Khan, 2007). $OPPROFIT_i$ is each firm's average operating profit (EBITDA) scaled by total assets, calculated using total yearly observations. $SIZE_i$ is the average size measured as natural log of assets. $LEVERAGE_i$ is the average debt to asset ratio. All measures were calculated using data of the sample time period. Since firms have different number of yearly observations in the sample, we use weighted regression estimation with number of observations for each firm as the weight. *GROUP* is a dummy variable that equals one if a firm belongs to a group and 0 for non-group firm. Negative coefficient on this variable indicates relatively better risk profiles for group-affiliated firms, which may prompt them to use more debt since better risk-sharing can help them to raise funds at beneficial terms.

Finally, we adopt methodology of Hoshi et al. (1991), Moyen, (2004), He, Mao, Rui and Zha (2013) to examine role of business groups on firm's sensitivity of investment to its cash flows, a measure of financial constraints, to examine hypothesis 5. Regressing firm's investment on cash flows, lagged cash flows, and other determinants of investments as control variables, these authors interpret variations in investment-cash flow sensitivity as indicative of financial constraints. We use the following econometric specification to test hypothesis 5:

$$INVSTT_{it} = \alpha + \beta_1 CASHFLOW_{it} + \beta_2 CASHFLOW_{it-1} + \beta_3 \left(\frac{CASHFLOW_{it}}{CAPX_{t-1}} + \frac{CASHFLOW_{it-1}}{CAPX_{t-2}}\right) * GROUP_{it} + \beta_4 CASH_{it-1} + \beta_5 SALE_{it-1} + \beta_6 LEVERAGE_{it-1} + \varepsilon_{it} ---------(3)$$

Where *INVSTT* represents capital expenditure in period t (Compustat item #145: CAPX) and divided by the beginning of period book value of net Property, Plant and Equipment (Compustat Item #08: PPENT); $CASHFLOW_{it}$ is the current period cash flow and is the sum of Net Income, Depreciation, and change in deferred taxes (Compustat items #172: NI, #14:DP and #74: TXDB, respectively) and then divided by lagged capital expenditure: (Formula: $\frac{CASHFLOW_{it}}{CAPX_{t-1}}$) while $CASHFLOW_{it-1}$ is measured using the formula: $\frac{CASHFLOW_{it-1}}{CAPX_{t-2}}$. *CASH* is sum of cash and cash equivalents (Compustat item #1: CHE) and then divided by beginning-of-period total assets (Compustat item #6: AT). This variable aims to control for the effect of corporate liquidity. *SALE* is a ratio of net-sales to total assets for period t, and we include lagged variable in the equation. This variable is part of the equation to account for the effect of production on firm's investment layout (Hoshi et al., 1991; He et al., 2013; Jorgenson, 1971). We also control for firm's leverage to account for the financial constraint imposed by debt financing (Ascioglu, Hegde and McDermott, 2007). Empirically, Lang et al. (1996) document a negative relationship between leverage and investment.

Beta coefficients β_1 and β_2 measures cash-flow sensitivity for stand-alone firms while $(\beta_1 + \beta_2 + \beta_3)$ characterize coefficients for group-affiliated firms. Hence, statistically different than zero negative β_3 coefficient implies that group-affiliated firms face less financial constraints than stand-alone firms. Furthermore, we also use firm firm-fixed effects model and also include time dummies as a robustness check. This specification allows to control for the unobserved relationships between investment and other firm-specific control variables. Time dummies allows to control for business-cycle effects.

Next section of the paper provides detailed methodology and analysis and last section concludes the paper.

3.1 Data sources:

We collect firm-specific accounting data from the Compustat Global database for Pakistani firms from 2001 to 2014 yielding 2934-yearly observations. Information on firm's group affiliation and ownership composition was sourced from the company's annual reports for each year of the sample period. We use methodology of He, Mao, Rui and Zha (2013) to identify group affiliation of firm if that firm's ultimate controlling entity has more than one firm in the group. Year-end stock price data was sourced from the online database of "The Businessrecorder", a daily newspaper.

3.2 Data Analysis:

Table 1 provides summary statistics for firm-specific characteristics, alongwith t-tests for the mean differences of these accounting data for the two groups of firms. On averge, group-affiliated firms use significantly more leverage (9.54%) than the stand-alone firms. Profitability measure shows that they are more profitable and have higher tangibility than stand-alone firms. However, stand-alone firms are significantly larger in size than the group-affiliated firms as shown by the mean values for assets and sales. In case of debt and equity issuances, group-affiliated firms have issued more debt and equity during the sample period.

Variable	GROUP	STAND ALONE	DIFFERNCE	P-VALUE
LEVERAGE	0.3793	0.2839	0.0954	0.000
SHORT TERM DEBT	0.7231	0.8332	-0.1100	0.067
LONG-TERM DEBT	0.1611	0.1300	0.0311	0.000
ASSETS (in billions of US $)	8.12666	16.6072	-8.4526	0.000
PROFITABILITY	0.0957	0.0780	0.0177	0.235
SALES (in billions of US $)	8.1546	16.2632	-8.8990	0.000
CAPITAL EXP	0.0653	0.0599	0.0054	0.061
CASH FLOW	0.0695	0.0823	-0.0128	0.760
TANGIBILITY	0.4970	0.4559	0.0411	0.000
Debt Issuance	0.040944	0.032086	0.008858	0.8675
Equity Issuance	0.04599	0.010784	0.035206	0.4187
CASH HOLDINGS				
Number of observations	1498	1435		
Number of Group-affiliated firms				
Stand-alone firms				

Table 1: Firm-specific characteristics of Group and Stand-alone firms

This table reports comparison of mean values of firm-specific characteristics of group-affiliated and non-group firms for the period 2011-2014. Leverage is a ratio of total debt to assets. Profitability is EBIT divided by total assets. Tangibility is a ratio of fixed assets to total assets. size and sale are in billion of US dollars. debt issuance is the yearly change in book value of total debt and then scaled over total assets. equity issuance is the yearly change in book value of equity less change in retained earnings, and then divided by total assets. Cash is cash and cash equivalents divided by total assets.

3.3 Empirical Resutls

This section report empirical results for the model of Paligorova & Xu (2012) to examine our research objectives. We include several explantory control variables identified by the extant literature as determinants of corporate leverage. These variables include capital expnditures, firm's average tax rate, size, liquidity, tangibility, profitiability, and cash flow. Table 2 reports empirical results for equation (1). We use linear regression model with robust standard errors with industry and time dummies included to account for the firm-specific time invariant effects and for for time-varying variations in the firm's capital strucure. Ceofficient estimates for the main variable, GROUP dummy, is 0.028588, which is positive and statistically significant, and shows that group-affiliated firms use 2.858 per cent more debt in their capital structute than stand-alone firms. This also confirms our realier results of univariate analysis reported in Table 1. Control variables in the equation has corresponding positive or negative signs as predicted by theory. For instance, coefficients for profitability and cash flow are negative and statistically significant and is consistant with pecking order theory that firms maintain flexibility and can time their external financing decisions. Positive coefficient for tangibility reinforces the view that tangible assets are proxies for collaterals and allows firms to raise more external funds.

Table 3 reports resutls for our tax-reduction hypothesis. We include non-debt tax-shield variable (NDT) in the regression specification (1). The coefficient for this variable is negative but is statisticaly not signficant. However, interaction term (NDT*Group) is negative and statistically significan indicating that business group firms utilize more debt than the stand-alone firms for the purose of alleviating tax liability. This supports our hypothesis that of the motivations for the higher leveage ratios for the group-affiliates may be for the debt-tax shield advantage.

Table 2: Regression for Hypothesis 1: Leverage ratios of Group-affiliated and Stand Alone firm

F(24, 904)	48.21	N	929	
Prob. F	0	R-squared	0.3418	
	Coef.	Robust Std. Error	t-stat	Prob.
$PROFT_{t-1}$	-0.1077	0.031193	-3.45	0.001
$TANGIB_{t-1}$	0.402434	0.044612	9.02	0
$SALE_{t-1}$	-0.05438	0.016071	-3.38	0.001
GROUP	0.057415	0.014833	3.87	0
$CASHFLOW_{t-1}$	-0.33318	0.06885	-4.84	0
$SIZE_{t-1}$	0.05131	0.016037	3.2	0.001
_cons	-0.1804	0.057653	-3.13	0.002
Time dummies included	Yes			
Industry dummies included	Yes			

Note: Depenet varialbe is the Leverage and is measured as firm's total debt divided by total assets. TANGIB stands for tangibility and is firm's fixed assets as a percentage of total assets. SIZE (SALE) is the natural logritam of firm's total assets (Sale). CASHFLOW is the operating cash flows and is sum of Income before extraordinary items plus depreciation, less taxes and interest expense, less changes in net working capital and then divided by total assets.

Table 3: Regression for Tax Reduction Hypothesis

F(24, 899)	32.74		N	924
Prob > F	0		R-squared	0.3346
	Coeff.	Robust Std. Err.	t	P>t
$PROFT_{t-1}$	-0.1198618	0.030104	-3.98	0
$TANGIBILITY_{t-1}$	0.4791983	0.0370722	12.93	0
$SALE_{t-1}$	-0.012532	0.0052612	-2.38	0.017
$CASHFLOW_{t-1}$	-0.38279	0.0683804	-5.6	0
NDT_{t-1}	-0.0113715	0.011423	-1	0.32
$NDT * GROUP_{t-1}$	0.0404315	0.0178863	2.26	0.024
Time dummies included	Yes			
Industry dummies included	Yes			
_cons	-0.0568628	0.0578433	-0.98	0.326

Note: Depenet varialbe is Leverage (Debt-to-assets ratio). Tangibility is firm's fixed assets as a percentage of total assets. SALE is the natural logritam of firm's sales. CASHFLOW is firm's operating cash flow and divided by total assets. NDT is non-debt tax shield (=Depreciation divided by EBITDA). Group is a dummy variable equals to 1 if firm beongs to a group and zero for non-group firm. NDT*GROUP is an interaction term of NDT and Group dummy variable. Group is a dummy variable equals to one if firm beongs to a group and zero if it is stand-alone.

Table 4: Regression for Risk-Sharing Hypothesis

Dependent Variable: STDOPPROFIT

R-squared	0.097	F(9, 212)	2.52	
		Prob.(F-stat)	0.009	
	Coefficient	Std. Err.	T	P>t
MEANOPPROFIT	0.0645081	0.0373923	1.73	0.086
AVERAGESIZE	-0.005638	0.0020135	-2.8	0.006
GROUP	-0.011344	0.0055614	-2.04	0.043
AVGELEV	0.0144912	0.0142797	1.01	0.311
ind1	-0.055555	0.0486135	-1.14	0.254
ind2	-0.0288602	0.027834	-1.04	0.301
ind3	-0.0155706	0.0287933	-0.54	0.589
ind4	0	(omitted)		
ind5	-0.065999	0.0309413	-2.13	0.034
ind6	-0.0240053	0.0336472	-0.71	0.476
cons	0.1379554	0.0343742	4.01	0

Note: *STDOPPROFIT* is standard deviation of firm's operating profit. AVERAGESIZE is the mean size for each firm calculated from the yearly observation for each firm in the sample. *GROUP* is group dummy equal to 1 for group-affiliated firm and 0 for stand-alone firm. *AVGELEV* is mean leverage calculated using yearly observations for each firm during the sample period. We also include industry dummies (ind1 – ind6) in the model.

Table 5: Comparison of accounting performance of group-affiliated versus stand-alone firms

variable	Coeff.	Std. Err.	t	P>t
GROUP	0.061711	0.002577	23.95	0
$CASHFLOW_{t-1}$	0.117231	0.02483	4.72	0
$SIZE_{t-1}$	-0.02468	0.007059	-3.5	0.001
$SALE_{t-1}$	0.055465	0.011415	4.86	0
$CAPEXP_{t-1}$	-0.12515	0.0285	-4.39	0
LONGDET	-0.10299	0.033477	-3.08	0.003
Time dummies	yes			

Note: *PROFT* is firm's operating profit measured as EBIT scaled by total assets. *GROUP* is dummy equal to 1 for group-affiliated firm and 0 for non-group firm. LONGDET is long-term debt divided by total assets. *SIZE* (SALE) is natural logarithm of total assets (Sales). *CASHFLOW* is firm's operating cash flows.

We report resutls for hypothesis 5 in Table 5. We use fixed effects model with robust standard errors to account for the unobserved heterogeneity acccross firms. The table shows that the group dummy variable is positive and statistically significant which shows that group-affiliated firm's financial performance is higher than the stand-alone firms. Hence, our resutls provide evidence that group-affiliated firms outform stand-alone firms in terms of operating performance.

Finally, Table 6 reports resutls for the financial constraints and internal capital market hypothesis. Coefficient for the interaction term (GROUP*CASHFLOW) is negative and statistically different than zero. We interpret this resutl to imply that a business group-affiliated firm's investment is less likely to be sensitive to its cash flows. Hence we find support for our hypothesis that business group firms have lower financial constraints, and this highlights the importance of business groups as internal capital markets, in mitigating firm's financial constraints by reducing its reliance on external markets and decrease the sensitivity of its investment to its cash flows.

Table 6: Fixed-Effects Model: Business Groups and Financial Constrai

Fixed-effects (within) regression	N	2378	N per group: min	1
Group variable: gvkey	Number of groups	272	avg	8.7
R-sq: = 0.1321			max	14
	F(19,271)	8.37	Prob(F)	0
investment				
	Coef.	Std. Err.	t-stat	Prob
$CASHFLOW_{it}$	0.00165	0.0007513	2.2	0.029
$CASHFLOW_{it-1}$	0.0060041	0.0027021	2.22	0.027
GROUP*CASHFLOW	-0.0035673	0.0011207	-3.18	0.002
$CASH_{it-1}$	0.4408691	0.1244061	3.54	0
$SALE_{it-1}$	0.0762974	0.0254008	3.00	0.003
$LEVERAGE_{it-1}$	-0.3465879	0.0662028	-5.24	0
Time dummies	Yes			
Industry dummies	yes			

Endogeneity

Several studies (see e.g., Demetz and Lehn, 1985; Paligorova and Xu, 2012) shows that studies on ownership and firm performance can suffer from the endogeneity problem since ownership can be endogenously determined. This endogeneity may arise because of unobservable firm heterogeneity that can correlate with both leverage and ownership structure. We address this issue by controlling for firm fixed effects. We employ fixed effects model to conrol unobservable firm characteristics that affect ownership structure. Results are provided in Table 7 for debt-tax shield hypothesis, Table 8 for comparison of financial performance between group-affiliated and stand-alone firms, and finally, Table 9 provides results for financial constraints and internal capital market hypothesis. Empircal resutls are similar to tables 3, 5 and Table 6, and reassures that empircal results do not suffer from the endogeneity problems.

Table 7: Fixed Effects for Debt-tax shield hypothesis

LEVERAGE	Coef.	Robust Std. Err.	t	Prob.
$ASSETMAT_{T-1}$	-0.0000577	0.0001337	-0.43	0.667
PROF	-0.527944	0.0679412	-7.77	0
$CAPEX_{T-1}$	0.2389133	0.0728098	3.28	0.001
$SIZE_{T-1}$	0.0304631	0.0167616	1.82	0.072
$TANGIB_{T-1}$	0.1037494	0.0446181	2.33	0.022
TAX-RATE	-0.003209	0.0017712	-1.81	0.073
$LOGSALE_{T-1}$	-0.039415	0.0141375	-2.79	0.006
$CASHFLOW_{T-1}$	-0.045299	0.0409753	-1.11	0.271
NDT_{T-1}	-0.004661	0.0058814	-0.79	0.43
$NDT_{T-1*} * GROUP$	0.0239587	0.0121596	1.97	0.051
Time dummies	yes			
R-sq.	0.38			

Table 8: Fixed-Effects estimation for financial performance comparision for Group-affiliated and Nong-group firms

	Coef.	Robust Std. Err.	t	Prob.
GROUP	0.0606803	0.0126418	4.8	0
$CASHFLOW_{t-1}$	0.1297943	0.0263325	4.93	0
$SIZE_{t-1}$	-0.011241	0.0071822	-1.57	0.12
$CAPEX_{t-1}$	-0.130158	0.0269481	-4.83	0
LONGDET	-0.125081	0.0387454	-3.23	0.002
Time dummies	yes			

Table 9: Fixed Effects estimation for Business Groups and Financial Constraints

	Coeff.	Robust Std. Err.	T-stat	Prob.
$CASHFLOW_{it}$	0.00165	0.0007513	2.2	0.029
$CASHFLOW_{it-1}$	0.006004	0.0027021	2.22	0.027
x4bg	-0.00357	0.0011207	-3.18	0.002
$CASH_{it-1}$	0.440869	0.1244061	3.54	0
$SALE_{it-1}$	0.076297	0.0254008	3	0.003
$LEVERAGE_{it-1}$	-0.34659	0.0662028	-5.24	0
Time Dummies included	Yes			
R-sq.	0.132			

IV. CONCLUSION

This paper examines the level of debt financing for group-affiliated firms in Paksitan's market.

The peculiar nature of developing markets like Pakistan warrants to examine the role of business groups which dominate the business environment in countries like Pakistan. Emprical resutls document that group-affiliated firms use more debt financing than the stand-alone firms. We also examine some of the motivations for relatively excessive debt financing by group-affiliated firms. We find suport for the risk-sharing hypothesis where group firms are involved in risk-sharing by smoothing out earning volatility by taking advantage of the group's internal capital market since these affiliates can reallocate resources among group members. This allows the affiliates to have better risk profile and position them to raise more debt with favorable conditions from the external market. Further, this stduy also finds support for debt financing as a tool to alleviate tax-liability for group-affiliated firms. Furthermore, this study also examined the importnace of business groups as ICMs and finds that it alleviates some of the financial constraints of the member firms and reduces firm's sensitivity of investment to its cash flows and thus it provides an alternative sources of financing for the affiliated members and reduces reliance on external finanincg in a country like Pakistan where financia markets are under-develoleved.

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Role of Internal Auditors in Whistle Blowing Program to Reduce Corporate Fraud

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1. Introduction

Whistle blowing is commonly defined as "…the disclosure of illegal, unethical or harmful practices in the workplace to parties who might take action" (Rothschild & Miethe, 1994). According to Fraud Survey 2004 by KPMG Malaysia, the findings highlighted the importance of implementing a well-defined and independent channel for whistle blowing and establishing an effective internal audit function to enable early detection of fraud. Internal auditors can help management create effective whistle blowing program that protect the employees and enable organisations to address problems before they become public knowledge.

This research aims to provide some empirical evidence about the receipt of whistle-blowing complaints by internal auditors in Malaysia. Motivation for this study comes from the important roles of whistle-blowing in minimising fraud and ensuring an effective system of internal control, and of internal auditor's role in the whistle-blowing program.

2. Problem Statement

Malaysia seems not to be able to reduce the occurrence of fraud, despite various efforts to promote good corporate governance for example via the establishment of National Integrity Plan. According to the 2009 Corruption Perceptions Index (CPI) by Transparency International, Malaysia is ranked 56th out of 180 nations surveyed with a 4.50 score out of 10, a decrease of 0.60 (from 5.10) from the previous year. CPI score of "10" represents highly clean and "0" represents highly corrupt. Malaysia ranked 47th out of 179 countries in Transparency International's Corruption Perceptions Index for 2008. In the first TI CPI report in 1995, Malaysia was fourth top-ranked Asian country, behind Singapore (No. 3), Hong Kong (No. 17) and Japan (No. 20), but 14 years later, Malaysia has dropped to sixth place when ranked No. 47 in the CPI 2008 report, behind Taiwan (No. 39) and South Korea (No. 40).

According to Fraud Survey 2004 report by KPMG Malaysia, the findings summarised below are of particular importance:

- 62 percent of respondents felt that fraud is a major problem for Malaysian business generally.
- 83 percent of respondents acknowledged experiencing fraud in their organisation. This is an increase of 33 percent from the 2002 survey.
- 36 percent of companies suffered total losses of RM10,001 to RM100,000 to fraudulent conduct in the survey period while 17 percent suffered losses in excess of RM1 million (the "survey period" is the period from January 2003 to December 2004).

3. Research Questions

The problem that this study dealt with is on how important is the internal audit function in Malaysian listed companies as the independent channel for the whistle blowing program activities. Do the Malaysian internal auditors actually receive genuine whistle blowing complaints for investigation and does this reduce the number of fraud occurrence in Malaysia?

4. Research Objective

The objectives of the study are as follows:

1. To examine the extent of the genuine whistle blowing complaints received by internal auditors from the employees and outsiders.
2. To examine the effectiveness of the whistle blowing policies in reducing the number of fraud occurrence.
3. To examine the effectiveness of the whistle blowing communication channel in combating fraud.
4. To examine the effectiveness of the internal auditing as whistle blowing recipient in combating fraud, in terms of its responsibility.

5. Research Significance

The results reported in this research may be useful to practitioners (such as internal auditors, top management, audit committee, standard setters and regulatory bodies) and academics in Malaysia, by providing relevant empirical data about an issue of importance to the Malaysian internal auditors.

To the practitioners, the study informs them of the effectiveness of the whistle blowing programs:-

- Internal auditor on their importance of their role as whistle blowing recipient in combating fraud
- Top management on the effectiveness of the whistle blowing programs implementation in their organization
- Board members or audit committee on the effectiveness of the internal auditors as the whistle blowing recipient in reducing fraud
- Standard setters e.g. IIA in developing standards related to IA roles in whistle blowing
- Regulatory Bodies e.g. BNM, SC in formulating guidelines on whistle blowing programs implementation

To the academician, this study examines the agency theory in terms of internal audit effectiveness as an agent to the principal (e.g., top management, board members or audit committee) in combating fraud. Internal audit is a feedback mechanism with the result that the principals have the ability to remedy any weaknesses in procedures before they have a significant effect on the overall internal control system and the financial condition of the organisation.

6. Dependent Variable: Fraud

Statement on Auditing Standards (SAS) No. 82 identified two categories of fraud as fraudulent financial reporting and misappropriation of assets. Fraudulent financial reporting (management fraud) is where management seeks to inflate reported profits or other assets by overstating assets and revenues or understating expenses and liabilities in order to embellish the financial statements. Misappropriation of assets (employee fraud) is where employees steal money or other property from their employers. Various fraud schemes could include embezzlement, theft of company property and bribery (Alleyne & Howard, 2005).

The Association of Certified Fraud Examiners (ACFE, 2008) defined occupational fraud as: the use of one's occupation for personal enrichment through the deliberate misuse or misapplication of the employing organisations' resources or assets. ACFE model for categorising fraud is known as the fraud tree. The fraud tree classifies fraud into three categories i.e. asset misappropriation, fraudulent financial statement and corruption.

The difference between the SAS and ACFE categories of fraud is that ACFE had one additional element that is corruption. However, this study utilises SAS fraud categories since this study examines fraud from the perspective of the auditors.

7. The Roles of Internal Auditing

Internal audit plays an important monitoring role in evaluating the effectiveness of control systems because of their position and authority in the organisation (COSO, 2003). Management today rely upon internal audit to provide assurance, confidence and trust that the internal controls are operating effectively (Al-Twaijry, Brierley and Gwilliam, 2003). The role of internal auditing in the review of effectiveness of internal control is to determine whether it functions as planned (Fadzil, Haron and Jantan, 2005).

The role of internal audit with regard to risk management is to provide objective assurance to boards that the main business risks are properly managed (IIA, 2004). This role is considered as a necessary input for the evaluation of the internal control and it is an integral part of their assurance role (Gerrit & Ignace, 2006). The roles of internal audit relating to risk management are also stated in the Malaysia Code on Corporate Governance and in its definition by The IIA Malaysia Code of Ethics.

Internal audit is considered an important governance tool to protect corporations from internal criminal behaviour (Nestor 2004). According to the Malaysian Code on Corporate Governance perspective, internal audit is one of the four cornerstones of corporate governance, along with the board, management, and external audit. The Performance Standard 2130 of the IIA's International Professional Practices Framework states that internal audit should assess and make appropriate recommendations for improvement the governance process. Dittenhofer (2001) and Goodwin (2004) stated that internal audit function is emerging as an important element of governance mechanism both in private and public sectors.

8. Theory Involved

Agency theory is widely taught in management schools and is derived from the financial economics literature. This theory postulates that the firm consists of a nexus of contracts between the owners of economic resources (the principals) and managers (the agents) who are charged with using and controlling those resources (Jensen & Meckling, 1976). This theory is also based on the premise that agents have more information than principals and that this information asymmetry adversely affects the principals' ability to monitor effectively whether their interests are being properly served by agents (Adams, 1994).

9. Research Framework

The independent variables are derived from SOX (2002); Kaplan and Schultz (2006); (AICPA, 2005); Murdock (2003, 2008) and PriceWaterhouseCoopers, (2003). SOX (2002) requires audit committees to take a role in whistle blowing to reduce corporate fraud while agency theory suggests that internal auditors are agent to audit committee. In this study, internal auditors act as an agent that runs the whistle blowing program for their principal, the audit committees. Kaplan and Schultz (2006) observed that in the majority of companies studied, internal audit had sole responsibility for documenting, investigating and resolving whistle blowing reports. Furthermore, Murdock, (2008) also stated that internal auditors responsibility in documenting and testing the effectiveness of controls may reduce the opportunities for fraud. SOX (2002) also mandate policies and protection for reporting wrongdoing. According to PriceWaterhouseCoopers, (2003) organisations that have suffered from fraud implemented whistle blowing policies while organisations that have not been fraud victims rely more on codes of conduct, while Murdock (2003) suggested that whistle blowing program is included in the code of ethics. SOX (2002) require reporting mechanisms be established for recording, tracking and acting on information provided by employees anonymously and confidentially while AICPA (2005) suggest that to encourage fraud reporting that involves management, anonymous reporting channel is essential.

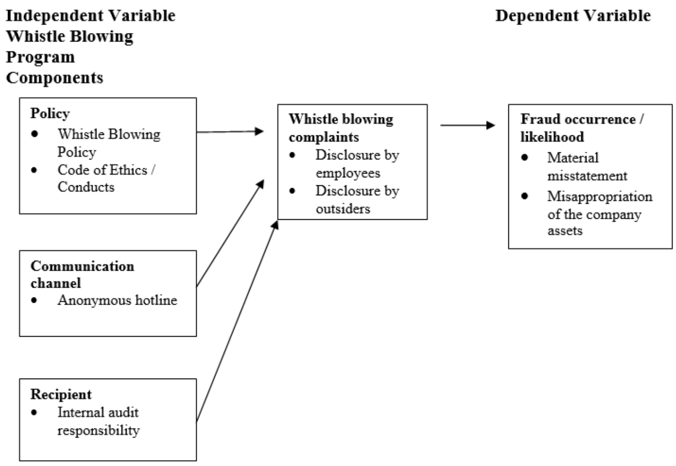
The mediating variable is the whistle blowing complaints practice derived from Teen & Vasanthi, (2006); Read and Rama, (2003) and Johnson and Wright, (2004). According to Read and Rama (2003) whistle blowing complaints practice was positively associated with internal audit responsibility. Teen and Vasanthi, (2006) highlighted that having a formal whistle blowing policy in place is significant because it encourages more people to complaints on wrongdoings while Johnson and Wright, (2004) suggest that code of ethics is one of the most critical factors influencing the decision to report questionable acts. In addition, Teen and Vasanthi, (2006) suggested that more would whistle blow if they could do so anonymously.

10. Hypotheses

The research hypotheses will examine the receipt of whistle blowing to fraud occurrence. In this study, prior research and literature were used to identify whether the whistle blowing program is effective in reducing the fraud losses and the effectiveness of the whistle blowing tools that is the policy and communication channel

Figure 1 below shows the research framework of the study.

***Figure 1*: Theoretical Framework**



10.1 Whistle Blowing Policy and Fraud

Whistle blowing policy and effective enforcement has the potential to significantly reduce fraudulent activity and also to send a signal that the organisation exercises good corporate governance (Eaton & Akers, 2007). Well-structured whistle blowing policy is crucial in the fight against fraud (Baker, 2008). Effective whistle blowing policy can help an organisation communicate its ethical practices to its employees and protect itself against fraud (Eaton & Weber, 2008). By issuing a detailed policy, the effect will be to deter any potential wrongdoers thus resulting in reduced losses from any wrongdoing and reduced costs in respect of investigating any wrongdoing (Durant, 2004). Whistle blowing policy cannot be effective if not communicated to employees, vendors, customers, and shareholders (Eaton & Akers, 2007). Timing is also crucial for an effective whistle blowing policy, therefore, employees should be made aware that the earlier a concern is highlighted, the easier it is to take action and correct the situation (Olander, 2004).

According to PricewaterhouseCoopers (2003) survey, although whistle blowing policy is implemented in most of the companies globally, the effectiveness of the policy differs from one part of the world to another. United States (US) companies are more confident on the effectiveness of the policy than the Western-Europe companies. The survey also shows that whistle blowing accounts for 8 percent of detected fraud (Baker, 2008).

Code of ethic or conducts is implemented in most of the companies globally. EY interviewed nearly 1,200 executives globally about their fraud experiences and on the effectiveness of the code, majority think that it is a useful measure to prevent fraud (Ernst & Young, 2008). Code of ethics or conducts is only effective when it is communicated and enforced consistently throughout the organisation (Rufus & Robert 2004). Organisations with a code of conduct suffered a median loss of US$126,000, compared with the median loss of US$232,000 in organisations where there was no such code (ACFE, 2008).

From the discussion above, hypotheses are as follows:

H1a: The more effective the whistle blowing policy support of the whistle blower, the lower the number of fraud occurrence.

H1b: The more effective the code of ethics or conducts, the lower the number of fraud occurrence

10.2 Anonymous Hotline and Fraud

Employee reporting is so critical in the detection of fraud since this mechanism offer a remarkable chance for companies to reduce their fraud exposure (Johnson & Wright, 2004). Most public corporations and many private organisations have implemented a whistle blowing hotline to help curtail fraud loss after the U.S. Sarbanes-Oxley Act of 2002 and UK Combined Code on Corporate Governance were introduced, This may be the most useful aspect of the whole governance reform movement, because an effective hotline is a powerful tool for combating fraud (Slovin, 2006).

Fraud losses are reduced by nearly 60 percent when a hotline is present (ACFE, 2004). Study indicates that 50 percents of tips were communicated through hotlines and it is effective in detecting fraud. Organisations with a hotline suffered a median loss of US$100,000, compared with the median loss of US$250,000 in organisations without (ACFE, 2008).

To encourage fraud reporting that involves management, anonymous reporting is necessary (AICPA, 2005). Hotline is one of the communication channels that ensure confidentiality of the whistle blower (ACFE, 2008). The advantage of anonymous reporting channels is that employees may discover financial statement fraud before others (e.g., internal auditors, external auditors, and/or regulators) and have the ability to inform the organisation earlier than others (Moberly, 2006). Regardless of the reasoning, internal auditors will find the best results are achieved by offering several reporting options to accommodate individual preferences (Slovin, 2006).

From the above argument, hypothesis is as follows:

H2: The more effective the anonymous hotline, the lower the number of fraud occurrence

10.3 Internal Audit Responsibility and Fraud

Internal auditor’s responsibility in documenting and testing the effectiveness of internal controls may reduce the likelihood that weak controls will create opportunities for fraud (Murdock, 2008). Organisations with an internal audit department are more likely to detect and self-report fraud (Coram, Ferguson and Moroney, 2008). Internal audit adds value through improving the control and monitoring environment within organisations to detect and self-report fraud (Coram et al., 2008). Organisations with an internal audit department suffered lower fraud losses compared with the organisations without an internal audit department (ACFE, 2008). The impact on fraud losses associated with internal audits was much greater than the impact associated with external audits since internal auditors full-time employees of the victim organisation, whereas external auditors spend a limited amount of time in a number of different organisations (ACFE, 2004). Operations audit, fraud auditing and continuous auditing are the various techniques utilised by internal auditors to reduce the direct and indirect costs associated with all forms of fraud (Bierstaker, Brody and Pacini, 2006). In addition, organisations that conducted surprise audits suffered lower losses compared to those that did not (ACFE, 2008).

From the above argument, hypothesis is as follows:

H3: The more the responsibilities of the internal audit, the lower the number of fraud occurrence.

10.4 Whistle Blowing Complaints Practice

Organisations can encourage people to make their worries known by establishing formal whistle blowing policy (Baker, 2008). CPA Australia Corporate Governance and Financial Reporting Centre (CGFRC) 2006 survey indicated that more respondents are willing to whistle blow if there is a whistle blowing policy. This finding supports the value of having a formal policy in place because it significantly encourages people to blow the whistle (Teen & Vasanthi, 2006). Whistle blowing policy is intended to encourage and allow employees and others to raise serious concerns within the company rather than seeking resolution outside the company. (Olander, 2004). Robust whistle blowing policy might discourage potential whistle blowers from approaching the press as a first resort (Durant, 2004). One of the most significant factors influencing an employee's decision to report questionable acts is the existence of a comprehensive ethics code in the organisation and regular employee training with respect to that code (Johnson & Wright, 2004).

To encourage whistle blowing, the reporting process should provide maximum assurance of confidentiality, integrity, and safety from retribution (Johnson & Wright, 2004). To encourage whistle blowing, a whistle blowing procedure should assure that the organisation will protect the identity of those who raise the complaints and do not want their name disclosed. (Lewis, 2006). More employees would whistle blow if they could do so anonymously, according to the CPA Australia Corporate Governance and Financial Reporting Centre (CGFRC) 2006 survey of their members (Teen & Vasanthi, 2006). National Bureau of Economics Research (NBER) finds that there are severe disincentives to report fraud using non-anonymous channels i.e. employees who blew the whistle had lost their job, quit under duress, or lost significant job responsibilities (Dyck et al., 2007). According to a 2002 study sponsored by Ernst and Young, respondents are more likely to report fraud if they could remain anonymous. One possible reason for the need to remain anonymous is the fear of retaliation (Slovin, 2006). Anonymous reporting channels may be useful in encouraging the reporting of wrongdoing by organisational members because anonymity minimise personal “costs” of reporting, such as retaliation and other potential penalties (Moberly, 2006). Employees will be less fearful of retaliation and more likely to express concerns with an existence of a specific, formal channel for reporting. For greatest impact, the reporting channels should allow anonymous communication (Lachman, 2008).

Credibility and power of complaint recipients affect the overall outcome of a whistle blowing incident (Near & Miceli, 1995). In addition, the codes of conduct have little impact if top management does not reinforce them by actions (Ponemon, 1994). Internal audit function is a natural choice for reviewing compliance with code of conduct. Whistle blower is more likely to report wrongdoing if the internal auditing is responsible for monitoring compliance with a corporate code of conduct (Read & Rama, 2003).
Whistle blowing is still the most effective mechanism to detect fraud (KPMG, 2008). Fraud is considered attractive when the fraud detection is low. A well-defined and protected channel for reporting suspicions of fraud facilitates whistle blowing and can lead to early detection of fraud (KPMG, 2004) while delay in detecting fraud can lead to a build-up of financial losses, reputation damage and financial restatement. According to PricewaterhouseCoopers (2003) survey, whistle blowing accounts for 8 percent of detected fraud globally (Baker, 2008). AFCE reported that the percentage of frauds detected in the US organisations by whistle blowing was a 40 percent in 2004 (Verschoor, 2005). By encouraging corporate whistle blowing, more fraud can be detected and the occurrence of fraud could be decreased. By providing protection via the policies, anonymous communication channel, independent recipient, the number of whistle blower coming forward could be increased. Hotlines repeatedly have proven their ability to detect and deter illegal behavior. Fraud losses are reduced by nearly 60 percent when a whistle blowing hotline is present (AFCE, 2004). Fraud is discovered via whistle blowing tips 40 percent of the time, which ranked tips as the number one method of fraud detection (Slovin, 2006). The increase in whistle blowing suggests that people perceive the risk of being caught of committing fraud has increased. Whistle blowing increases the chances of fraud detection, and thus it acts as a deterrent to the occurrence of fraud. Therefore, the greater the number of the complaint received, the lower the number of fraud occurrence will be.

From the above arguments, hypotheses are as follows:

H4a: Whistle blowing complaints practice mediate the relationship between the policy of whistle blowing and fraud occurrence that is the greater the extent of policy of whistle blowing, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

H4b: Whistle blowing complaints practice mediate the relationship between the communication channel and fraud occurrence that is the greater the extent of the anonymous hotline, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

H4c: Whistle blowing complaints practice mediate the relationship between the internal audit responsibility and fraud occurrence that is the greater the extent of internal audit responsibility, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

11. Methodology

The basic research design utilised for this study is a survey design. The collection of primary data was accomplished through the use of a mail survey instrument. The population used in this study is all of the companies listed in the Bursa Malaysia Stock Exchange in 2008. The total number of companies for the year ended 2008 is 855. The year 2008 was chosen due to the availability of the data and the current status of the data. The firms selected were from the companies listed on the Main Board and the Second Board of the Bursa Malaysia Berhad (BMB).

Primary data are used in this research. Primary data are collected by using mailed questionnaire to obtain chief audit executive perspectives concerning the role of internal auditors in whistle blowing program to reduce corporate fraud. The unit of analysis defined in this study is the internal audit department. Chief audit executives are used as the respondents for questionnaire because the author would like this study to be consistent with other studies.

The survey questionnaire was developed based on combination of several previous survey questionnaires related to fraud and whistle blowing adapted from:

- Read and Rama (2003)
- IIA Whistleblower Complaint Reporting Practices (Millage, 2008).
- KPMG Fraud Survey Report (KPMG, 2004)
- AICPA Tools for Audit Committee: Anonymous Submission of Suspected Wrongdoing (Whistle blowers), 2005

Table 1 below summaries the variables and dimensions used to operationalise the variables.

Table 1: **Summaries of Variables and Dimensions**

Variable	Dimensions
Fraud	Fraudulent financial reporting Misappropriation of assets
Policies	Whistle Blowing Policy Code of Ethics
Communication Channel	Anonymous Hotline
Recipient	Internal Audit's Responsibility
Complaints Practice	Internal Whistle Blowing External Whistle Blowing

The measurement of variables was obtained from the various questionnaires as per Table 2 below:

Table 2: **Summaries of Variables Measurement**

Variables	Measurement	Reference / Source
Fraud	Financial losses in Ringgit Malaysia (RM) over the past 2 years	KPMG Malaysia Fraud Survey 2004
Whistle Blowing Policies	Comprehensiveness Communication Training	Eaton and Akers, (2007) Olander (2004)
Communication Channel	Staffing Accessibility Confidentiality	Slovin (2006) AICPA Tools for Audit Committee: Anonymous Submission of Suspected Wrongdoing (Whistleblowers), 2005
Whistle Blowing Recipient	Compliance review Investigation	Read and Rama (2003)
Whistle Blowing Complaints Practice	Complaints received over the past 2 years	Read and Rama (2003) IIA Whistleblower Complaint Reporting Practices Survey 2005

12. Responses

Table 3 shows information on sampling and return rates of the questionnaires sent to the Chief Audit Executive of the Bursa Malaysia listed companies.

Table 3: ***Summary of Response Rates***

Questionnaires mailed	805
Undelivered	162
Subjects contacted	643
No. of Responses	213
Response rates (213 / 643)	33.13%

13. The Extent of Whistle Blowing Complaints

The first research objective seeks to determine the extent of the genuine whistle-blowing complaints received by internal auditors from the employees and outsiders. Table 4 represents the summary of the results.

14. The Effectiveness of Whistle Blowing Program

Based on the data from the questionnaire, the mean score was calculated for each item to see how the Chief Audit Executive perceived the effectiveness of the whistle blowing program.

Table 4: ***The Extent of Whistle Blowing Complaints***

Number of complaints	Internal	External
More than 20 genuine whistle blowing complaints	7 (3.29%)	2 (0.94%)
15 to 20 genuine whistle blowing complaints	5 (2.35%)	2 (0.94%)
10 to 14 genuine whistle blowing complaints	4 (1.88%)	4 (1.88%)
5 to 9 genuine whistle blowing complaints	8 (3.76%)	6 (2.82%)
Less than 5 genuine whistle blowing complaints	15 (7.04%)	15 (7.04%)
Not Applicable (not responsible for receiving complaints)	174 (81.69%)	184 (86.38%)

Table 5 presents the mean results of the effectiveness of the whistle blowing program items. From the results, it is observed that, 'Internal Audit Responsibility' is a highly rated item of whistle blowing program from the perspective of Chief Audit Executive with a mean of 4.13 while the least

Table 5: ***Means Scores of the Whistle Blowing Program From the Chief Audit Executive's Perspectives***

Rank	Item	Mean	Standard Deviation
1	Whistle Blowing Policy	3.15	0.56
2	Anonymous Hotline	2.96	0.75
3	Code of Ethics	3.57	0.64
4	Internal Audit Responsibility	4.13	0.68
5	Hotline Staffing	3.06	0.35

rated item is 'Anonymous Hotline' with a mean of 2.96.

15. Re-statement of Hypotheses

In light of the results of the factor analysis, some amendments have to be made to the statement of hypotheses stated earlier. The hypotheses tested in this study are as follows:

- Relationships between whistle blowing program components and fraud occurrence:

H1a: The more effective the whistle blowing policy support of the whistle blower, the lower the number of fraud occurrence.

H1b: The more effective the code of ethics or conducts, the lower the number of fraud occurrence

H2a: The more effective the anonymous hotline, the lower the number of fraud occurrence

H2b: The more effective the hotline staffing, the lower the number of fraud occurrence.

H3: The higher the internal audit responsibility, the lower the number of fraud occurrence.

- Relationships between whistle blowing complaints practice and fraud occurrence:

H4a: Whistle blowing complaints practice mediate the relationship between the policy of whistle blowing and fraud occurrence that is the greater the extent of policy of whistle blowing, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

H4b: Whistle blowing complaints practice mediate the relationship between the anonymous hotline and fraud occurrence that is the greater the extent of the anonymous hotline, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

H4c: Whistle blowing complaints practice mediate the relationship between the internal audit responsibility and fraud occurrence that is the greater the extent of internal audit responsibility, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

H4d: Whistle blowing complaints practice mediate the relationship between the hotline staffing and fraud occurrence that is the greater the extent of the hotline staffing, the greater will be the whistle blowing complaints practice be, leading to lower number of fraud occurrence.

16. Hypotheses Testing

Table 6 below presents the results of the hypotheses testing.

Table 6: ***Results of Hypotheses Testing***

Hypotheses	Analysis	Results
H1a	Policy has significant influence on the fraud, but positive influences	Rejected
H1b	Code of ethics have significant influence	Accepted
H2a and 2b	Does not has significant influence on the fraud losses	Rejected
H3	Does not has significant influence on the fraud losses	Rejected
H4a,b,c,d	Evidence shows that complaints practice positively influences the fraud occurrence	Rejected

17. Concluding Remarks

1. The whistle blowing program components should be redefined into five factors that is whistle blowing policy, anonymous hotline, code of ethics, internal audit responsibility and hotline staffing. The CAE regards internal auditing responsibility to be of great importance to the whistle blowing program.

2. The extent of the whistle blowing receipts by Malaysian internal auditors differs from other researched literature in the United States. Majority of the internal audit functions surveyed are not responsible for receiving the whistle blowing complaints. For the internal audit functions that are responsible for receiving the complaints, the percentages of complaints received are relatively low. This is possibly due to the differences between the Western and Asian corporate culture on reporting wrongdoings. Another possible reason is the absence of legislation in Malaysia that forces the establishment of whistle blowing program.

3. This study shows that only two out of five whistle blowing program components does statistically influence the fraud occurrence that is whistle blowing policy and code of ethics or conduct. The CAE perception about the effectiveness of whistle blowing policy in their organisation is positively related to fraud occurrence while CAE perception about the effectiveness of code of ethics is negatively related to fraud occurrence. This could be due to small number of companies implementing whistle blowing program and even when there is such program; it is not vigorous and actively promoted.

4. The results shows that CAE perception about the effectiveness of whistle blowing policy in their organisation is positively related to the fraud occurrence, that is the more the policy is perceived as effective, the more fraud incidents will occur. This result differ from other researched literature but confirmed the survey by PwC (2003) which indicates

that eight out of ten companies around the world state they have a whistle blowing policy in place, however only half of them state the policy is effective (Baker 2008). The result also shows CAE perception about code of ethics is negatively related to fraud occurrence, more the code is perceived as effective, lesser fraud incidents will occur. This result differ from other researched literature but confirmed the Ernst and Young (EY) 10th Global Fraud survey (2008) that approximately 90 percent of the respondents stated that they have the code and four out of five of those that have the code think it is useful in preventing and detecting fraud.

5. In terms of communication channel, the result shows that CAE perception about the effectiveness of anonymous hotline and hotline staffing does not have any relationship with the fraud occurrence. This result differ from other researched literature but confirmed the Ernst and Young (EY) 10th Global Fraud survey (2008) that less than a third of the respondents put a whistle blowing hotline as the most successful measures in preventing and detecting fraud.

6. Although the CAE surveyed perceived internal audit responsibility as an important component of the whistle blowing program, the result shows that it the perceived effectiveness of internal audit responsibility does not have any relationship with the fraud occurrence. This result differed from other researched literature and Ernst and Young (EY) 10th Global Fraud survey (2008) findings that internal audit is one of the successful measure in detecting fraud. The difference is possibly due to outsourcing of the internal audit functions. Accounting firms or external auditor may be less likely to detect fraud since they are not working full-time at the companies.

It can be seen from the study that whistle blowing complaints practice has positive relationship with fraud occurrence, that is the higher the number of complaints received, the higher the number of fraud occurrence. Therefore, this study failed to capture the mediating effects of whistle blowing complaints practice on the fraud occurrence. This could be due to small number of companies implementing whistle blowing program, low percentage of whistle blowing complaints receipt. In addition, there might be other variables that affect the relationship between the whistle blowing program and the fraud occurrence, example country legislation and corporate culture on whistle blowing.

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The Challenge of Empirical Research in Environment-Social-and-Governance Factors and Asian Corporate Performances

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Abstract: Many empirical researches related to Environment, Social and Governance (ESG) have been published by practitioners as well as academics. However, most of the researches face several challenges such as ESG factor definition and choice, statistical problems and pricing issues. Especially, the researches for Asian companies suffer from Asia specific challenges, such as lack of ESG disclosures, language problem and different ESG standard. Although there are several challenges, there are 2 common problems. Firstly, for most of the empirical researches, it is very unclear how ESG factors directly affect the corporate performance. ESG factors cannot directly affect corporate performances such as profits and stock prices. Therefore, future empirical researches need to focus on the mechanisms between ESG factors and corporate performances. The second problem is Asia specific one. Asian ESG standard might be different from western one. In conclusion, future empirical researches need Asian specific ESG evaluations, not simply following western evaluation methods.

Keywords: ESG, SRI, CSR, Corporate performance, Asia

1. Introduction

Many empirical researches related to Environment, Social and Governance (ESG) have been published by practitioners as well as academics. This is because the number of socially responsible investing (SRI) and ESG related funds are increasing. Friede et al. (2015) achieve comprehensive research about ESG and corporate financial performance (CFP) by using around 2200 researches. They conclude “Roughly 90% of studies find a nonnegative ESG–CFP relation. More importantly, the large majority of studies reports positive findings”.

However, most of the researches face several challenges such as ESG factor definition and choice, statistical problems and pricing issues. These empirical researches can be divided into several types, such as SRI performance researches, model portfolio performance researches, event studies and regression analyses. We will show these challenges in each type and discusses the perspective of Asian companies. Although the challenges are different by the type, there are common problems. Firstly, it is very unclear how ESG factors directly affect the corporate performance. ESG factors cannot directly affect corporate performance such as profits and stock prices. Therefore, future empirical researches need to focus on the mechanisms between ESG factors and corporate performances. The second problem is Asia specific one. Asian ESG standard might be different from western one. In conclusion, future empirical researches need Asian specific ESG evaluations, not simply following western evaluation methods.

In Section 2, we show the types of empirical researches in ESG factors and corporate performances, considering their challenges. Section 3 discusses about the common problems of the empirical researches and suggests the future researches. We conclude the discussion and show remaining problems in Section 4.

2. Type of empirical researches (Research background and literature review)

a. Socially responsible investing (SRI) performance

Many asset managers have provided SRI to retail markets. These funds are screened by several ESG factors. Many researchers compared these funds with normal funds and showed the performance difference. If SRIs outperform normal funds (benchmarks), ESG contributes to the performance. If they underperform, the negative screening destroys the opportunities. That is, SRIs are restricted to choose the stocks, while normal funds do not have these restrictions. Girard et al. (2007) test 117 US socially responsible mutual funds for the 1984-2003 periods. The research shows the underperformance of SRIs. On the other hand, Barnett and Salomon (2006) test on a panel of 61 SRI funds from 1972 to 2000 and conclude ‘The results show that as the number of social screens used by an SRI fund increases, financial returns decline at first, but then rebound as the number of screens reaches a maximum”. Considering other empirical tests, the results are varied and there is no consensus. Revelli and Viviani (2015) use a meta-analysis of 85 these studies and 190 experiments, claiming ‘The results indicate that the consideration of corporate social responsibility in stock market portfolios is neither a weakness nor a strength compared with conventional investments’.

There are several problems for the comparison of SRI performance with normal fund performance. The stock returns are not only affected by just ESG factors but by several other factors such as profit growth and risk. SRI performance studies cannot control these other factors well. In addition, the skills and investment philosophies of SRI portfolio managers are varied. There is another possibility that the managers do not have enough knowledge about ESG. Finally, there is a common problem for the performance studies. That is, we cannot know whether ESG information is already factored in the current stock prices. If they are already factored in them, we cannot obtain any alpha. As a result, SRI performance research does not show the relationship between ESG and corporate performances.

Regarding Asian perspective, there are few SRIs. Some global SRIs include Asian companies, but they are just small part of them. They are not enough for the empirical researches. Moreover, the screening criteria are for the companies in the western countries. Asian countries have different regulation and disclosure system. Therefore, we are not sure that the screening criteria work for Asian companies. We will discuss this issue more at the later part of this paper.

b. Creating model portfolio and calculating the performance

Some empirical researches do not use actual portfolios, but create model portfolios by their own screening criteria and calculate their performance. Derwall et al. (2005) create two kinds of portfolios, a best-in-class portfolio and a worst in class portfolio for the US stocks by using the eco-efficiency scores from Innovest Strategic Value Advisors (current MSCI). They assess the performance of 2 portfolios over the period 1995-2003 and find the difference by approximately 6% per annum (the best beats the worst). Kempf and Osthoff (2007) do the similar test by using the KLD rating data to measure the social responsibility of a company. They create two US equity portfolios, one with a high and the other with a low score. They test the trading strategy to buy high rating portfolio and sell low rating portfolio and obtain the abnormal return (from 1991 to 2004).

Although many researches support positive relationship between ESG and stock returns, there are also opposite results. Filbeck and Gorman (2004) focus on US utility industries (IRRC/S&P 500 electric company industry). They also create more compliant portfolio and less compliant portfolio and compare the performance of these two portfolios. As a result, less compliant portfolio outperforms more compliant portfolio for the period 1997-1999.

Overall, the results of the empirical researches which use the model portfolios are better than those of the empirical researches which use actual SRIs. One of the reasons is that the model portfolios reduce the noises which the actual portfolios have. Many SRIs are not composed by just ESG factors. SRI portfolio managers care about the other fundamental factors to build the portfolio. As we claimed before, the skills of the managers are also varied. The model portfolio strategies do not need to adjust these biases. However, the model portfolio type researches still suffer from the problem, which we pointed out at the SRI research. That is the relationship between the ESG information and stock price. If the ESG information is also factored in the stock prices, the performance calculation cannot support the hypotheses.

There are quiet few these kinds of the empirical researches to test Asian equities. The researches for US equities use ESG rating firms such as Innovest, which is a part of MSCI now. Their rating coverage focused on developed markets. Although they try to expand the coverage to Asian companies, they are not enough. Especially, the historical data is not enough to do empirical researches.

c .Event studies

Some empirical researches calculate the impact of ESG information by using event studies. For example, Klassen and McLaughlin (1996) conclude that “Significant positive returns were measured for strong environmental management as indicated by environmental performance awards, and significant negative returns were measured for weak environmental management as indicated by environmental crises”. Feldman et al. (1997) test longer term event studies (2 years) and find the environmental improvement information reduces the risk, or cost of capital. It leads to higher stock price (US companies).

The results of event studies look supportive for the relationship between ESG and corporate performances. In addition, these researches free form the issue whether ESG factors is reflected in the current stock price or not. However, there are several problems. The biggest one is that the longer the event window becomes, the less precise the test becomes. If the window becomes long, we cannot decide whether the abnormal return comes from ESG information or from other information. ESG information might affect the long term performance, but might not affect the short term performance. It is true that some environmental accidents such as BP oil spill affect the company value quickly and significantly, but they do not seem to be main purpose (to find the relationship between ESG and corporate performances). In conclusion, the event studies do not seem to fit ESG empirical researches.

d. Regression

The most common analyses to find the relationship between ESG and corporate performances are the regressions. They use ESG factors as independent variables and the corporate performance as dependent variables. ESG variables include the scores of ESG rating agents such as Kinder, Lydenberg, Domini, and Company (KLD), Innovest and Asset4. They also include the surveys, awards, etc. The corporate performance variables are mainly ROA and Tobin's Q.

Several results support the positive relationship between ESG and corporate performances. McGuire et al. (1988) claim that the corporate social performance is correlated with ROA, and Russo and Fouts (1997) show the positive connection between environmental performance and ROA.

Konar and Cohen (2001) pay attention to the disposing of toxic chemicals and environmental lawsuits. They find that less disposing and lawsuit companies tend to have a higher Tobin's Q. Dowell et al (2000) also find that "firms adopting a single, stringent global environmental standard have higher market values, as measured by Tobin's q, than firms defaulting to less stringent, or poorly enforced host country standards" for US companies. Finally, Guenster et al. (2005) conclude that there is a positive but asymmetrical relationship between eco efficiency and a firm's Tobin's Q, by using Innovest database.

These empirical researches use profitability and market valuation as corporate performance. Others pay attention to the cost of capital as corporate performance. For example, El Ghoul et al. (2011) choose the cost of equity for US companies. They find that the firms with better CSR rankings exhibit cheaper equity financing. On the other hand, Goss and Roberts (2010) choose the cost of debt for US companies by using KLD database. They conclude that "firms with the worst social responsibility scores pay up to 20 basis points more than the most responsible firms". However, they also inform that the impact is not economically important for the majority of the companies. Related to the cost of debt, Cheng et al. (2014) focus on the access to finance for 49 countries by using ASSET4 database. They find that better CSR companies can better access to finance.

The relationship between these regression researches and portfolio performance researches (both SRI and model portfolios) are trade off. If the regression shows the positive correlation between ESG and corporate performances, ESG information is factored in the stock prices through ROA and the cost of capitals (Tobin's Q is directly affect the stock price). If so, ESG portfolios cannot obtain the abnormal return or alpha. It is true that we can predict ESG improvement and invest the companies which are expected to improve their ESG. In this case, we can obtain alphas. However, SRI and model portfolios are composed of the current ESG level. Since regression researches have more supportive results than portfolio performance researches, ESG information might be significantly factored in the current stock prices. This situation might be big challenge to SRIs, which the portfolio managers create to outperform the normal funds. This situation causes ironical results. There is a possibility that the stock returns of bad ESG companies might outperform those of good ESG companies. The publicly traded companies involved in producing alcohol, tobacco, and gaming are called "sin" stocks. Hong and Kacperczyk (2009) claim that "we find that sin stocks are less held by norm-constrained institutions such as pension plans as compared to mutual or hedge funds that are natural arbitrageurs, and they receive less coverage from analysts than do stocks of otherwise comparable characteristics. Sin stocks also have high erexpected returns than otherwise comparable stocks, consistent with them being neglected by norm constrained investors and facing greater litigation risk heightened by social norms".

On the other hands, the results support investor's engagement activities. Some asset owners and asset managers engage to the companies to improve the performance. Since many engagements are related to ESG improvement, they lead to higher stock performance.

Although the results of the regression type researches support positive relation between ESG and corporate performance, there are several problems. For example, statistical problems such as endogeneity and serial correlation are also huge. Regarding endogeneity, there is a possibility that good performance companies tend to keen on ESG. It means that empirical research results might show that good performance companies tend to be good ESG companies. Therefore, the results mean that good corporate performance leads to good ESG, but they do not mean that good ESG lead to good corporate performance. It is true that many researches use two stage least square (2SLS) regression analysis, three stage least square (3SLS) regression analysis, and instrumental variables (IV) regression analysis in order to overcome endogeneity, but they are not enough to obtain the non-bias results. In addition, several ESG factors are correlated each other and we cannot choose right ESG factors for corporate performances. Regression researches also use several control variables such as profitability, Debt/Equity ratio, etc. The impact of the control variables on the dependent variables is much larger than that of the dependent variables (ESG factors). Moreover, the dependent variables and the control variables might be correlated.

The challenge to the regression researches for Asian companies is the choice of independent variables. We can obtain dependent variables such as ROA and Tobin's Q, and control variables, as US company researches use them. However, it is very difficult to obtain ESG factors (independent variables) from Asian companies. This information is often based on sustainability reports and CSR reports. Many Asian companies do not publish these reports. Even though some Asian companies publish these reports, the information is not enough. Cross sectional regression researches need the broad coverage of the sample. When just some companies publish the reports and majority of them do not publish them, the regression researches do not work well. Some scoring systems are based on ESG disclosures. In this case, the Asian companies which publish sustainability reports and CSR reports can get good scores. It is true that publishing reports should be appreciated in regard to ESG, but they might be overestimated. Just large companies which can publish several reports might be regarded as good ESG companies. Some US regression researches use the scores of ESG rating agents such as KLD, Innovest and Asset4. But as we discuss before, their coverage in Asia used to be small.

e. Researches for Asian companies

As we explained, there are several challenges to the researches for Asian companies. However, some researchers do test Asian companies. Rennenboog et al. (2007) research SRIs globally. They find that "the risk-adjusted returns of SRI funds in the US and UK are not significantly different from those of conventional funds, whereas SRI funds in Continental Europe and Asia-Pacific strongly underperform benchmark portfolios". Since there are SRIs which invest Asian companies, this kind of researches are possible. Lemmon and Lins (2003) just focus on corporate governance, not ESG. The research samples are East Asian companies and they show that the ownership structure does affect whether insider shareholders expropriate minority shareholders. As we discussed, it is very difficult to standardize and quantify environment factors (E) and Social factors (S) of Asian companies. Therefore, many researches just focus on corporate governance factors (G).

Although there are some researches for Asian companies, their research fields are very limited. In addition, we are afraid that western ESG might be different from Asian ESG. For example, Ramakrishnan (2017) insists on the difference between western ESG and Indian ESG. In addition, even in Asia, the ESG might be different. It is true that ESG is also different within western countries, but the difference within Asia might be bigger. Chapple et al. (2014) use the CSR reports of the top 50 companies in China, India, Malaysia, Philippines, Singapore and Thailand from 2002 to 2009 to research their CSR disclosure level. They claim that "our preliminary findings suggest that there has been a significant increase in both the levels and depth of reported CSR during the time period, suggesting an increase in CSR in these 6 Asian countries". However, they cannot find standardised patterns. Therefore, there is a possibility that each Asian country develops ESG differently.

3. Discussion

This paper showed several types of empirical researches and their challenges. This section discusses about these challenges comprehensively and deeply to look for the solutions. We divide the discussion into 2 parts, common issue and Asian specific issue.

Regarding the common issue, the main concern of many researches is the direct relationship between ESG and corporate performances. The main cause is ESG and the main result is the corporate performance. In the case of SRIs and model portfolios, the main cause is the portfolio construction by using ESG factors and the main result is the portfolio performance. In the case of event studies, the main cause is the events related to ESG and the result is abnormal returns. In the case of regression, the main cause is ESG factors (independent variables) and the main result is the performances such as ROA and Tobin's Q (dependent variables).

Although these empirical researches make an effort to find the direct relationship between ESG and corporate performances, it is very unclear how ESG factors directly affect the corporate performances. ESG factors cannot directly affect corporate performance such as profits and stock prices. For example, the labour related policies are appreciated as Social (S) factor. But we don't know how labour policy introduction leads to the profit and stock return. There is a huge distance between ESG factors and corporate performances. There are several mechanisms to bridge them. For example, the labour policies improve the employees' environment. As a result, the motivation of the employees is improved and it leads to increase the labour productivity. The labour productivity affects the corporate profits and stock price. This kind of the mechanism should be cleared. Considering these challenges, the empirical researches should move to the next step. They should find the detail of the mechanisms between ESG factors and corporate performances. Now, it is the time to focus on the detail, not the direct relationship. For example, we can research the relationship between the factories which are built by environmental concern (E factor) and their productivity, and the relationship between employees' motivation (S factor) and labour productivity. It is true that gathering the data is big challenge, but we can get clearer understanding about the mechanisms between ESG factors and corporate performances.

Several challenges about empirical researches come from the huge distance between ESG factors and corporate performances. For example, SRI and model portfolio performance analyses cannot control other factors (non-ESG factors). These other factors, not ESG factors, might cause their abnormal returns. Event studies are not allowed to use long windows because of other factor effects. However, we need the long windows to research the long term relation. The regression models need many control variables to neutralise the effects. However, we cannot choose perfect control variables and still suffer from endogeneity and serial correlation. The huge distance also leads to the cross sectional (company by company) researches, because all we can do is the comparisons of the companies. We must standardise the factors in the cross sectional researches. For example, the regression analyses must standardise their independent variables (ESG factors). It is extremely difficult to standardise ESG (especially E and S) factors because they vary from country to country, from sector to sector and from company to company. SRI and model portfolio performance researches and event studies also care about their comparisons between good ESG group and conventional group. In this case, they must neutralise sectors, market capitalization, etc.

We believe that the future empirical researches which focus on the mechanisms can solve past empirical research challenges. It is true that these researches such as the relationship between employees' motivation and labour productivity lack the comprehensiveness which past researches have, but the accumulation of these researches might overcome this problem. The new researches which we suggest are within a company (or some companies). Therefore, it is difficult to lead to the general conclusion. But, if these kinds of researches increase, we might reach to some general conclusions.

The other discussion point is Asia specific issue. The biggest challenge for Asian company researches are the lack of the disclosures about ESG. Few companies publish sustainability reports and CSR reports. Even though some companies publish them, they are sometimes written in local languages. If the research is regional or global base, not single country base (by the research in the country), it is very difficult to gather local language base information. As we explained, some researches use the scores of ESG rating agents such as KLD, Innovest and Asset4, but their coverage in Asia is not enough. The main reason is the lack of ESG disclosures and the local language disclosures. However, the authorities such as the stock exchanges in Asia require or suggest ESG disclosures to Asian companies. In addition, some Asian companies start to publish these reports voluntarily. The stocks of Asian companies are held by global investors (asset owners and asset managers) as well as domestic investors. Global investors ask Asian companies to disclose ESG information in English. Therefore, some companies, especially big listed companies which are heavily owned by global investors, gradually follow the requests. Many local investors don't keen on ESG. However, some local investors are gradually recognising the importance of ESG in their investment. Therefore, ESG disclosure pressures from local investors to Asian companies might increase. Although it takes the time for Asian companies to disclose ESG information in English, these trends might improve the current disclosure problems. We might obtain enough ESG information from Asian companies in the future.

However, there is another big challenge for Asian companies, in addition to the lack of ESG disclosures. It is the regulation and cultural issues. Many ESG related standards are western oriented and many Asian companies don't follow them. We cannot conclude that western companies are better than Asian ones in regard to ESG, because Asian companies have their own ESG standards.

As we discussed, there are regulation and cultural differences between developed western countries and Asian countries. This situation makes it difficult to directly compare western companies with Asian companies. Based on ESG rating agents, the scores of Asian companies are often much lower than those of western companies. Some reasons come from the lack of ESG disclosures of Asian companies and local language disclosure. In addition, some Asian companies have serious ESG problems. However, there is another reason that these agents are western companies and their perspective is western ESG standard. Many Asian companies are not familiar with western ESG standard. As a result, their score becomes lower. Some Asian companies keen on ESG, but their disclosure doesn't attract ESG rating agents. For example, some Asian companies care about their employees. They might obtain good S rating in Asian perspective. However, they don't introduce any labour policies, because they don't appreciate the policies. On the other hand, the western ESG standard appreciates the introduction of the policies. This is the cultural difference between western companies and Asian companies. Although the companies make an effort to provide their employees with several benefits, the lack of labour policies leads to the low score. This situation also causes the difficulties in the comparison within Asian companies. Some Asian companies which are familiar with western standard publish several ESG reports based on western disclosure. Western rating agents appreciate these companies and provide high scores for them. As a result, these companies are overestimated.

Considering these situations, future researches need Asian specific ESG evaluations, not simply following western evaluation methods. They should consider what is important to Asian company's ESG. In this case, the local knowledge becomes important to the researchers. These new researches might play an important role in Asian stock markets. As we mentioned, Asian companies are owned by western investors as well as domestic investors. There is a possibility that western investors might evaluate Asian company's ESG based on the western standard. If so, there might be mispricing in the valuation of Asian companies. Therefore, ESG evaluation based on Asian standard might correct this mispricing. It might be good news for the investors. If they can evaluate ESG of Asian companies, they might obtain the alpha by correcting the mispricing.

4. Conclusion

This paper shows the types of empirical researches in ESG factors and corporate performances. It also claims the typical challenges in each type and discusses the perspective of Asian companies. Although the challenges are different by the type, there are common problems. Firstly, it is very unclear how ESG factors directly affect the corporate performance. ESG factors cannot directly affect corporate performance such as profits and stock prices. Therefore, future empirical researches need to focus on the mechanisms between ESG factors and corporate performances. The second problem is Asia specific one. Asian ESG standard might be different from western one. In conclusion, future empirical researches need Asian specific ESG evaluations, not simply following western evaluation methods

This paper still remains several problems. At first, the coverage of past empirical researches is not enough. There are several types of the researches in addition to the types which we show. Secondly, this paper discusses about Asian perspective. However, Asia is also different country by country and we cannot show the details. Finally, although this paper focuses on the problem institutions and some suggestions for the future researches, it does not show tangible future researches. These problems are expected to be solved in the future.

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Transcendence of Behavioral Finance in Long Term Corporate Financial Decisions and Its Impact on Corporate Performance: An Evidence from Pakistan

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Abstract: ***The purpose of our study is to explore the relationship among mental accounting, optimism and loss aversion with two sub domains (Capital structure and dividend policy) of long term financial decisions and also show the effect of these decisions on performance of the corporate sector. The sample size of our study is consisted on eighty five (n=85). CEO, CFO, general managers, financial managers of listed firms are subject. Primary data collection method is used and questionnaires are mailed to CFO, CEO, finance manager, auditors and general managers etc. Simple random sampling technique is used to collect the data.***

The findings of our study shows that long term financial decisions have negative relation with behavioral biases and corporate performance is significantly correlated with financial decisions. We concluded that Managers are biased and they make decisions on their intuitions and perceptions.

Keywords: Optimism, Loss Aversion, and Mental Accounting, Long term financial decision, Corporate Performance

1. Introduction

Supporters of behavioral finance debate that all long term financial decision makers are human beings, so they are supposed to have some behavioral biases in their decisions. The previous literature suggests that person's decision could always affect many time by several types of behavioral biases. In several researches, researchers found the followers of the growing field of behavioral finance, they debate that behavioral biases have high impact on long term financial decisions, and it is highly recognised that behavioral science is important to our understanding of economic decisions (Kahneman and Tversky, 1979). Behavioral biases of a person tend him/her to deviate from a rational perspective and eventually lead towards irrational decisions (Pompian, 2006).

1.1 Historical Background of the Study

Historical base of behavioral finance is found back in 1967. A number of researchers and scholars have worked on behavioral finance and it has a wide historical background like general finance or any other domain of modern studies there are different schools of thoughts, scholars and theorist with their contributions of theoretical and empirical models. There are so many well-known scholars in this circle but most importantly Daniel khaneman who was awarded with Nobel -Prize in recognition of his work in 2002 and Amos Tversky who was the partner of Daniel Kahneman, firstly discussed about "how to handle the risk in our decisions". Furthermore Tharler is one of the main contributors of behavioral finance who is considered as the best theorist of behavioral finance and writer of Quasi-rational economics and the Winner's Curse

1.2 Long term financial decisions

The firm's performance is mostly based on the financial activities which are made by the managers of the firms in which maintenance of debt to equity ratio, debt to asset, net income, return on assets (ROA), return on equity (ROE) and return on invested capital (ROIC) etc. are involved. For this purpose most of the researchers have positioned for discussions and arguments which explain the importance of corporate performance in business community (Kang and Shivdasani, 1995; Nickell, 1996; Zeitun and Tian, 2007). The classical finance approaches, the financial decisions assuming everything constant and the rationality in the decision as it reflects all information available in the market (Fama, 1970). However, the behavioral finance always seek to explain the irrationality in the decisions and the impact of the behavioral biases in the decision making process of individuals. The long term financial decision includes the decisions strategies for capital structure and the dividend policy decisions. While considering long term financial decisions, classical finance inclines to argue that executives and managers are rational and self-interested in their decisions.

1.3 Behavioral Biases

The relationship between behavioral biases and long term financial decisions has made the study of corporate finance worthwhile. Numerous biases developed a relationship with the corporates financial decisions. The main objectives of the studies so far conducted on the behavioral biases were to make awareness among those persons who are biased in particular circumstances and always make irrational decisions. The assumptions of rationality cannot be achieved (Thaler, 1993). Mental accounting deals with recording & summarizing business dealings and financial transactions in books and further analyses it, verified it & report the results. Following are the components of mental accounting which are needed to be further explained that how outcomes are perceived and experienced, how decisions are made by providing inputs to cost & benefits, assignment of activities to specific account, sources and use of funds are labeled, it also concerns with frequency whose account is evaluated. Mental accounting is a set of cognitive operations used by individual and household to organize evaluate and keep track of financial activities (Tharler 1999).

Mental accountancy is more related to human psychological analysis of long term financial decisions, as man always wants to be on save side of his investments meanwhile risk taking is also human phenomenon. Past experience is the main source of information for every human during every decisions, a man process the information that he experienced from his past that further effect his current decisions. Moreover, it stated that rational investor can evaluate risk and return during long term financial decisions. Certainly, different classical schools of thought in financial economics make few assumptions about decision, psychology in all financial and economic models e.g. “The conceptualization of “Homo Economics” i.e. the always rational economic man”, is refused in behavioral finance and these have been considered difficult to achieve by irrational decision maker as proposed by behavioral school of thought.

Optimism bias is ordinarily characterized as the mixed up conviction that one's odds of encountering a negative occasion are lower (or a positive occasion higher) than that of one's companions. The inclination was initially exhibited by Weinstein (1980), who reported that a greater part of undergrads trusted their odds of occasions. On the off chance that investigators are excessively idealistic, negative data about the firms they cover can't be uncovered in an opportune way to outside financial specialists. At the point when negative data collected achieves a tipping point, it will be uncovered to the business sector, blasting the air pocket and bringing about a stock value crash. While our accident hazard contention is like that in the writing, the cause is distinctive. The clarification of accident danger in the writing originates from a firm's interior components, for example, bookkeeping conservatism, yet our center relates crash danger to outer variables, e.g. expert scope and examiner optimism-ness. Subsequently, our study offers another point of view on the determinants of accident danger (Scheier and Carver, 1985, 1992). Thinkers, scholars, educators, guiding and brandishes analysts, administration scholars, and famous self-improvement masters have put a premium on being sure as a method for accomplishing joy, fulfillment, efficiency, and self-improvement and adequacy (Judge, Erez, and Bono, 1998; Neck and Manz, 2007).

Loss Aversion was the first introduced by Amos Tversky and Daniel Kahneman in behavioral. Finance of loss Aversion is referring to people strong desire to strongly prioritize of avoids losses to get return. Kahneman conducted an Experiment in which he selected some participants and provided them with some chocolates and Mugs. One third of the participants were given mugs, one third chocolates, and rest of them neither provided with any of such commodities. Then they were asked to trade their mug for a chocolate or vice versa. 86 percent of the participants having possession of mugs again selected mugs to have, whereas ten percent of the people who already have chocolates wish to have mugs and altered their product. However there were only 50 percent participants who were starting without anything selected mugs to have. This asymmetry is commonly notion to occur because people expectant the pain of losses something to higher the Bless of gain it. (Kahneman&Tversky,1985; Ariely, Huber and Wertenbroch, 2005; Kermer, Wilson and Gilbert, 2006; Zhang and Fishbach, 2005). Loss Aversion is generally caution to be responsible for the greatest part of risk aversion (Köbberling&Wakker2005). So far the literature existing on the behavioral aspect of the long term financial decisions, it is though identified that studies do not attempt to answer certain questions which might be helpful for studying, identifying, and overcoming the behavioral biasness of decision making. Therefore, we tried to attempt the certain factors of behavioral biases and long term long term financial decision in finance, which are yet untouched and they are pivotal factors for understanding how to make optimal long term financial decisions.

1.4 Problem Statement

All long term financial decisions are made by human beings and they are subjected to psychological biases in their decisions however the behavioral finance always seek to explain the irrationality in the decisions. Whereas classical finance inclines to argue that executives and manages are rational and self-interested in their decisions. The long term financial decisions include the decision making strategies for the capital structure and the dividend policy decisions. The problem of our study is that why the relationship of optimism, mental accounting and loss aversion for two sub-domains of long term financial decisions is important and how these biases affect the performance of corporate sector.

1.5 Purpose of the study

The aim of our study is to explore the relationship among mental accounting, optimism and loss aversion with two sub domains (Capital structure and dividend policy) of long term financial decisions and also show the effect of these decisions on performance of the corporate sector. The objective of this study so far conducted on the behavioral biases were to make awareness among those persons who are biased in particular circumstances and makes irrational decisions.

1.6. Research Questions

- How behavioral biases influence the financial decision?
- What are the remedies and cure for overcoming such behavioral biasness for optimal decision making?
- To what extent the performance of corporate sectors is actuality affected by behavioral biases in developing country like Pakistan.

1.7. Research Objectives

- To find out the relationship between behavioral biases and financial decisions.
- To study the circumstances in which individuals are biased and consequences of biasness.
- To find out the certain recommendations for avoiding the biasness and making optimal financial decisions.

2. Literature Review

The latest studies on finance have provided different suggestions that behavioral biases are related with long term financial decisions. The integration of behavioral factors with long term financial decisions has expanded the attention of perceptible authors (e.g. see Thaler & Benartzi, 1993; Kunda, 1987; Griffin and Tversky, 1992 etc.).

2.1. Relationship between Optimism Bias and Long Term Financial Decisions

In this article main focus was on optimistic attitude of manager and its relation between behavioral bias, costs of free cash flow and its benefits. Manager's decision making in corporate finance is directly influence by optimism bias. We found two types of optimistic managers. One believes that firms risky securities are undervalued by capital market and they externally decrease positive net present values (NPV).And the second optimistic manager believes in over values of their own corporate projects and wish to invest in negative net present values (Heaton, 2002).Individuals who are more optimistic work harder, hope to resign more seasoned (subsequently hope to live more and more content with his/her occupation), and have more ability to do it again and they put more in individual stocks and spare more (Puri&Robinson, 2007). In any case, McKenna (1993) contended that there was clear confirmation for the fantasy of control, yet there was no proof for (unlikely) idealism as a consequence of his exploration. As per De Meza and Southey (1996), if confidence emerges from the deception of control, it is far-fetched that priors will be legitimately fused. As indicated by Manglik (2006), examination on behavioral biases. For example, idealism, in money related choice making started to assemble energy in financial matters just in the seventies. Researchers started to recognize an example of peculiarities in the monetary markets, for example, size impact and energy impact. At first, behavioral finance hypothesis was considered as deficient and 'no hypothesis', while balanced decision is considered normatively unrivaled by customary financial experts (Manglik, 2006). For instance, Shefrin and Statman (1985) find that mental bookkeeping, misgiving, and discretion are the behavioral biases that motivate the behavior to offer victors too soon and ride failures too long in budgetary markets.

Barber and Odean (2001) find men bring down their profits more than ladies in light of the fact that they are presumptuous and exchange too much. Optimism of a manager about the dividend policy of the firm optimistic attitude of a CEO or financial manager to announce dividend change due to his extraordinary positivity can cost significant effect on corporate performance. Optimistic manager takes private signal too strongly because of high influence of biasness, so average rate of change in dividend by such manager can be notice more strongly rather than any other rational manager. Market cannot find any difference between rational and optimistic manager but can react more on announcement of optimistic manager than rational one, furthermore the firm's agency or cash flow problems did not helps to find result. The result shows that the announcement of higher dividend not withstanding hangs in the dividend of optimistic CEO are not under goes by higher net change in earning than rational manager. Finally the optimism of manager cannot only effect the financial polices but also the market reaction on announcement and decision (bouwman, 2009).

Optimism bias in choice making is among the heartiest discoveries in exploration on social observations and comprehensions in the course of the most recent two decades (Helweg-Larsen &Shepperd, 2001). Different information recommends that individuals have a tendency to be unreasonably idealistic about the future (Weinstein, 1980). Idealism is a key for survival, despite the fact that there are occurrences in which confidence neglects to pass on favorable position and occasions in which even it may pass on an inconvenience (Carver et al., 2010). Weinstein (1980) led two studies that examined the tendency of individuals to be unreasonably idealistic about future life occasions. People who fill in as business experts or take part in the capital market reliably make wrong evaluations of probabilities, and especially, people regularly overestimate the likelihood of good results in budgetary choice making. Over optimism which is more likely founds in industry where strategic interaction play a role and second one is their prevalence should more subtly depend on demand (Englmaier 2010). Lack of optimism could undermine the visionary qualities essential for superior research and development departments and the central to successful sales forces/People that are overly optimistic about the future are ill-prepared to respond to setbacks that may occur (Bergen, Jelicic & Merckelbach 2009).

2.2. Relationship between Mental Accounting and Long Term Financial Decision

Mental accounting is composed of cognitive operation used by any person, group organizational manager or household. All of them use this (mental accounting) in their organizing, evaluating and making arrangement of their financial activities. There are three basic elements of mental accounting that are needed to be studied. First can be nominated as how outcomes or consequences are perceived and decisions are evaluated. Second element of mental accounting leads to the assigning the task or activities to specific segregated account which best explain about the source and use of funds and this is done in both real and mental account. The third and last suggested element is concerned about [or linked with] frequency with which these different assumed and real accounts are balanced which lies under umbrella of "bracketing" which refers that accounts could be justify or balances on daily weekly , monthly or yearly basis (Thaler , 1999) . Hypothetical decisions could be purely rational but as there is matter of real decision makers they are possibly affected by the prior results or outcomes of their doings

Investors of all type may be individual; managers or even gamblers are more likely willing to take risk and to choose a risky option only when they are followed by a prior gain. They are ready to frame their situation by keeping a break-even phenomenon in their mental account which helps them to justify their risk taking choice and balance it with prior gains. (Tharler and Johnson 1990) Practical interviews of consumer having sustainable holidays they tried to justify their decision about holidays with less sustainability ethical or put sustainable attitude away from time frame of holidays. Moreover they create positive mental accounting of saving when they do a virtue of saving or using natural resources carefully (Schütte and Smith, 2015).When we check investor decision whether they put their gains and loss in same account or they create different mental accounts noticeable results were found. Investors treat winner and losers portfolio differently they are more willing to sell the several stock when lose are realized rather than the realization of gains. This makes a clear contradiction to the statement that findings are purely dependent on investor's characteristics.

Whenever asymmetry is presented by some investors and those who are facing losses they will tend to sell the multiple or several stock and this behavior will be different for those who are in winning situation. So investors always tend to integrate their stock losses and are always willing to segregate the gains that they made in their stock portfolio (Lim 2004). In order to check the effect of mental accounting on behavior or decision making of people do almost same experiment just like Tversky and Kahneman (1981) was designed for a new sample space and its was observed that how multi-attribute choices can be analyzed and framed for different psychological matters. The situation of "Calculator" and "Jacket" was created and sample was asked to choose whether they will move, walk or drive to save £5 three cases for calculator were introduced would they drive when price is £115, drive when £15 or walk when £15, different results provides us the evidence for mental accounting in their decisions, 23%, 52% and 70% responded, yes they would do this respectively. Same like calculator, there were also some mixed result showing presence of mental accounting in the behavior while doing financial decisions (Ranyard, Nabi, 1992).Multiple experiments made with students, members from institute of Management and accounts showed that managers' decisions are more favourable when there is any problem in the system. This study reconciled the two biases and explains how regency bias increased the effect of mental accounting. Mental accounting was a great importance of corporate marketing managers they can use mental accounting bias for their promotional activities. Consumer when undergoes the financial terms of their deal whether normal deals or sales promotions. Focused discount framing affects more to the consciousness of saving to any consumer as compared to all discounting framing. However the straight and consistent promotional schemes also decrease the chance of focus and in this case mental accounting yields less to human mental so that variable discount should introduce that may lead to the focused and direct impact of consumer mental accounting (Liu, Chiu 2015) . Three level or hierarchy of mental accounts introduced which represent empirical, least basic (ACCT3) to most basic (ACCT1). Consumer usually divide their assets in to these three mental accounts, ACCT1 is lowest level in which one put its basic needs and survival needs. Whereas ACCT3 is highest level in which family flourishing and growth needs lies. So decisions taken by individual are highly influenced by the need which they have the level in which they are currently lying like ACCT1, 2 or 3 (Xiao and Olson 1993). It is also investigated that what is possible effect of such taxation on risk taking and work effort, differences related to the effect on the subject savings could also be expected. If one takes it in to different mental accounts for the judgment of their future and current income, one might not be able to pay enough care or attention to the plan of full taxation about their future income about the system of deferred tax and this effect is prevailing just because of behavioral bias mental accounting. (K Blaufus, J Hundsdoerfer, M Sünwoldt, N Wolf 2016). A new paradigm that reconciles the EMH with behavioral biases in a consistent and intellectually satisfying manner, and then it provide several applications of this new paradigm to some of the more practical aspects of investment management and consulting (Andrew W. Loy, 2005).

2.3. Relationship between Loss aversion and Long Term Long term financial decision

Loss aversion bias was firstly found by the Amos Tverskys and Daniell kahnemen. In economics and the decisions theories: referred to the people’s tendency of very strongly preferred to avoid the risk and preferred to acquire the gain. Los aversion is important concepts of the behavioral economics and relates to the prospect theory and also it captures the statement of that “loses appears greater than gain” Kahnemen and Amos Tverskys in (1979) and its thought that the pains of losses are the psychological: twice as the power full and as the pleasures of the gains.

Definition of the loss aversion by the Kahnemen and Tverskys is the version of a symmetric 50:50 debt; although this definition can the natural seen by as the preference base and few theoretical investigates the loss aversion bias in prospect theory these carry out in the term that preference. According to the (Tahir R, 2014) revealed that men and the older investors to the most overconfidence in investment while the women and older investor to the more risk averse. Loss aversion in which that the investor preferred to avoid the risk and try to invest in the sectors where the security that to have positive returned. Previous literature has provided the evidences that female are less overconfidence and more the risk averse then the male. While young investors have the witness that more over confident and has love to the risk situation as compare to the older. According to the Powel, Schubert and Gysler (2001) state that level of loss aversion in female are much higher than the males and female prefer to take lower risk. Michailovaa (2010) worked out that financials decision made by the individual investors in light of biases such as loss aversion. And their result show that the women are the more confidence than the men and its point out that loss aversion was the insignificant. In prospect theory (PT) proposed by the Kahnemen and Daniel Tverskys in (1979), the loss averse is different from that the risk averse. And some questions arise in the investment aspects like is that the loss aversion constant? The effects of loss are greater than the gain and the clearly a based line model that would be suggest that the across the people loss aversion is constant (Eric J. Johnsons, Simon Gachters, and Andreass Hermann, 2006). The Loss aversions are not the inherent parameters of preferences but very strong outcome through the values that who are constructed (Fischoff in 1991: Payne et al, in 1992 and Slovic in 1995). Example is that Loss aversion is arise when the status quo is includes the decision making (Gal 2006, Ritov and Baronn 1992); not the loss aversion is involved the decision when exchange the goods i.e. money (Novemskys and Kahnemen in 2005). Azouzu and Jarboui (2012) said there is negative relation between loss aversion and capital increase. CEO recognized firms operational risk level and loss aversion seeks to reduce its firm’s total risk by using of external funds. CEO of high operational firms tried to control the risk by financial risk introduced by debt and the issuance of new shares. He prefers to finance its investment projects through internal funds. Gachters et al (2007) investigates the loss aversion in riskless choices and experiments is conducted on toy car through the risky lottery, and find out that loss aversion is depend on the age, income, gender and occupation, while these both study are find out in similar results. Arora and Kumarii (2015) investigates the relationship of how age and gender effects the ability of risk taking in the long term financial decisions to investors through the loss aversion & regret and find out that the age & gender variables impact the ability of risk taking on investors through the loss aversion and regret. This study finds out, that the age and gender directly affects the ability of risk taking furthermore this study investigates that age and gender can affect indirectly the ability of risk taking through the loss aversion & regret. It is also suggested that the individual of age group 41 to 55 year are more loss averse than individuals falling in age group 25 to 40. Gachters and Herrmann (2006) find out that both the high riskiness and less riskiness task to loss aversion increase the age, income and wealth, while the loss aversion decrease through the education.

2.4. Relationship between Long Term Financial Decisions and Corporate Performance

The primary objective of corporate finance is to increase the value of corporation of shareholder and stakeholders as well. The financial decisions in corporations decide the overall performance of the corporation. A large number of studies have been focusing on the issues of financial (long term) decisions. It is of no doubt that rationality has been challenged by several authors in their study. For of instance, it has been said that behavioral issues do influence the financial (long term) decisions. Example, List (2003) finds out that gap among the buying and the selling for the experience and inexperience traders or investors of sports equipment and the argued that the loss aversion is disappeared when the traders or investors are experienced for buying and selling. Does is it evident that behavioral biases have direct influence on the financial decisions. There are two main sub-domains of long term long term financial decisions.

i) Capital structure
ii) Dividend Policy.

2.4.1 Capital Structure

Capital structure is first sub-domain of long term financial decisions being the long term of a firm which can be defined as the combination of different sources of funds in capital. There are three types of funds sources in the formation of capital structure i.e. internal finance, debt and equity. Modigliani and Miller (1958) proposed the theory of capital irrelevance and pretended the firm's value is not significantly associated with the capital structure of the corporate firms. It is thus associated with the fixed assets and the capital structure is irrelevance to the firm's value. Modigliani and Miller (1963) studying the role of taxation they argued that the firms should not rely on the debt financing as there are several disadvantages associated from it in contrast of internal funds. The performance of a firm's would be affected by the structure of the capital choice and also by the structure of the debt maturity (Zietun & Tian 2007). Authors have worked to prove a significant relation between the behavioral biases and financial manager's decision of capital structure of the corporations. It has been argued that entrepreneurial managers are more prone to the mental accounting and optimism bias rather than non-entrepreneurial mangers. Entrepreneurial managers are those who run their own business whereas non-entrepreneurial managers are the one hired executives (Barros and Silveria 2007).

2.4.2. Dividend Policy

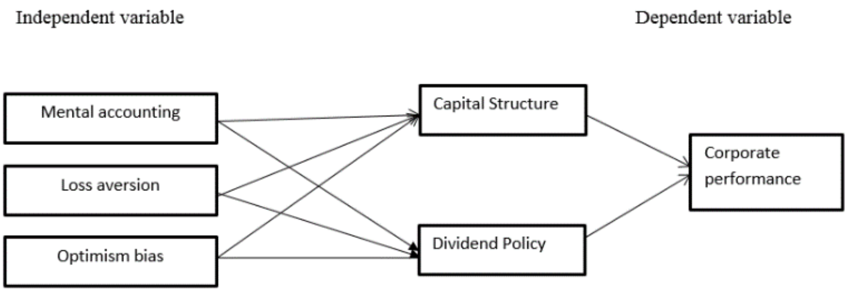
The second sub-domain of financial long term decisions is dividend policy decision. This decision includes a set of guidelines which determines whether the managers should pay the dividends or retain the earnings. There are three categories to pay a dividend to share holder

1. Residual dividend policy
2. Dividend stability policy
3. Hybrid dividend policy.

Generally firms adopt to maintain equilibrium between residual and regular dividend policy. This policy is most commonly used by the firms which pay regular dividends to its shareholders. The firms decide to pay a fix proportion of dividend from its earnings which are easily maintainable and also provide extra dividend in case if their earnings exceed from general level (Lee, 2009). Miller and Modigliani (1961) discussed that when investors can create any income pattern by selling and buying shares, the expected return required to induce them to hold firm's shares will be invariant to the way the firm packages its dividend payments and new issues of shares. Since the firm's assets, investments opportunities, expected future net cash flows and cost of capital are not affected by the choices of dividend policy, its market value is unaffected by any change in the firm's payout pattern. Thus, dividend policy is irrelevant and firm can choose any payout pattern without affecting their value. Ali and Anis (2012) have claimed that the top level decisions in general are driven by emotional biases. There is positive relationship between dividend policy, return of assets and also second school of thought that the performance of the firms is relevant with dividend policy (Amidu 2007).

2.5. Theoretical Framework

(Figure 1.1) **Research model**



The (figure 1.1) below explains the flow of the research model. Behavioral biases namely optimism, mental accounting, and loss aversion effects the long term financial decisions.

2.6. Hypothesis development

H1: There is a relationship between Optimism and capital structure.

H2: There is a relationship between Optimism and dividend policy

H3: There is a relationship between mental accounting and capital structure

H4: There is a relationship between mental accounting and dividend policy

H5: There is a relationship between Loss aversion and capital structure

H6: There is a relationship between Loss aversion and dividend policy

H7: There is a positive relationship between Capital structure and corporate performance.

H8: There is a positive relationship between dividend policy and corporate performance.

3. Methodology

The methodology of our study is based on primary data. The comprehensive description of the methodology is as follows:

3.1 Data Collection Procedure

The total sample of our study is eighty five (n=85) which consist on CEO, CFO, general managers, financial manager of Pakistan stock exchange listed firms. The simple random sampling technique is used to select the respondent for the data collection. The primary source is used to collect the data of study that will be conducted through questionnaire which obtained from previous researcher survey. Questionnaires were mailed in November 2015 and September 2016 to Managers, CEO, and CFO, auditors, finance manager and managing Director with the complementary letter which explains the purpose of it. All questionnaires were returned back in which 76 were males and 9 were females. Sector wise detail of respondent is, 9.4% from Automobile Assembler, 2.4 % from Automobile Assembler Parts, 7.1% from cement, 8.2% from chemical, 3.5% from engineering and fertilizer, 11.8% from Food & Personnel Care Products, 2.4% from glass and ceramics and 32.9 % from textile sector, 1.2% from textile weaving, Oil and Gas Marketing, Paper and Board, Pharmaceuticals, Power Generation & Production and Sugar and Allied etc. contribution involved. Credits rating of these entire sectors are also involved. The subjects of the experiment were CEO's, CFO's, auditors, General manager finance, general manager, director finance and managing directors of well reputed non-financial firms which are listed in Pakistan Stock Exchange.

3.2 Questionnaire

Questionnaire consists of two basic sections one contains demographic variable and the other have questions related to behavioral factors and financial decisions. In demographic variables the respondents were categorized in two basic categories on the basis of gender (i) Male (ii) Female. After that respondents were categorized on the basis of age in following pattern (i) 18-25 (ii) 26-35 (iii) 36-45 (iv) 46-55 (v) 56-60(vi) 60 and above. Categorization on the basis of education was on following pattern (i) Graduate (ii) Master (iii) M.S/M.Phil. (iv)PhD (v) CFA (vi) ACMA (vii) ACCA (viii) CA. Respondents were also categorized on the basis of experience within the corporation 3 year to 37 year. All the respondents were selected from non-financial firms of the Pakistan. Firm's characteristics were also focused in the questionnaire. Characteristics of the firm, like the annual revenue was categorized as (i) < 30 million (ii) 30-99 million (iii) 100-499 million (iv) 500-999 million (v) 1000-1999 million. Also foreign sales as % of total sales were categorized as (i) 0% (ii) 1-24% (iii) 25-49% (iv) 50% and above. Another characteristic of the firms are number of employee that work with firm also categorized into (i) 1-999 (ii) 1000-1999 (iii) 2000-2999 (iv) 3000- 3900 (v) 4000-4999 (vi) 5000-5999. And also include the firm & sector name in demographical variable. Crediting rating of the firms is also involved. And in second section questionnaire consists of 76 questions, in which 32 questions for measuring of financial decision, 18 items for corporate performance, 8 questions to measure mental accounting, a set of 9 questions were used to measure loss aversion and 9 others were used for optimism.

3.3. Measures

Behavioral biases are measured by using different scales.

- Long term financial decision: - Long term financial decisions are measured by questionnaire which is proposed by Bancel and Mitto in 2014 and Edelman and Farelly in 1983. They constructed the measurement scale of capital structure and dividend policy decisions based on 32 items. 5 likert scales is used to measure the response of the variable.

- Mental accounting: For measuring mental accounting we used the questionnaire of Ganesan (2013). The constructed items which we select for the measurement of mental accounting are based on 8 items. Five likert scales ranging from 1= "Strongly disagree" to 5= "Strongly agree" is used to measure the response of the items.

- Optimism: Optimism is measured by questions which are driven by Pompian in 2006 and the items of this variable constructed on 9 items and which were measured on five likert scale ranging from 1= "Strongly disagree" to 5= "Strongly agree"

- Loss aversion: - Loss aversion is measured by using questions which were designed by Ramiah in 2012 and the constructed items on this variable are 9. Also items measured on five likert scale ranging from 1= "Strongly disagree" to 5= "Strongly agree" of this variable.
- Corporate Performance:-Corporate performance was measured by questions which were driven by Deshpande et al in 1993 and Farrington in 2012. The construction of this variable based on 18 items, five likert scales ranging from 1= "Strongly disagree" to 5= "Strongly agree" is used to measure the each items.

3.3 Model and Statistical analysis Techniques

$\mathrm{CP_i} = \gamma_0 + \gamma_1 \mathrm{CS_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots\ldots (1)$
$\mathrm{CP_i} = \gamma_0 + \gamma_1 \mathrm{DP_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots\ldots (2)$
$\mathrm{CS_i} = \gamma_0 + \gamma_1 \mathrm{LA_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots\ldots (3)$
$\mathrm{CS_i} = \gamma_0 + \gamma_1 \mathrm{MA_i} + \epsilon_i \ldots\ldots\ldots\ldots.\ldots (4)$
$\mathrm{CS_i} = \gamma_0 + \gamma_1 \mathrm{OPT_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots (5)$
$\mathrm{DP_i} = \gamma_0 + \gamma_1 \mathrm{LA_i} + \epsilon_i \ldots\ldots\ldots\ldots.\ldots (6)$
$\mathrm{DP_i} = \gamma_0 + \gamma_1 \mathrm{MA_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots (7)$
$\mathrm{DP_i} = \gamma_0 + \gamma_1 \mathrm{OPT_i} + \epsilon_i \ldots\ldots\ldots\ldots\ldots (8)$

Where corporate performance is denoted by CP_i, DP_i with dividend policy while CS_i is a capital structure. Loss aversion, mental accounting and optimism are denoted by LA_i, MA_i and OPT_i respectively.

4 Results

4.1 Descriptive Frequency Analysis

Descriptive analysis is a brief technique of a given data set, which could either be an illustration of the whole sample.

Table 1:

4.1.1 Age wise respondent Distribution

Years	Frequency	Percent
18-25	7	8.2
26-35	11	12.9
36-45	24	28.2
46-55	31	36.5
56-60	11	12.9
60-Above	1	1.2
Total	85	100.0

The respondents of demographic variables age were analyzed. Results of this analysis showed in table1. The majority of respondent was fall in between the age of 46-55 years while the minority of respondents was fall in between the age of above 60 year.

The respondents of demographic variables gender were analyzed. Major portion of respondent were male which about 89% and 10.6% were female of total respondent is.

Table 2:

4.1.2. Gender wise respondent Distribution

Gender	Frequency	Percent
Male	76	89.4
Female	9	10.6
Total	85	100.0

The respondents of demographic variables gender were analyzed. Major portion of respondent were male which about 89% and 10.6% were female of total respondent is.

Table 3:

4.1.4 Education wise respondent Distribution

Education	Frequency	Percent
Graduation	5	5.9
Master	15	17.6
MS/M.Phil.	7	8.2
CFA	3	3.5
ACMA	8	9.4
ACCA	7	8.2
CA	40	47.1
Total	85	100.0

The respondents of education variables were analysed. Education rate of majority was 47.1 that consist on C.A qualified employees while the minority was 3.5 rates where CFA of the companies exist. And average fall in master level where respondent rate almost 17.6%.

Table 4:

1.1.2. Work Experience of respondents

Years of Experience	Frequency	Percent
3.00	1	1.2
4.00	2	2.4
7.00	2	2.4
8.00	4	4.7
9.00	2	2.4
10.00	6	7.1
11.00	4	4.7
12.00	5	5.9
13.00	4	4.7
14.00	2	2.4
15.00	6	7.1
16.00	7	8.2
17.00	5	5.9
18.00	6	7.1
19.00	3	3.5
20.00	4	4.7
22.00	2	2.4
23.00	3	3.5
24.00	2	2.4
25.00	2	2.4
26.00	3	3.5
27.00	4	4.7
28.00	1	1.2
29.00	1	1.2
31.00	1	1.2
33.00	1	1.2
34.00	1	1.2
37.00	1	1.2
Total	85	100.0

Table 5:

4.1.5 Industry type distribution

Industry Type	Frequency	Percent
Automobile Assembler	8	9.4
Automobile Assembler and Parts	2	2.4
Cement	6	7.1
Chemical	7	8.2
Engineering	3	3.5
Fertilizer	3	3.5
Food & Personnel Care Products	10	11.8
Glass and Ceramics	2	2.4
Jute	1	1.2
Leather and Tanneries	1	1.2
Oil and Gas Exploration	2	2.4
Oil and Gas Marketing	1	1.2
Paper and Board	1	1.2
Pharmaceuticals	1	1.2
Power Generation & Production	1	1.2
Sugar and Allied	1	1.2
Technology and Communication	2	2.4
Textile	28	32.9
Textile Weaving	1	1.2
Textile Spinning	4	4.7
Total	85	100.0

The above table shows 9.4% from Automobile Assembler, 2.4 % from Automobile Assembler Parts, 7.1% from cement, 8.2% from chemical, 3.5% from engineering and fertilizer, 11.8% from Food & Personnel Care Products, 2.4% from glass and ceramics and 32.9 % from textile sector, 1.2% from textile weaving, Oil and Gas Marketing, Paper and Board, Pharmaceuticals, Power Generation & Production and Sugar and Allied etc. contribution involved. And most of the data has been collected from textile sector; where respondent rate was noted 32.9%.

Table 6:

5.1.6. Credit Rating distribution of companies

Credit Rating	Frequency	Percent
AAA	24	28.2
AA	5	5.9
A	23	27.1
BBB	1	1.2
BB	1	1.2
Other	31	36.5
Total	85	100.0

Response rate as per credit rate was mostly from others rating in which AB and B are involved. But lowest rating of BB was involved while average rating of A.

Table 7:

5.1.7. Annual Revenue distribution of companies

Annual Revenue in US$	Frequency	Percent
30 Million or Less	38	44.7
30-99 Million	25	29.4
100-499 Million	17	20.0
500-999 Million	3	3.5
1000 -1999 Million	2	2.4
Total	85	100.0

We also analyzed annual revenue distribution of companies in which those companies which have 30 million or less annual revenue respond mostly. And the respondent rate of these companies was 44.7% while the lowest responding rate was 2.4% where companies have 1000-1999 million annual revenue in US$.

Table 8:

1.1.6. Foreign Sales distribution of companies

Foreign Sales	Frequency	Percent
0%	15	17.6
1-24%	34	40.0
25-49%	13	15.3
50-Above	10	11.8
Total	85	100.0

Foreign sales distribution of the companies also analyzed who respond mostly which have 1-24% of foreign sales. And the responding rate was 40.0 % but the lowest rate of foreign sales was 11.8% where companies have above 50% of foreign sales distribution.

Table 9:

1.1.7. Number of employee's distribution of companies

No of Employees	Frequency	Percent
1-999	21	24.7
1000-1999	13	15.3
2000-2999	17	20.0
3000-3999	4	4.7
4000-4999	8	9.4
5000-5999	22	25.9
Total	85	100.0

We also checked the characteristics of the firms on the base of number of employees, 25.9% are the highest rate of number of employee's respondents which have 5000- 5999 employees. While the lowest rate of number of employees respondents was 4.7% where 3000-3999 employees fall.

Table 10:

1.1.8. Designation wise distribution of companies

Designation	Frequency	Percent
Auditors	15	17.6
CFO	38	44.7
CEO	4	4.7
General Manager Finance	19	22.4
Director Finance	4	4.7
General Manager	4	4.7
Managing Director	1	1.2
Total	85	100.0

44.7 is the highest rate of designation wise distribution of the companies in which CFO of these companies are involved.

5.2. Model Assessment

As we want to forecast a relationship between behavioral biases and financial decisions for this purpose respondents were asked to respond to each statement using five Likert scale. Smart PLS software is used to analyze the data in which two stages are involved in PLS i.e., evaluation of the measurement model (outer model) in which specifies the relation between variables and it is also concern with related items and evaluation of the structural model (inner model) which explains the relationship between independent variable and dependent variable.

4.2.1 Discriminant Validity

Discriminant validity is a standard in which every single variable is different from the other, in discriminant validity pair-wise correlations between these factors. We checked the discriminant validity by using HTMT which is an abbreviation of Heterotrait-Monotrait Ratio. In table II results are shown:

Table 11:
Discriminant Validity by HTMT

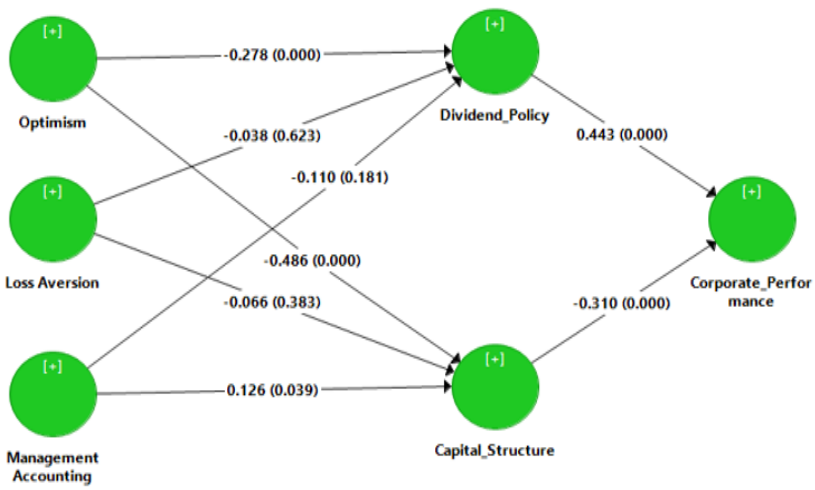
	Capital Structure	Corporate Performance	Dividend Policy	Loss Aversion	Mental Accounting	Optimism
Capital Structure						
Corporate Performance	0.391					
Dividend Policy	0.184	0.5				
Loss Aversion	0.05	0.054	0.03			
Mental Accounting	0.075	0.03	0.139	0.006		
Optimism	0.471	0.011	0.288	0.031	0.103	

Moreover HTMT results showed that confidence interval did not show the value of 1 for any variable which means that discriminant validity has proven.

4.2.2. Structural Model

Structural model (inner model) is based on the significant level of path coefficient and the amount of square R in the dependent variable (Hair et al, 2014). PLS algorithm and bootstrapping procedure with 85 samples was applied to establish the path coefficient and also their corresponding p-value to determine whether these path values are significant or not (Hair et al, 2014).

Table 12 shows the results of structural model from the smart PLS, Path coefficient value, t values are found, in which loss aversion has negative in-significant impact on capital structure and dividend policy (β=-0.066 & ρ= 0.383) & (β=-0.038& ρ=0.623) respectively.



Because mostly people act as risk averse for some hazards when they have had a segregated prior loss. There are two possible explanation first one is initial loss can create a negative effect, Isen and her colleagues (1982) have demonstrated quite strong "effects of mood upon" risk taking behavior. Second is the initial loss which can possibly induce a negative "hot hand" effect (Gilovich, Valone and Tversky 1985). People might feel that they aren't very lucky today and their chance of winning is lower today, (Thaler and johnsan 1990). Similarly optimism also has a negative significant impact on capital structure and dividend policy (β=-0.486 & ρ<0.05) and (β=-0.278 & ρ<0.05) respectively as it also discussed in the study of Lin, Liao, Chang and Chen, 2013. Mental accounting has positive significant impact on long term financial decisions as result shown in Table. Every person either investor or consumer use their past experiences to make a future predictions, (Paul, 2014).

Table I2:

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Value
Capital Structure > Corporate Performance	-0.31	-0.309	0.059	5.291	0
Dividend Policy > Corporate Performance	0.443	0.442	0.06	7.332	0
Loss Aversion > Capital Structure	-0.066	-0.066	0.075	0.872	0.383
Loss Aversion > Dividend Policy	-0.038	-0.037	0.077	0.492	0.623
Mental Accounting > Capital Structure	0.126	0.13	0.061	2.067	0.039
Mental Accounting > Dividend Policy	-0.11	-0.114	0.082	1.341	0.181
Optimism > Capital Structure	-0.486	-0.485	0.058	8.415	0
Optimism > Dividend Policy	-0.278	-0.274	0.071	3.933	0

While there is Positive association between dividend policy and performance (β=0.443 & ρ=0.000). Thus our study supports the 2nd school of thought in which dividend policy is relevant to the performance of firms (Amidu, 2007). While capital structure of the firm's had a significantly negative (β=-0.310, ρ=0.000) impact on the firm's performance measures, in both the accounting and market's measures (Zeitun and Tian, 2007).

Additionally, the R square values are also listed in table IV. The values of R square weak, medium and substantial for the variables in the structural model are 0.096, 0.242 & 0.342 respectively (Hair et al, 2014). Furthermore the effect size of the model is shown in table V, in which the value of square f shown the individual effect of the dependent variable in explaining the variance in the inner model.

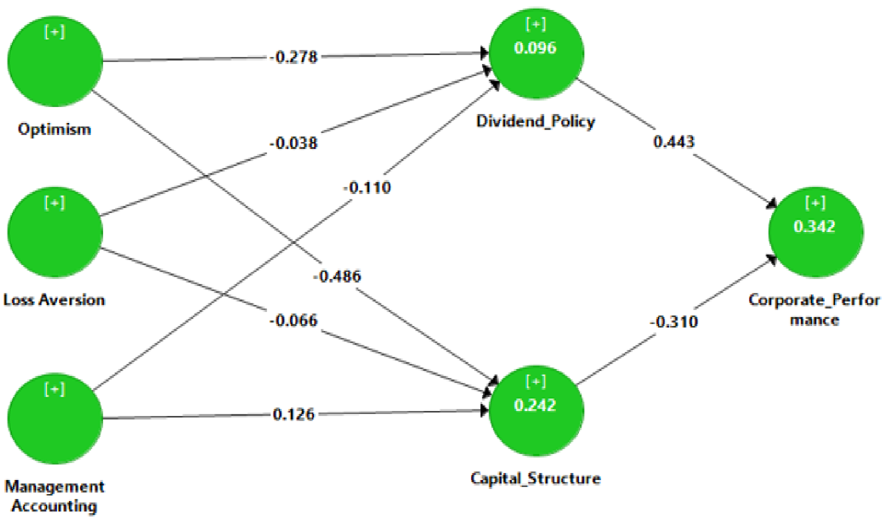
Table I3:

	R Square	R Square Adjusted
Capital Structure	0.242	0.227
Corporate Performance	0.342	0.334
Dividend Policy	0.096	0.079

From table 14 we can see Loss aversion, mental accounting has small effect with capital structure but optimism has medium effect with capital structure but it has small effect with corporate performance. And loss aversion, mental accounting and optimism also have a small effect with dividend policy but have a medium effect with corporate performance.

Table 14:

	Capital Structure	Corporate Performance	Dividend Policy	Loss Aversion	Mental Accounting	Optimism
Capital Structure		0.141				
Corporate Performance						
Dividend Policy		0.288				
Loss Aversion	0.006		0.002			
Mental Accounting	0.021		0.013			
Optimism	0.308		0.084			



5. Discussion:

The study is designed to establish the relationship between behavioral biases and the long term financial decisions with the behavior of 85 CFO and CEO, financial managers, general managers, auditors, CFA , ACCA and CA of non-financial firms which are listed in PSE. The purpose of our study to shows how behavioral biases can affect our long term financial decisions. For this purpose we used smart PLS (SEM) Technique for the evaluation of relationship among different independent (Optimism, Loss aversion and Mental accounting) and dependent variable (Long term financial decision). PLS is based on SEM which means structural equation modeling is chosen because of its reliability to handle small sample size and also it provide consistency evaluation for the small size (Banker et aI., 2006). Although many past researches have already explained the impact of these biases on financial decision, usually there was a lack of theoretical supporting, and some restriction on their study. Our research seeks to overcome these limitations by analysis of these biases. As our analysis shown in tables as we have a hypothesized in H1 that there is a relation between optimism and financial decision, the results of our study shows that optimism has a negative significant impact on capital structure and dividend policy (β=-0.486 & ρ=0.000) and (β=-0.278 & ρ=0.000) it also found in the study of Lin, Liao, Chang and Chen, 2013). For example, separate and having a drinking issue to be lower than that of different understudies, and their odds of occasions, for example, owning their own particular home and living beyond 80 years old to be higher than that of different understudies. Since a greater part of people in a gathering can't be above (or underneath) the mean unless the circulation is profoundly skewed, these discoveries spoke to a bias at the level of the gathering. Different terms speaking to the same develop incorporate "improbable idealism, "good faith bias," and "individual tale." It is likewise conceivable to be optimism one-sided by being pompous about the target odds of encountering a positive occasion (or maintaining a strategic distance from a negative occasion), regardless of how one's odds contrast and those of one's companions. And our results shows Loss aversion has negative in-significant relation with capital structure and dividend policy (β=-0.066 & ρ= 0.383) & (β=-0.038& ρ=0.623) respectively as we discuss earlier, mostly people act as risk averse for some hazards when they have had a segregated prior loss. There are two possible explanation first one is initial loss can create a negative effect, Isen and her colleagues (1982) have demonstrated quite strong "effects of mood upon" risk taking behavior. And second is the initial loss can possibly induce a negative "hot hand" effect (Gilovich, Valone and Tversky 1985). In H3 where mental accounting has a relation with long term financial decisions and our results show mental accounting has positive significant impact on long term financial decision. For instance, Kahneman and Tversky directed a study in which a greater part of subjects declined to pay for another theater ticket, which they were told would supplant an indistinguishably estimated ticket beforehand purchased and lost. In any case, when the reason was adjusted and the subjects were advised to envision that they had not lost a past ticket be that as it may, rather, a proportional whole of money—as were mulling over the ticket buy itself surprisingly—a dominant part decided to pay. Kahneman and Tversky inferred that subjects had a tendency to assess the passing of a ticket and the price tag of another ticket in the same Mental accounting; losing a ticket and spending for another one would speak to two misfortunes caused progressively, charged from the same group of advantages. The loss of real money, be that as it may, and the buy of a ticket were charges assessed independently. Subsequently, the same total misfortune felt less extraordinary when dispensed more than two unique records. H4 is rejected because capital structure has a negative but significant effect on corporate performance, it also found in the study of Gleason, Mathur and mathur (2002). As H5 is accepted because our results show dividend policy has a positive significant relation with corporate performance, (Amidu, 2007).

6. Conclusion & Implications:

The main objective of our study is to examine the effect of behavioral biases on long term financial decisions and also check how these long term financial decisions affect the corporate performance. Analysis are performed by sample of 85 respondents which we collected through questionnaire from CFO, CEO , financial managers, auditors, CFA, ACCA, General managers and CA of non-financial firms which are listed in Pakistan Stock Exchange. Our findings show that behavioral biases have negative impact on our long term decisions and it also supports many previous empirical studies. But these decisions have positive significant effect on the firm's performance and it supports the second school of thought.

Our study also conclude that all long term decisions are not on the base of rationality, there are some involvement of behavioral biases people don't want to take risk for higher profit because they act like risk averse or some time they thought first initial loss can possibly induce a negative "hot hand" effect (Gilovich, Valone and Tversky 1985) because people take decision on the base of past experience. Our Study also explains humans consciously and unconsciously effected and influenced by behavioral biasness most of the people behave like risk averse, previous experience self believes and emotional attachment and emotional affiliation that why they are not much involved in financial decisions. It is also noticed some time adventures and efficiency become the reason of unexpected financial decisions. Indeed the findings of the study were robust and helpful for the researchers, students and chief long term financial decision makers as well. This study can help to understand that how A C.F.O can be influenced by his intuition and personal biasness. However, the study had found that key long term financial decision makers are biased and hence they make decisions based on their intuitions and perceptions. With the help of this study we can calculate and the factor of emotional psychological aspect of human mind and make it more accurate and estimations about decisions. Therefore, it is important for key long term financial decision makers to estimate and study the circumstances and then make decisions. This is the way that the financial decisions will be rationalized.

7. Limitations and future research

Our study is an observed exploration which is conducted in PSE listed firms of Pakistan. We choose a small sample because of time limitation that's why the result of our study cannot be implemented over whole population. Future research should be involved on other variables like overconfidence, risk perception, Confirmation bias, choice paralysis to evaluate the impact on financial decisions either it is long term or short term. We can also check the impact of these biases on the investor decision & investor can also be included in any future study to increase the scope of research.

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Information Asymmetries and Loan Pricing in the World of Financially Literate and Creditworthy Borrowers: Implications for Brunei's Financial Sector

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Background

One of the inefficiencies in bank lending is the mismatch between the borrowing rates lenders charge individual borrowers and the borrowing rates borrowers *should* get if the lenders were able to price loans properly. This mismatch is caused by (i) lenders assuming consumer homogeneity – that all borrowers are about the same, behave the same way, and have the similar risk profiles, and/or (ii) lenders not knowing how to decide how much to charge their borrowers even if they are aware there is no consumer homogeneity. This inefficiency is caused by information asymmetries, which are particularly severe in many underdeveloped financial markets.

Information asymmetries refer to the asymmetric distribution of material information which could be influential in decision-making by both parties to the loan agreement (Laiboni, 2012)**.** This situation takes place when the lender has little or no knowledge of a customer's borrowing abilities while the customer is fully aware of their own ability to repay and of their future prospects. Alternatively, the borrower knows little about the loan they are applying for while the lender knows very well what taking the loan entails. Though theoretically, a lender can seek further information, in practice seeking additional information may be costly or the lender may have limited capacity to do so. This would be particularly true when all banks operate in the same way, remain in equilibrium where none is seeking advantage by improving the quality of its loan origination process.

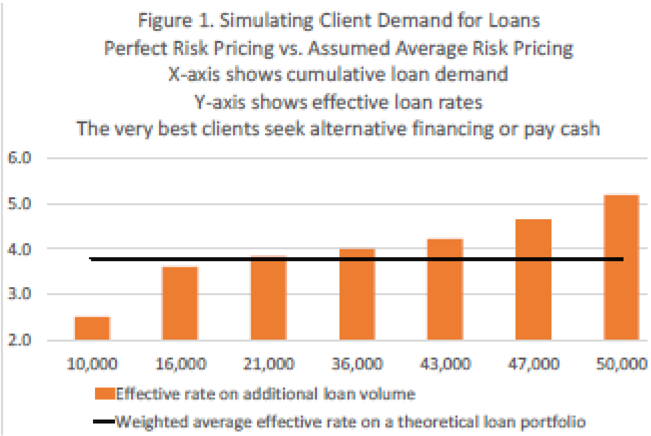
When applying for a loan, a borrower is only concerned with getting the lowest and most competitive rate possible. However, because of the lack of information and transparency, borrowers could be unaware of what rate of interest is right for them. At the same time, lenders too may not necessarily know what the appropriate rate they should charge individual borrowers because they may lack the information about individual risks. To compensate for the lack of information, the lender might try to estimate an average rate and then add a premium to offset the risk of uncertainty. This means that the riskiest individuals (who tend to value loans most highly and are willing to pay more) effectively price out some of the less risky individuals (who are not willing to pay as much). This causes the good borrowers to stop borrowing from such a lender, while the bad borrowers borrow because the loan cost under prices their risk. As a result, lenders end up with loan portfolios comprising almost exclusively of loans with poor credit risks.

The inability of the lender to charge appropriate rates is the result of their inability to price risks. To assess and price risk, the lender requires their borrowers' risk profiles, such as detailed information about the borrower's financial situation and behavior that can come from past performance contained in the borrower's credit records A good, low-risk borrower is one who makes the lender confident that they will repay future debts as agreed, while a bad (risky) borrower is one who the lender may be wary of due to a history of missing payments or defaulting.

However, one may ask, how does one differentiate and identify between "good" and "bad" borrowers? One of the most popular ways of doing this is by using "credit scores". A credit score is a statistical number that depicts a person's creditworthiness. Lenders use a credit score to evaluate the probability that a person repays his or her debts. A credit score is a three-digit number ranging from 300 to 850, with 850 as the highest score that a borrower can achieve. The higher the score, the more financially trustworthy a person is considered to be. Lenders use credit scoring in risk-based pricing, in which the terms of a loan, including the interest rate, offered to borrowers are based on the probability of repayment. In general, the better a person's credit score, the better the rate offered to the individual by the financial institution. The Fair Isaac Corporation's credit scoring system, known as a FICO score, is the most widely used credit scoring system in the financial industry.

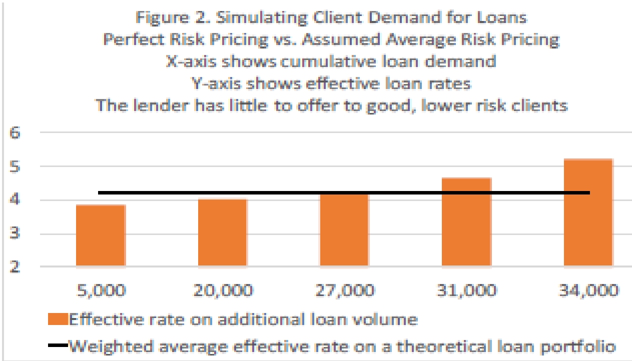
In an environment of perfect information, lenders can perfectly assess and price risk. They have access to complete and up-to-date information on borrowers' past debt service performance and contemporaneous abilities to repay their loans and borrowers have complete knowledge of loan terms offered by lenders. The lenders would know which of their customers are creditworthy or not, and borrowers know what rate they should be getting, hence the rates can be negotiated and weighted upon the preferences of both. Figure 1 below shows a simulation of the demand for loans in such a perfect information and pricing market.

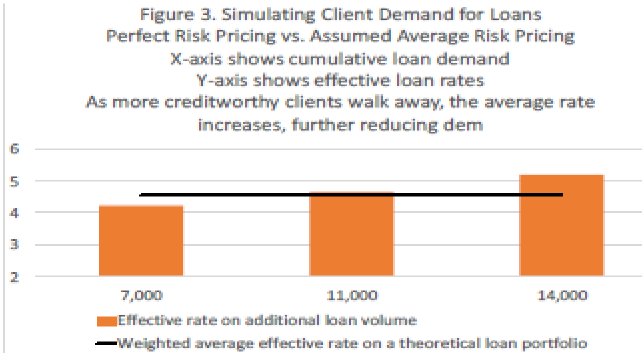
In Figure 1, borrowers on the far left of the chart are those with the highest credit scores. Lenders can offer them the best loan terms, the lowest interest rates available, which in this case is 2.5%. Meanwhile on the other end of the spectrum are borrowers who are least creditworthy and should be charged more than 5.0% to compensate the lender for the risk. However, in the absence of detailed information about each borrower or weak lender capabilities to use such information properly, lenders are likely to price loans by trying to estimate a weighted average rate that would ensure appropriate return on the lender's capital and cover all expenses of the lender (represented by the straight line in Figure 1).

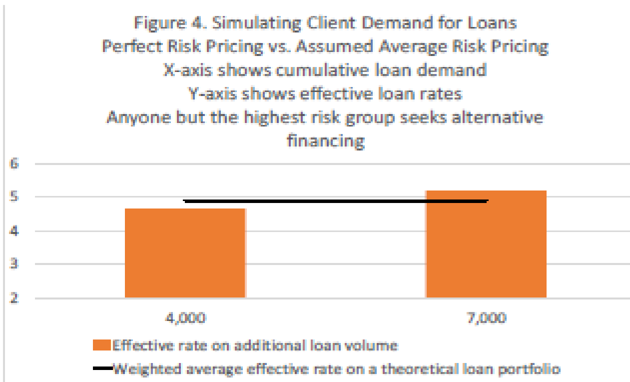


The weighted average pricing may seem to benefit borrowers of the mid- to highest credit risk while penalize borrowers with excellent credit risk. Average pricing thus seem to work in favor of "bad borrowers" at the expense of "good borrowers." In fact, populist policymakers may cheer such outcome because it would imply that borrowers with poor risk profiles, often poorer members of the society, are subsidized by the borrowers with staller credit, individuals who may come from the more affluent economic strata. However, this conclusion can hardly be supported, theoretically and, quite likely, empirically.

In reality, lower risk borrowers are likely to limit their borrowing from lenders in this particular market. They may move to a different market in search of more competitive rates, pay cash for the purchase or refrain from the purchase altogether. As the best clients walk away, the average risk in the pool of the remaining borrowers deteriorates and the breakeven weighted average effective rate increases, as shown in Figures 2-5. As the best borrowers – borrowers with the lowest credit risk seek alternative financing, the lender must recalculate its breakeven weighted average rate. This results in an increase in the weighted average lending rate. However, the higher rate discourages those with relatively better credit scores, thus further worsening the average risk profile faced by the lender.







What these simulations show is that by treating customers in a homogenous way, the bank (lender) prices out many customers. The process turns into a vicious cycle of continuously raising breakeven interest rates that alienate an ever larger share of customers with better risk profiles than the riskiest group. The borrower base of a lender with such risk pricing strategy will asymptotically converge to the riskiest group.

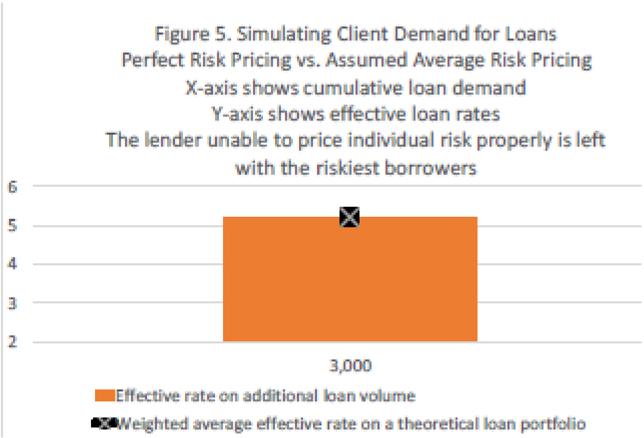


Figure 5. Simulating Client Demand for Loans
Perfect Risk Pricing vs. Assumed Average Risk Pricing
X-axis shows cumulative loan demand
Y-axis shows effective loan rates
The lender unable to price individual risk properly is left with the riskiest borrowers

Implications for Bank Activity, Revenues, and Profits

Now that we have seen the detrimental effects of information asymmetries and misguided bankers' believes about the financial awareness of their actual and potential client base, I turn to discuss some possible remedies.

- Introduce the presence of privately truly operated credit rating and scoring agencies in Brunei. In developed financial systems, any firm or individual wishing to borrow can typically rely on a number of independent credit rating agencies to provide high quality date on their creditworthiness. For example, in the U.S. three large firms dominate the business: Experian, Equifax, and TransUnion. As discussed earlier, credit information and rating firms produce credit reports of borrowers containing the borrowers' strength of repayment ability as shown by their credit scores. Judging by the credit score, a lender is able to approximate the probability of default of any single borrower and charge a rate of interest which is proportionate to the innate risk of a borrower. This results in more accurate pricing for borrowers. The example in the table below shows the differentiated loan costs that vary by the different FICO credit score in the US mortgage market.

If your FICO® score is...	Your interest rate is...	And your monthly payment will be...
760 - 850	3.61%	$983
700 - 759	3.83%	$1,010
680 - 699	4.01%	$1,032
660 - 679	4.22%	$1,059
640 - 659	4.65%	$1,114
620 - 639	5.2%	$1,186

National interest rates, updated daily

Source: myFICO.com (2017)

Hence, in markets deprived of such information and pricing ability, measures should be taken to open up private domestic credit rating agencies or to attract larger foreign credit rating firms into the local market. Ideally, to avoid conflict of interest, credit rating agencies should be run by the private sector as independent units. A Bankers' Association could set up a credit agency too, however, such agency could restrict its services to member banks only, exclude other than banks users, including non-bank lenders or employers. Moreover, lenders should ensure that borrowers are aware of the importance of credit rating and periodically make credit information available to potential borrowers for review to ensure its reliability. Increasingly, lenders include credit score information on their monthly credit card and other statements.

- Banks should be encourage to share between them customer information, especially those of potentially risky customers. There is often a perception within the banking sector that considers customer information to be highly classified and sharing them would be a violation of their customers' privacy. There is a danger to this perception however, as an individual may become unable to repay a loan on a bad investment idea and get his or her property auctioned but then approaches a different bank and secures financing for the same bad project, probably using a different product.

- Improvements should be made on loan underwriting. In some banks, loan underwriters are basically data entry clerks. They simply key in information from an application form without paying due attention to material facts which could be evident right on the application form. Underwriting is the entry point of risk in any financial services firm and some risks could be avoided if this initial process could be carried out meticulously.

Additionally, other loan officers should know enough about their tasks and responsibilities to help customers make better informed decisions. As a loan officer, one has to assume that the borrower does not know anything and everything about taking loans, and it is the duty of the officer to properly communicate and inform the borrower of the specifications of taking a particular loan, so that they are able to make better-informed decisions. Responsible behavior on the part of the originators will improve the performance of the lender by minimizing the likelihood of non-performing loans (NPLs) and default risk, which ultimately improves the efficiency of the lender. This issue may also relate to poor management; senior management should know very well what qualifications and skills are necessary for the credit originators they recruit.

- Increase competition in the financial sector. The argument for competition in bank lending typically talks about how encouraging entry of new banks leads to lower average lending rates as banks compete with each other in their bid to offer the most attractive rates possible to the limited pool of clients.

- Encourage proper disclosure of all loan cost components and allow customers to negotiate the costs of said components. The simplest way to do so would be to require all banks to provide prospective borrowers with a Truth-in-Lending disclosure form with the effective annual interest rate, inclusive of all loan cost and calculated using

Areas for Further Research

In this paper I focused on the theoretical implications for the loans market of lending standards that average risk of different borrowers and price loans uniformly. Further research is needed to estimate the foregone business activity in the lending markets due to this phenomenon as well as the broader implications of such inefficiencies in the loans markets for the entire Bruneian economy. Some of the broader impact will be due to loans never issued and the related business opportunities that never materialize. However, the research should not forget about the economic costs and social damage that resulted from loans that were granted only because the borrowers were allowed to borrow at subsidized rates, faced effective loan rates that underpriced their individual risk profiles. The economic and social costs due to the mispricing and misallocation of lending could be significant.

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A Hidden Markov Model Approach to Business Cycle Synchronization in the EU Countries on the Basis of Official Statistics and Survey Data

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Summary: This paper aims to identify turning points in the economic growth paths of the European Union countries on the basis of the Hidden Markov Models. These turning points are then introduced as structural breaks in the β-convergence model. Such an approach combines the analysis of cyclical and income-level convergence. Quarterly GDP time series for the whole EU28 group has two turning points (in 2008 and 2013). The hypothesis about the β-convergence was successfully verified, but the β-convergence process had a different pace between the turning points, being the slowest one in the 2008-2012 subperiod, i.e. during the global crisis.

Keywords: catching-up; convergence; hidden Markov model; European Union; Viterbi path

1. Introduction

β-convergence generally means that poor economies grow faster than rich ones. In empirical studies, there are various ways of testing β-convergence. Empirical evidence is also mixed, mainly in terms of the pace of the catching-up process and the stability over time[1].

The goal of this paper is to identify turning points in the economic growth paths of the European Union (EU) countries on the basis of the Hidden Markov Models and to analyze the time stability of the β-convergence based on the model with structural breaks (turning points).

In this paper the new approach in identifying turning points is explored. Hidden Markov Models (HMM) and Viterbi path both give quite accurate turning points based on the macroeconomic time series data. Turning points found on the basis of the HMM algorithm are then implemented as structural breaks in the β-convergence regression equation. Verification of the β-convergence model is done by the estimation of the regression equation parameters, where the dependent variable is the growth rate of real GDP per capita at PPP.

The empirical analysis carried out in the paper covers the 28 EU countries and the 1996-2016 period. Turning points are identified on the basis of annual and quarterly GDP statistics for different EU member states, supplemented by monthly economic sentiment indicators based on survey data. β-convergence model has been estimated for the whole period as well as for subperiods determined by the turning points given as a result of the HMM procedure.

This paper is organized as follows. After the introduction, the theoretical background of HMM and the Viterbi path are described. Also, the brief characteristics of the data are given. Section 3 is devoted to the identification of turning points, whereas in section 4 the analysis of β-convergence is presented. The last section concludes.

2. Methodology and data

The empirical analysis is composed of two steps. The first step involves the identification of turning points of the business cycles in the analyzed group of countries. Then, as the second step, the empirical verification of the β-convergence concept with structural breaks is tested. β-convergence means that less developed countries (with lower GDP per capita) grow faster than more developed ones. Neoclassical models of economic growth (Solow, 1956; Mankiw, Romer, Weil, 1992, Nonneman, Vanhoudt, 1996) confirm this type of convergence in a conditional way meaning that it takes place if all the economies tend to reach the same steady state. Since the steady-state, or long-run equilibrium, need not be the same for the real economies, empirical verification involves the regression equation which includes numerous economic growth determinants.

In this study, the time stability of the β-convergence hypothesis is tested. It means that the convergence hypothesis with structural breaks is verified. Structural breaks in the β-convergence model are turning points identified on the basis of the procedure combining hidden Markov model, Viterbi path, and Monte Carlo simulations.

The concept of identification of turning points is based mainly on the Hidden Markov models, also known by the name of Markov-switching model, which were being under

[1] A wide review of empirical studies is given in: Matkowski, Próchniak, Rapacki, 2016b.

study over the years (see e.g. Hamilton, 1994; Koskinen, Oeller, 2004). HMM can be treated as a generalization of the classical Markov models, where to the visible sequence of observations, the unobservable path of states is added. Using the Baum-Welch algorithm, model parameters are estimated, that is transition probabilities and the parameters of the probability distribution related to each unobservable state. Calculating the probabilities doesn't end the procedure because it still remains to establish the path of states. There are few ways to achieve this goal. One of them is a Viterbi algorithm, which seems to be particularly useful in macroeconomics. Use of the Viterbi path together with a Baum-Welch algorithm to get the globally optimal solution depends on the number of factors (Bernardelli, 2013). To get more reliable results, computations are performed repeatedly with the same set of data and different initial values. This approach is known as Monte Carlo simulations.

The identification of turning points is just a first stage of the verification of the β-convergence. To get the results needed to the second stage, the two-state HMM was used. Using more states is questionable, due to the length of the input time series. Some of the assumptions made during the calculation:

- state 1 is associated with the periods of relatively good conditions and state 0 is associated with a worse situation,
- only normal HMM was considered, which means that the observable component (economic time series being under the analysis) must satisfy the conditions
$$Y_n|_{X_n=0} \sim N(\mu_0, \sigma_0) \quad \text{and } Y_n|_{X_n=1} \sim N(\mu_1, \sigma_1), \tag{1}$$
- $\mu_0 < \mu_1$ meaning that state 1 is associated with a greater mean value,
- three criteria were taken into account to choose the best model for each time series: Akaike's information criterion (AIC), Bayesian information criterion (BIC) and the log likelihood value,
- the initial values for the Baum-Welch algorithm were chosen randomly with the use of independent and identically distributed draws from the univariate distribution,
- the number of draws used for model parameters estimation of the time series being under study was set to 1000.

All the computations, resulting in the two-state HMM and the Viterbi paths, proved to be stable. Identified turning points were used in the next stages of the research.

Verification of the β-convergence model is based on the regression equation where the dependent variable is the growth rate of real GDP per capita at PPP while the set of explanatory variables includes both the initial log GDP per capita level as well as the other variables that are control variables and are treated as economic growth determinants. The typical Barro regression (Barro, Sala-i-Martin, 2003) is used as in most cases when the β convergence is assumed. Since we consider the set of EU countries observed over time, panel data dynamic Blundell and Bond estimator is used. We allow for endogeneity of all the regressors as in most cases in macroeconomic research: this is because the considered explanatory variables are most likely to depend on the economic situation, which in turn means they are likely to be connected with the dependent variable via a two-way relation. However, two remarks need to be made. Firstly, in virtually each article devoted to the issue of GDP growth, the set of GDP growth factors used as regressors is different. This is due to subjectivity in this respect. In order to control for it, we apply Bayesian model averaging over the attained results, which can be viewed as pooling over all the loglinear growth models that could be constructed with the presumed set of potential regressors (for details, see for example: Próchniak, Witkowski, 2013, 2016). Secondly, the dataset used in this research covers the period of the big financial crisis and in consequence, there is a serious risk of loss of stability of the considered regression. We thus allow for structural breaks at turning points of the GDP series. We allow for all the coefficients to change at the time of the turning points.

To identify turning points, the following time series were collected: annual GDP growth rates, quarterly GDP growth rates (compared with the analogous quarter of the previous year to avoid seasonal fluctuations), and monthly economic sentiment indicators from survey data for all the 28 countries and the 1996-2016 period (in the case of missing data the time period is shorter). The first two time series are taken from official statistics and show changes in the fluctuations of real output. Variables on the annual basis will be used in the estimation of the β-convergence model. However, when identifying turning points, annual time series may be too short. That is why quarterly and monthly variables are also used. It is also the robustness test of the HMM procedure.

GDP time series are not available on a monthly basis. In the studies on business cycles, the variables based on survey data are often employed to find turning points (peaks and troughs). Such variables have two advantages. First, they are available on a monthly basis, so it is possible to identify turning points more precisely. Second, they are available without a huge delay. So they allow to include in the analysis the last periods as well (indeed, economic sentiment indicator covers the period till March 2017). Earlier studies on this subject (e.g. Matkowski, Próchniak, 2008) show that the variables based on survey data are good substitutes of the official statistics in the business cycle research.

In the case of the β-convergence model, the following variables are included in the set of control factors:

- GDP per capita at PPP from the previous year (constant 2011 international $) [loggdp_t-1];
- Current account balance (% of GDP) [cab];
- General government balance (% of GDP) [gov_bal];
- General government total expenditure (% of GDP) [gov_exp];
- Inflation, average consumer prices (%) [inf];
- Total investment (% of GDP) [inv];
- Volume of exports of goods and services (% change) [exp].
-

The regression equation is estimated on the basis of annual panel data. Hence, the set of control variables includes mainly demand-side economic growth determinants which influence the dynamics of output in a given year. There are no variables which affect the long-run rate of economic growth, such as human capital indicators.

The analysis is based on the time series taken from the International Monetary Fund, World Bank, and Eurostat databases.

4. Identification of turning points

The first step of the analysis is the identification of turning points of the EU countries' business cycles. It turns out that the annual GDP time series are generally too short to find reliable peaks and troughs in the process of economic growth on the basis of the HMM procedure. Better results in terms of economic and mathematical validity are obtained for quarterly GDP statistics and monthly economic sentiment indicators.

Table 1 shows turning points identified with the HMM algorithm for quarterly GDP growth rates and monthly economic sentiment indicators from survey data for the individual 28 EU countries.

Table 1. Turning points identified with the use of the HMM procedure

Country	**Turning points identified on the basis of:**	
	quarterly GDP growth rates	**monthly economic sentiment indicators from survey data**
Western Europe (EU15)		
Austria	IV 2008; I 2010	10.1996; 05.2008; 04.2010
Belgium	IV 2008; IV 2009; I 2012; IV 2013	08.2001; 11.2003; 09.2008; 03.2010; 09.2011; 11.2013
Denmark	IV 2008; I 2010	07.1998; 02.2000; 02.2008; 12.2009
Finland	III 2008; II 2010; IV 2011	03.2001; 01.2004; 06.2008; 02.2010
France	I 2008; I 2010; IV 2011	08.1997; 07.2008; 08.2010; 08.2011; 10.2015
Germany	IV 2008; II 2011	06.2001; 02.2006; 07.2008; 04.2010
Greece	II 2008; III 2013	10.2008; 03.2014; 04.2015
Ireland	III 2007; III 2013; I 2016	n.a.
Italy	IV 2008; I 2010; IV 2011; I 2014	07.2008; 12.2009; 08.2011; 11.2013
Luxembourg	III 2008; IV 2009	04.1997; 04.2001; 02.2004; 06.2008; 03.2016
Netherlands	III 2001; III 2005; III 2008	09.2008; 10.2014
Portugal	IV 2002; IV 2003; IV 2008; I 2010; I 2011; IV 2013	10.2001; 09.2006; 06.2008; 05.2014
Spain	III 2008; I 2015	10.2007; 03.2014
Sweden	I 2008; IV 2009; IV 2011	04.2001; 05.2004; 06.2008; 12.2009; 09.2011; 08.2013
UK	III 2008; I 2010	02.2008; 07.2013
Central and Eastern Europe (including Cyprus and Malta)		
Bulgaria	I 2002; IV 2008	07.1998; 04.2001; 12.2008; 01.2015
Croatia	III 2008; III 2015	11.2008; 03.2014
Cyprus	IV 2008; III 2015	12.2008; 12.2014
Czech Rep.	IV 2008; II 2010; III 2011; I 2014	02.2000; 10.2008; 09.2014
Estonia	I 2008; III 2010	10.1998; 07.2000; 08.2007; 04.2010
Hungary	I 2007; III 2013	06.2006; 07.2010; 05.2011; 10.2013
Latvia	I 2008; III 2010	04.2008; 11.2010
Lithuania	III 1999; I 2000; IV 2008; II 2010	09.2008; 09.2010

Malta	I 2009; IV 2009	06.2008; 05.2010
Poland	III 2000; II 2003; III 2008	01.1998; 06.2006; 11.2008
Romania	I 1997; II 2000; I 2009; III 2013	04.1997; 04.2000; 11.2008; 08.2014
Slovakia	I 1999; I 2000; IV 2008; I 2010	02.1999; 06.2000; 10.2008; 06.2010
Slovenia	IV 2008; IV 2013	07.1999; 10.2008; 05.2014

Source: own calculations

Data in Table 1 are quite mixed both between the countries as well as between the two variables (GDP time series and economic sentiment indicators). However, some common tendencies can be found.

Firstly, the majority of turning points take place in the second half of the 2000s or the first half of the 2010s. This outcome is not a coincidence. It is undoubtfully caused by the global crisis and the crisis in the euro area. Big turmoil in the rates of economic growth during the crisis implied that there are very few turning points (especially for the Western European countries) in the first years of the analyzed period, including the 1990s decade. Turning points in the 1990s were identified only for Austria, Denmark, France and Luxembourg (on the basis of monthly data) in the case of old EU member states and for Bulgaria, Estonia, Poland, Slovenia (based on monthly data), Lithuania (quarterly data), and Romania and Slovakia (both quarterly and monthly data) in the case of new EU member states.

Second, the lack of turning points in the beginning of the analyzed period concerns mainly Western European countries (including Malta and Cyprus). These countries did not suffer the transformation recession and their economic growth paths during the 1990s were rather stable over time (instability was not so large as that caused by the global crisis). However, in the case of new EU member states from Central and Eastern Europe, turning points often appeared during the 1990s. For these countries, the role of ‘integration anchor’ was very important and affected significantly the dynamics of output in a sense that fluctuations in economic activity in the early years of the analyzed period were quite large as compared with those observed during the global crisis.

Thirdly, for both groups of countries, we can observe a turning point just prior to the global crisis (approximately in 2008). This holds for the majority of countries. Many countries also notice another turning point after the end of the global crisis.

The above outcomes show the necessity of introducing structural breaks into the convergence model.

4. Analysis of β-convergence

The regression equation with structural breaks requires the introduction of the same turning points for the whole group of countries. Calculating averages on the basis of data in Table 1 is not a proper method. To find such structural breaks, we identify turning points on the quarterly GDP growth rates for the whole EU28 group (weighted average). The additional restriction was imposed in the HMM procedure to avoid numerous structural breaks which would make it impossible to estimate properly the regression equation (there must be several observations in each subperiod between the two consecutive structural breaks). As the result, the following turning points were identified for the quarterly GDP growth rates for the EU28 group (see Figure 1):

- III 2008 – a peak;
- III 2013 – a trough.

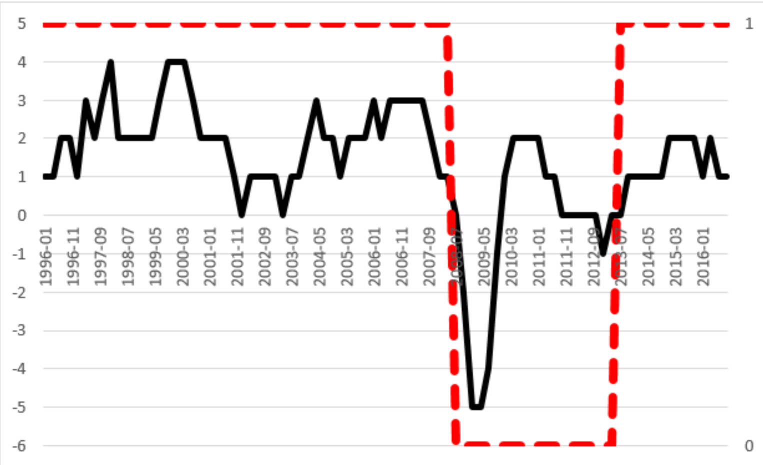

Figure 1. Turning points based on quarterly GDP growth rates for the EU28 group
Source: own calculations.

This result is in line with the outcomes for the individual countries described in Table 1. The first turning point was observed just prior the crisis while the second one – after the global crisis. Hence, the regression equation will include two structural breaks (in 2008 and 2013).

β-convergence model has been estimated for the whole period (1996-2016) as well as for the three shorter subperiods (1996-2007, 2008-2012, and 2013-2016). Such an approach makes it possible to assess how the pace of convergence changed over time between the structural breaks.

Table 2 shows the results of model estimation for the whole period. The adopted methodology requires that the level of GDP per capita in the current year, instead of the growth rate, be the explained variable. It means that the convergence is confirmed if the coefficient standing on GDP per capita from the previous period is less than 1.

Table 2. Regression estimation of the β-convergence model for the whole 1996-2016 period, EU28 countries.

Regressor	Estimate	Standard error	*p*-value
loggdp_t-1	0.97052	0.00348	0.000
cab	0.00065	0.00023	0.011
gov_bal	0.00365	0.00032	0.000
gov_exp	-0.00216	0.00025	0.001
inf	-0.00007	0.00002	0.028
inv	0.00387	0.00027	0.000
exp	0.00277	0.00010	0.000

Source: own calculations

The results shown in Table 2 confirm the existence of conditional β-convergence. The coefficient for initial income level equals 0.97052, that is less than 1. Moreover, it is statistically significant (*p*-value = 0.000). This outcome indicates that countries with lower GDP per capita grew on average faster than more developed ones, *ceteris paribus*. The convergence is conditional on the growth factors included as the explanatory variables in the regression equation. These results are in line with the economic literature. There are many studies about the catching-up process in the enlarged European Union and the majority of them confirms the existence of convergence in the EU, although the pace and strength of this process are different[2].

The model estimated for the whole period is economically and statistically valid also as regards the other explanatory variables. All of them are statistically significant (at 5-percent significance level) while the sign of the estimated coefficient corresponds with the economic theory and the theoretical structural model. There is the strong positive impact of investments and exports on economic growth. Good fiscal stance (low budget deficit) is also conducive to the growth of output. The results show that inflation negatively affects the GDP dynamics. In the case of inflation, however, the true relationship may be nonlinear because both high inflation and deflation may hamper economic growth.

[2] For the most recent studies, see e.g.: Batóg, 2013; Grzelak, Kujaczyńska, 2013; Rapacki, Próchniak, 2014; Forgó, Jevčak, 2015; Matkowski, Próchniak, Rapacki, 2016b; Jóźwik, 2017.

To assess the pace of the catching-up process between the structural breaks, the analogous convergence model was estimated for three shorter subperiods. The results are given in Table 3.

Table 3. Regression estimation of the β-convergence model for three subperiods, EU28 countries

Regressor	Estimate	Standard error	*p*-value
1996-2007			
loggdp_t-1	0.98323	0.00332	0.000
cab	-0.00009	0.00027	0.000
gov_bal	0.00383	0.00047	0.000
gov_exp	-0.00244	0.00029	0.000
inf	-0.00007	0.00002	0.009
inv	0.00401	0.00031	0.000
exp	0.00126	0.00012	0.000
2008-2012			
loggdp_t-1	0.99666	0.01433	0.000
cab	-0.00055	0.00067	0.201
gov_bal	0.00231	0.00081	0.181
gov_exp	-0.00052	0.00084	0.317
inf	-0.00092	0.00118	0.129
inv	0.00605	0.00081	0.000
exp	0.00359	0.00018	0.000
2013-2016			
loggdp_t-1	0.98557	0.01078	0.000
cab	0.00477	0.00079	0.001
gov_bal	0.00409	0.00096	0.042
gov_exp	-0.00255	0.00041	0.002
inf	-0.00573	0.00109	0.000
inv	0.00372	0.00076	0.012
exp	0.00376	0.00031	0.000

Source: own calculations

The results presented in Table 3 confirm the economic and statistical validity of the conditional convergence equation. In most cases, the signs of the estimated coefficients are in line with the theoretical structural model; moreover, they are usually the same as in the equation estimated for the whole period. Regression coefficients are usually statistically significant at the 5-percent significance level (except a few variables for the 2008-2012 subperiod).

The models estimated for all the three subperiods confirm the existence of conditional β-convergence in each subperiod. The coefficient standing on initial income level is less than 1 and it is statistically significant. It means that the countries of the enlarged EU caught-up between the structural breaks.

The pace of the catching-up process was, however, different in various subperiods. To assess how the pace of convergence evolved over time, we calculate the values of the parameter β that measures the speed of convergence. We also evaluate half-lives (half-life is the time needed to reduce the gap towards the hypothetical steady-state by half)[3]. The results are given in Table 4.

Period	Coefficient on initial income in the transformed regression model	Coefficient on initial income in the untransformed regression model	Parameter β	Half-life (years)
1996-2016	0.97052	-0.02948	2.99%	23.2
1996-2007	0.98323	-0.01677	1.69%	41.0
2008-2012	0.99666	-0.00334	0.34%	206.9
2013-2016	0.98557	-0.01443	1.45%	47.7

Source: own calculations

Data in Table 4 indicate that the process of convergence was unstable overtime. The slowest catching-up process took place during the 2008-2012 subperiod, that is during the global economic and financial crisis. For this subperiod, the parameter β stood at 0.34% as compared with 1.69% in the 1996-2007 subperiod and 1.45% in the 2013-2016 subperiod. As we can see, the global crisis negatively affected the convergence tendencies in Europe. This outcome is in line with some other studies that indicated a deterioration in the process of convergence during the last years[4]. Since 2013, the catching-up process has accelerated again. If these tendencies are maintained, we can thus expect a further narrowing of the income gap between the more and less developed countries of the enlarged European Union.

Given these results, it is necessary to stress that convergence is not an automatic process. The countries may or may not converge. Everything depends on many factors, including the external and internal environment, economic policy, political situation etc. Hence, there is not guarantee that the catching-up process will be maintained in the future. Moreover, some divergence tendencies cannot be excluded.

The convergence process in Europe is not very rapid. The half-life for the whole period equals 23.2 years. It means that if the economic growth tendencies observed during 1996-2016 are maintained in the future, the countries of the enlarged EU will need almost 25 years to reduce by half their distance toward a hypothetical steady-state. These are similar estimates to those for the absolute convergence regression model without any additional control variables[5].

5. Conclusions

The analysis carried out in this paper yields the following findings:

- The HMM method makes it possible to identify turning points of the economic growth paths of the individual countries. When applied to the growth rates of GDP (on a quarterly basis) or economic sentiment indicators from survey data (on a monthly basis), the HMM algorithm identifies numerous turning points for the individual countries. There are many differences between the individual countries but some common tendencies (e.g. turning point prior to the global crisis) can also be found.

- For the quarterly GDP growth rates and the EU28 group as a whole, two turning points were identified: 3rd quarter of 2008 (a peak) and 3rd quarter of 2013 (a trough). These turning points were implemented as structural breaks in the β-convergence regression model.

- The catching-up process of the EU countries was not stable over time. The slowest convergence took place during the 2008-2012 subperiod, i.e. during the global crisis. In the two remaining subperiods (1996-2007 and 2013-2016) the convergence was faster.

- Estimated regression equations have good statistical and economic properties which increases the reliability of the results. The application of the Bayesian model averaging approach reduces the bias due to improper selection of the explanatory variables.

[3] The formulas according to which the parameters β and half-lives are calculated are given in: Próchniak, Witkowski, 2016.

[4] See e.g.: Mucha, 2012; Staňisić, 2012; Borsi, Metiu, 2013; Monfort, Cuestas, Ordóñez, 2013.

[5] Matkowski, Próchniak, Rapacki, 2016a.

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Dynamic Panel Analysis of Migration and Trade in Developed and Developing Economies

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***Abstract:* A remarkable increase in the size of the total international migration stock flow and net migration has renewed the discussion on the global effect of migration. Previous studies are uncertain whether migration and trade are substitutes or complements. Therefore, this paper is aimed to examine the relationship between migration and trade in developed and developing economies. This paper employed the dynamic panel data analysis to analyse the impact of migration on trade flows. Using a panel of five-year interval annual data from 93 developed and developing countries for the period of 1962 to 2012, this study finds that migration affects trade, export and import negatively. This result implies that trade and migration are substitutes. This finding rejects the hypothesis that there is a complementary relationship between trade and migration.**

***Keywords:* Trade; migration; dynamic panel data; generalized method of moments; trade policy**

Introduction

A remarkable increase in the size of the total international migration stock flow and net migration has renewed the discussion on the global effect of migration. The magnitude of migration stock and net migration has increased in the last few decades (see TABLE 1). In exploring the relationship between migration and trade, a natural question that arises is that do the migrants play any role in international trade between their home and host country? Major changes in the migration stock and net migration have made migration quite controversial for the developed and developing countries. A question which frequently turns up in current discussion about migration is that how does migration affect trade patterns? This study determines the effect of migration on trade in developed and developing countries. At the same time, this study also analyses an important question in international trade, i.e. whether the flow of labour encourages the flow of goods or the flow of labour discourages the flow of goods. This is an unresolved question in international trade literature and makes a tremendous case for an empirical work.

Research Background

The links between factor movements and trade are of increasing importance in a globalizing environment. Regarding labour mobility, an important issue is the possible relationship between migration and trade. There is no conclusive evidence on whether migration and trade are substitutes or complements. According to traditional trade theory, migration and trade are substitutes. However, modern trade theory and extensions of traditional models conclude that there is a complementary relationship.

Period	International Migrant Stock			Net Migration		
	Low Income Countries	Middle Income Countries	High Income Countries	Low Income Countries	Middle Income Countries	High Income Countries
1960	4,884,517	31,705,607	32,693,634	-510,960	-3,437,689	3,573,488
1965	5,528,972	30,574,586	36,703,393	-63,036	-4,161,220	3,635,870
1970	5,794,577	29,893,549	40,474,329	-1,271,457	-6,050,550	7,145,777
1975	5,550,330	29,519,472	45,586,981	-3,163,339	-4,701,793	7,928,492
1980	7,190,457	32,738,945	51,866,670	-5,714,429	-1,575,977	7,164,586
1985	6,428,041	37,326,317	59,079,404	- 3,088,354	-5,572,683	8,638,343
1990	8,533,974	66,383,640	75,701,471	749,912	-12,252,248	11,617,847
1995	9,287,911	62,272,628	87,292,724	- 2,112,809	-12,136,628	14,460,563
2000	7,732,730	62,063,172	100,942,762	-983,039	-17,641,955	18,497,281
2005	7,604,325	62,269,224	119,242,705	-2,543,110	-20,101,751	22,686,636
2010	7,572,319	67,618,253	144,237,465	-1,115,618	-14,265,047	15,359,563
2015	9,382,642	74,228,905	157,494,832	N/A	N/A	N/A

In the context of established international economic theory, it is well known that international trade of commodities is intertwined with mobility of factors of production, such as labour and capital. It follows that if factors of production can be moved internationally, then the need for commodity trade is eased. Therefore, trade of commodities and movements of factors of production can be substituted for each other. From here, the conclusion can be reached that factor mobility is a substitute for commodity trade.

Beginning from the Hecksher-Ohlin framework in trade theory, we come across Mundell's (1957) result that both trade and migration are substitutes to each other. Mundell operated along the same line of reasoning as Samuelson and explicitly stated that, under certain assumptions, the rise of trade barriers encourages factor movements, and on the other hand, limits on factor movements stimulates trade. He called it the commodity price equalization of factor movements. Trade is described through the different relative returns to production factors at home and abroad and any obstruction to trade allows for factor movements across the borders. So, from here, we can conclude that migration discourage trade.

According to specific factor model, with skilled and unskilled labour being the specific factors and capital as the mobile factor, migration of skilled labour from the unskilled labour abundant country releases resources to the unskilled labour intensive sector. This encourages unskilled labour abundant country to specialize in production and exports of the goods which require intensive use of unskilled labour. On the other hand, an increase in the availability of skilled labour in advanced countries would encourage production and exports in the skilled labour intensive sectors. The result creates a complementary relationship between migration and trade.

However, the previous conclusions do not explain the real world in which we observe that both international migration and international trade have increased over time. Thus, established theory of migration and trade may not be a reliable policy guide for creating migration and trade policy. In this study, we concentrate on determining the effect of migration on trade in developed and developing countries. Following Gould (1994), most authors suggest two mechanisms through which migration could stimulate trade, namely the networks and information flows effects and preferences and demand effects.

Literature Reviews

In the literature, we can get explanation of linkages between migration and trade in both directions. First, the impact of foreign trade on migration flows. Secondly, the impact of migration on foreign trade flows. In the empirical studies, the effect of migration on trade is more recognized compared to the other way around. According to Parsons (2005), there is "a robust and positive relationship between immigration and bilateral trade flows", but the effect of foreign trade on migration is relatively "indirect and not necessarily significant" (Morrison 1982, p. 7). Due to this reason, we try to determine the effect of migration on trade in developed and developing countries.

There are numerous effects as to why one supposes that migration of people from one country to another will affect the trade flows between the two countries. The main effects are networks and information flows, preferences and demand, factor supply, and other factors. Immigrant links to the home country incorporate knowledge of home-country markets, language, preferences, and business contacts. Immigrant links imply a beneficial human-capital-type externality that boosts trading prospects between the host and home countries.

Now, we look at some of the empirical studies which study the trade-migration nexus. Genc et al. (2012) conduct a meta-analysis on the distribution of immigration elasticities of imports and exports across 48 studies comprising 300 observations. The results show that immigration act as complement rather than as substitute for trade flows between host and origin countries, but the impact declines with growing number of migrants. On average, an increase in the number of immigrants by 10% can boost trade by about 1.5%.

Campaniello (2014) estimate a gravity model of bilateral migrations on bilateral exports from the poor countries of Mediterranean (South) to the rich countries of Europe over the period 1970-2000. Campaniello finds complementarity between exports and migrations from the South to the North. The study solves the potential endogeneity problem by using average trade tariffs and bilateral exchange rate volatility as instrumental variables for the endogenous variable 'trade'. From the OLS and 2SLS regression results, the study concludes that trade liberalization does not seem to be an effective policy to mitigate the migration flows in the short run. In other studies, which look at the differential impact of migration on exports and imports, Hatzigeorgiou and Lodefalk (2015) establish that increase in migrants enhances exports, but there is no noticeable effect on imports. Slaymaker (2015) investigate the causal relationship between migration and trade flows. They use a difference-in-differences estimation strategy. They find significant positive effects of increased migration on trade of differentiated import goods.

Tadesse and White (2013) use data on the migrant stocks of 43 African home countries that live in 110 host countries and on trade flows between these countries during 2005. They examine whether African immigrants exert positive effects on their home countries' trade with the typical host country. Estimates from Tobit regression models indicate a 1% increase in the number of African immigrants in a given host country increases that country's exports to and imports from the typical home country by 0.132% and 0.259% respectively.

Parsons (2012) examines the trade-migration nexus by using panel data over several decades. By accounting for unobserved bilateral factors, such as international bilateral ties in the country-pair fixed effects, the positive impact of migration on trade disappears. Between the relatively rich North and poor South, migrants from either region only affect exports from the North to the South since countries in the North export more differentiated products and greatest information barriers also exist between these regions.

Faustinoa and Peixotob (2013) test the relationship between immigration and bilateral trade of Portugal with the 27 European partners. The static and dynamic panel data analysis shows that the stock of immigrants has a positive effect on Portuguese exports, imports and bilateral intra-industry trade. In another study for Portugal, Faustino and Peixotob (2009) analyse immigration into Portugal and its effect on bilateral trade with 38 members. They find that a 10% increase in the immigrant stock will increase exports by 2.8%, imports by 2.66% and intra-industry trade by 1.87%.

In another study for Eastern Europe, Parsons (2005) establish that Eastern European immigrants exert a positive influence on both EU-15 imports and exports. The results predict that a 10% rise in Eastern European immigration will increase EU-15 imports from these countries by 1.4% and EU-15 exports by 1.2%. Iranzo and Peri (2009) extend a two-country model of inter- and intra-industry trade to bring realism by introducing technological and skill differences and by allowing international labour mobility. The results of calibration show that lower barriers to migration result in significant migration of skilled workers from Eastern European countries which would benefit both the migrants as well as the workers remaining in Eastern Europe.

Bratti et al. (2014) investigate the relationship between immigration and trade flows using Italian panel data. They find a positive association between immigrants' stocks and both export and import flows. Tegenrot (2016) examine the pro-trade effects of immigration on Swedish exports by using Pseudo Poisson maximum likelihood estimation. The results show a positive link such that a 10% increase in immigration results in 1.4% to 3.7% increase in exports.

In studies for Asia, Tam and Reynolds (2014) use panel data on migrants from three neighbouring countries including Cambodia, Lao PDR and Myanmar across industries and sectors. The results confirm a positive effect of migrant stock on exports. The effects are stronger in agriculture sector and low-tech manufacturing industries in which migrants have greatest presence. Ullah and Islam (2016) use gravity model to assess relationship between export of goods and labour from Bangladesh to 20 major trade partners. The results show that these two flows act as substitutes which imply that higher growth of one will reduce the growth of the other in the same location. Akbari and Hyder (2011) use gravity model and their estimates indicate that the annual increase in the number of Pakistani emigrants in OECD countries accounts for a quarter of the annual growth in Pakistani net exports to the English speaking countries during 1990-2003. Pakistan's trade deficit with non-English speaking countries would have been at least 46 per cent higher had there been no increase in its expatriate population in those countries.

In the literature for Americas and Europe, we find a rich empirical literature. Konecny (2009) examine the bilateral trade contribution of expatriates from the OECD countries living in less developed economies. The empirical evidence predicts that a 10% increase in the size of expatriate community leads to a 0.6% increase in its OECD trade partner's imports against a 2.5% impact of immigrants in OECD countries on average. In countries with weak institutions, a 10% increase in expatriate stock would lead to a 1.7% increase in imports into their country of origin. Aguiar et al. (2007) use gravity model to test the effect of bilateral trade on a subset of international permanent legal migration from 175 countries into the United States. The results indicate that bilateral trade flows do not significantly explain migration flows, whereas, the traditional determinants are better at explaining them.

Jansen and Piermartini (2009) analyse empirically whether temporary migrants have an impact on bilateral trade just like the permanent migrants. Both types of migrants differ in terms of integration whereby, the temporary migrants are expected to be less integrated in the host country as compared to permanent migrants. Empirical results indicate that a 10% increase in the number of temporary migrants from a country increases US exports to that country by 1% to 2.3% and US imports from that country by 1% to 3.5%. Temporary migrants have a stronger impact than permanent migrants on both exports and imports and temporary migrants have a more important role in reducing transaction costs for differentiated goods in particular.

Head and Ries (1998) use augmented gravity model to test whether immigrants enhance trade with their country of origin. They find that a 10 per cent increase in immigrants is associated with a 1 per cent increase in Canadian exports to the immigrant' home country and a 3 per cent increase in imports. Mundra (2005) examines the effect of immigration on the US trade flows by using a panel data set to estimate a dynamic fixed-effect model. In the model specification, the immigrant stock enters the model non-parametrically; whereas, other variables enter the model log-linearly. The results show that the immigration effect on imports is positive for both finished and intermediate goods, but the effect on exports is positive only for finished goods.

Bacarreza and Ehrlich (2006) test the impact of migration on foreign trade in Bolivia over the period 1990–2003. They use gravity model and control for the economic size and geographical location of trade partners and for changes in terms of trade. The results show positive and relatively similar impact of both immigration and emigration on foreign trade. Hollifield and Osang (2005) examine the influence of NAFTA on trade as well as migration flows between Mexico, Canada, and the United States. The results show that there is little evidence for a positive or negative relationship between the change in trade flows and the change in legal migration patterns both before and after the establishment of NAFTA.

The Model

In this study, we adopt the Insel and Cakmak (2010) model to determine the effect of migration on trade. The model specification that is employed to investigate the relationship between migration and trade is:

$$T = f\left(\left(\frac{Y}{POP}\right), MIG\right), \qquad (1)$$

Where T is total trade, $\left(\frac{Y}{POP}\right)$ is the real GDP per capita, and MIG is net migration. According to trade theory, real exchange rate (RER) index affects the trade performance of a country depending on the fixed or flexible regimes and also the volatility of RER. Thus, the basic trade equation above is extended to incorporate real exchange rate as:

$$T = f\left(\left(\frac{Y}{POP}\right), MIG, RER\right), \qquad (2)$$

where T is total trade, $\left(\frac{Y}{POP}\right)$ is the real GDP per capita, MIG is net migration, and RER is real exchange rate. This equation provides the basis for the empirical models that are estimated in this study.

This study aims to determine the effect of migration on trade in developed and developing countries using annual data for the period starting from 1962 to 2012 (five-year intervals). In this study, we adopt the Gould (1994) study to determine the effect of labour migration on trade by using networks and information flow effects, and preferences and demand effects. The empirical analysis is based on the assumption that "developed and developing countries migrants have enhanced their trade through the networks and information flows and the preferences and demand effects".

For the networks and information flow effects, migrants are expected to stimulate trade by lowering transaction costs. Individual immigrants' business connections or personal contacts with the home country will lower transaction cost, but it could also be the case that transaction costs are lowered because immigrants bring to host country additional knowledge about foreign markets and about different social institutions. This second effect will be higher the more home and host countries are different and the less information is available on migrants' home countries. Transaction cost effects are expected to encourage both exports and imports. This channel expects a direct increase in both export and import flows between the host and home countries throughout due to decrease in transactions costs connected with obtaining foreign market information and creating trade relationships.

Furthermore, for the preferences and demand effects, immigrants have a tendency to bring with them a preference for home-country products. They are assumed to demand certain goods produced in their home countries, or similar to those produced in their home countries. This channel implies that immigrants' consumption of their home-country products will result in a direct increase in the host country's imports of these goods, but not exports from the host country in similar commodity groups.

We estimate three sets of models. For the scope of the analysis, we considered trade flows as a whole and then exports and imports separately. First, we estimate the impact of migration on total trade (equation 3), second, the impact of migration on exports (equation 4), and lastly, the impact of migration on imports (equation 5). More specifically, this study specifies the following dynamic linear equation for trade, exports, and imports:

$$\left(\frac{T}{Y}\right)_{it} = \alpha + \emptyset\left(\frac{T}{Y}\right)_{it-1} + \beta_1\left(\frac{Y}{POP}\right)_{it} + \beta_2 MIG_{it} + \beta_3 RER_{it} + \varepsilon_{it}, \qquad (3)$$

$$\left(\frac{X}{Y}\right)_{it} = \alpha + \emptyset\left(\frac{X}{Y}\right)_{it-1} + \beta_1\left(\frac{Y}{POP}\right)_{it} + \beta_2 MIG_{it} + \beta_3 RER_{it} + \varepsilon_{it}, \qquad (4)$$

$$\left(\frac{M}{Y}\right)_{it} = \alpha + \emptyset\left(\frac{M}{Y}\right)_{it-1} + \beta_1\left(\frac{Y}{POP}\right)_{it} + \beta_2 MIG_{it} + \beta_3 RER_{it} + \varepsilon_{it}, \qquad (5)$$

Where ε denotes the residual, i and t denote identifiers for countries and years, respectively. The definition for each variable are explained in later section. A lagged dependent variable is included to allow for the partial adjustment of trade, export, and import to its long run equilibrium value.

Data and Sources

To examine the effects of migration on trade, we use the data set which consists of panel observations from 93 developed and developing countries for the period 1962 to 2012. Trade, export and import data are in share of GDP have been obtained from the World Bank's World Development Indicators (WDI) 2015 database.

In this study, there are three dependent variables of interest namely, net migration (*MIG*), real per capita GDP, $\left(\frac{Y}{POP}\right)$, and real exchange rate (*RER*). Data on net migration (*MIG*) was taken from World Bank's World Development Indicators (WDI) 2015 database. It is measured by the number of persons. This data is available in 5-year increments for the period 1962 to 2012. The data on real per capita GDP has been measured by the constant 2010 US dollars and obtained from World Bank's World Development Indicators (WDI) 2015 database. The Real Exchange Rate series has been defined as the consumer price index (CPI) based Real Effective Exchange Rate index and is sourced from International Financial Statistics (IFS), published by the International Monetary Fund (IMF). TABLE 2 provides the summary of data sources.

TABLE 2 Sources of Migration and Trade Data

Variable	Source	Unit of Measurement
$\left(\frac{T}{Y}\right)$	World Development Indicators	Share of GDP
$\left(\frac{X}{Y}\right)$	World Development Indicators	Share of GDP
$\left(\frac{M}{Y}\right)$	World Development Indicators	Share of GDP
MIG	World Development Indicators	Number of persons
$\left(\frac{Y}{POP}\right)$	World Development Indicators	real price (2010=100)
RER	International Monetary Fund	Index number

Variable Definitions

The definition of each variable is as follows.

i. Total Trade
This is the total trade at time *t*. We define it as the sum of exports and imports of goods and services measured as a share of GDP. This definition was used in Bettin and Lo Turco (2012), Insel et al. (2010), and Insel and Cakmak (2010).

ii. Exports
This is exports at time *t*. Exports of goods and services represent the value of all goods and other market services provided to the rest of the world. It is measured as a share of GDP. This definition was used in Gould (1994), Bryant et al. (2004), Mundra (2005), Ehrlich and Bacarreza (2006), and Insel and Cakmak (2010).

iii. Imports
This is imports at time *t*. Imports of goods and services represent the value of all goods and other market services received from the rest of the world. It is measured as a share of GDP. This definition was used in Gould (1994), Bryant et al. (2004), Mundra (2005), Ehrlich and Bacarreza (2006), and Insel and Cakmak (2010).

iv. Net Migration
We define *MIG* as the net total of migrants during the period, including both citizens and noncitizens at time *t*. The same definition was used in Bryant et al. (2004) and Bettin and Lo Turco (2012).

v. Real GDP Per Capita
We define it as the per capita real GDP in US$ at time *t*. This definition was used in Bryant et al. (2004), Ehrlich and Bacarreza (2006), and Insel and Cakmak (2010).

vi. Real Exchange Rate
RER is the CPI based Real Effective Exchange Rate index at time *t*. The same definition was used in Bettin and Lo Turco (2012), Insel et al. (2010), and Insel and Cakmak (2010).

Results and Discussion

The data are analysed using the generalized method of moments (GMM). GMM is able to overcome endogeneity problem arises form dynamic form of the models. The results are summarized in TABLE 3 for trade model, TABLE 4 for export model and TABLE 5 for import model, respectively. As comparison, we present both difference and system GMM results with and without time dummies. The results show that the system GMM produces better results and corrects biases in the difference GMM by applying additional level instruments in the model. The additional instruments are valid as indicated by the Difference-in-Hansen test that the statistics are not significant in all models. Besides, the standard first difference instruments are also valid. The errors are also not second order serially correlated. Furthermore, the models with time dummies perform better as show by Wald statistics.

All models are dynamic in nature. The lagged dependent variables are significant at least at one percent of significance level. As indicated earlier, the lagged dependent variable allows for the partial adjustment of each trade, export, or import to its long run equilibrium value, respectively. The real per capita income is not significant to affect trade ratio. In contrast, it affects positively and significantly the export and import one they were analysed separately.

The *RER* does not affect the trade and import ratios. However, *RER* negatively affect the export. This indicates that an increase in real exchange rate implies causes the export to be relatively more expensive. Then, this reduces the competitiveness of one country's goods in the international market.

Interestingly, the net migration affects negatively the trade, export and import ratios. This result supports earlier finding of Mundell's (1957) result that both trade and migration are substitutes to each other. Aforementioned, Mundell as well as Samuelson explicitly stated that, under certain assumptions, the rise of trade barriers encourages factor movements, and on the other hand, limits on factor movements stimulates trade. Trade (export and import as well) is described through the different relative returns to production factors at home and abroad and any obstruction to trade allows for factor movements across the borders. Hence, we can conclude that migration discourages trade and reject our earlier hypothesis that the effect of labour migration on trade by using networks and information flow effects, and preferences and demand effects may show that trade and migration are complements.

TABLE 3 GMM results for trade model

Independent variables	1-step difference GMM		1-step system GMM	
	Without time dummies	With time dummies	Without time dummies	With time dummies
$\left(\frac{T}{Y}\right)_{t-1}$	0.5335133 (0.0855509)***	0.5764404 (0.0870804)***	0.9741673 (0.0496901)***	0.9848878 (0.0515373)***
$\left(\frac{Y}{POP}\right)_t$	0.000037 (0.0000351)	0.0000234 (0.0000416)	0.000014 (0.00000914)	0.0000143 (0.00000932)
RER_t	0.0009323 (0.000869)	0.0010242 (0.0007566)	−0.000253 (0.0003594)	0.000104 (0.0003627)
MIG_t	−0.000000365 (0.000000229)	−0.000000382 (0.000000213)	−0.000000201 (0.000000111)*	−0.000000217 (0.000000119)*
year	0.0309841 (0.01261)**	−0.0129926 (0.0345639)	0.0096225 (0.0048024)**	−0.0550858 (0.0350926)
cons			0.0015886 (0.0552593)	0.6424294 (0.3575261)*
AR(1)	−2.85***	−2.73***	−2.85***	−2.73***
AR(2)	1.63	1.44	1.34	1.08
Hansen test (df)	72.06(92)	68.99(92)	72.94(117)	67.44(117)
Difference-in-Hansen test (df)			73.98(92)	65.37(92)
Wald test	274.35***	568.89***	1952.45***	2599.61***
Observation	410	410	487	487
Groups	75	75	77	77
Number of instruments	97	105	123	131

Note: The dependent variable is $(T/Y)_t$. The robust errors are in parentheses. ***, ** and * denote atleast 1%, 5% and 10% significance levels respectively.

TABLE 4 GMM results for export model

Independent variables	1-step difference GMM		1-step system GMM	
	Without time dummies	With time dummies	Without time dummies	With time dummies
$\left(\frac{X}{Y}\right)_{t-1}$	0.3651793 (0.1517)**	0.341571 (0.1756677)*	0.9806333 (0.0592644)***	0.9895891 (0.0591688)***
$\left(\frac{Y}{POP}\right)_t$	0.0000545 (0.000096)***	0.0000558 (0.0000242)**	0.00000658 (0.00000363)*	0.00000649 (0.00000356)*
RER_t	0.0000258 (0.000161)	0.000095 (.0001567)	−0.0002407 (0.0001264)*	−0.0002073 (0.0001174)*
MIG_t	−0.000000141 (0.0000000695)**	−0.000000146 (0.0000000146)**	−0.000000109 (0.0000000479)**	−0.000000109 (0.0000000483)**
year	0.0127987 (0.0045902)***	0.0164134 (0.0184097)	0.0030282 (0.0020573)	−0.0117012 (0.0164754)
cons			0.0285294 (0.0201823)	0.1732268 (0.1673375)
AR(1)	−1.66*	−1.46	−3.17***	−3.10
AR(2)	0.94	0.94	1.11	0.92
Hansen test (df)	41.42(35)	38.58(35)	47.89(43)	43.88(43)
Difference-in-Hansen test (df)			41.58(35)	34.36(35)
Wald test	130.41***	299.03***	797.27***	1812.04***
Observation	410	410	487	487
Groups	75	75	77	77
Number of instruments	40	48	49	57

Note: The dependent variable is $(X/Y)_t$. The robust errors are in parentheses. ***, ** and * denote atleast 1%, 5% and 10% significance levels respectively.

TABLE 5 GMM results for import model

Independent variables	1-step difference GMM		1-step system GMM	
	Without time dummies	With time dummies	Without time dummies	With time dummies
$\left(\frac{M}{Y}\right)_{t-1}$	0.2978608 (0.1548139)*	0.3587633 (0.1515901)**	0.720845 (0.1048996)***	0.7534105 (0.1057122)***
$\left(\frac{Y}{POP}\right)_t$	−0.0000171 (0.0000321)	−0.00001 (0.0000316)	0.0000153 (0.00000858)*	0.0000133 (0.00000803)*
RER_t	0.0021742 (0.001217)*	0.001224 (0.0008415)	0.0004407 (0.000514)	0.000118 (0.0004169)
MIG_t	−0.000000164 (0.000000217)	−0.0000000917 (0.000000156)	−0.000000167 (0.0000000808)**	−0.000000135 (0.0000000698)*
year	0.0358955 (0.0132611)***	−0.0028326 (0.0173137)	0.0139579 (0.0046636)***	−0.025101 (0.0199981)
cons			−0.0625733 (0.0711856)	0.3778364 (0.2098213)*
AR(1)	−2.64***	−2.61***	−3.01***	−2.90***
AR(2)	1.53	1.69*	1.35	1.16
Hansen test (df)	65.88(60)	66.90(60)	73.05(84)	70.86(84)
Difference-in-Hansen test (df)			65.42(60)	66.39(60)
Wald test	120.92***	301.40***	357.79***	777.46***
Observation	410	410	487	487
Groups	75	75	77	77
Number of instruments	65	73	90	98

Note: The dependent variable is $(M/Y)_t$. The robust errors are in parentheses. ***, ** and * denote atleast 1%, 5% and 10% significance levels respectively.

Conclusion

The increase of total international migration stock flow and net migration has renewed the discussion on the global effect of migration. In both developed and developing countries, the magnitude of migration stock and net migration have increased in last few decades. Furthermore, negative sign for the net migration in certain countries indicates that the number of emigrants outnumbered the immigrants. This situation attracts the study to explore the relationship between migration and trade. Previous studies provide mix of results of either to be substitutes or complements. Therefore, this paper analyses the relationship between migration and trade in both developed and developing economies. This study finds that migration affects trade, export and import negatively. This result implies that trade and migration are substitutes. This finding rejects the hypothesis that there is a complementary relationship between trade and migration.

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Regional or Global Production Networks of the Asian Automobile Industry?

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Introduction

China's rise and the emergence of developing Asia has shifted global demand to Asia (ADB 2010: 37) making it not only the factory but also the shopping mall of the world (Jetin 2012). This is especially true for the automobile. Since 2013, Asia sells more than twice the vehicle sales in North America and Europe and the gap is growing (Jetin 2015). In terms of production, Asia's prominence is even larger[161]. Excluding China, Asia's market is of the same size as the North American and European ones. Although the automobile is one of the most traded product at world level[172], there is a consensus, in the literature dedicated to the globalisation of the car industry, that vehicle demand is primarily satisfied by regional production networks[183] (Sturgeon and Van Biesebroeck 2011, Lung and Van Tulder 2004, Freyssenet et al. 2003). For instance, 78% of the vehicles sold in North America in 2015 were produced in North America and 22% were imported from other regions of the world. For the European Union, extra-regional imports amounted to only 15%. In Japan, which is traditionally a closed market, total imports accounted for a meagre 7% of total sales[4]. In the case of Asia, defined as the reunion of East Asia, Southeast Asia and South Asia, the question arises as to whether the increase in automobile demand will be met above all by local supply and lead to a deeper regionalisation of Asian automobile production networks. The numerous free trade and investment agreements already signed by the countries of this vast region point in this direction. For instance, the Association of Southeast Asian Nations (ASEAN)[5] has launched in 2015 the ASEAN Economic Community (AEC) which has eliminated tariffs among its main member states and the remaining ones will be completely removed in 2018 (Mikic 2016). Free trade agreements between ASEAN and all its main partners in Asia-Pacific have been signed (the so-called ASEAN+1) and a single comprehensive agreement, the RCEP is being negotiated to give Asia and the Pacific a unified trading framework. South Asian countries have created the South Asian Association for Regional Cooperation (SAARC)[6] in 1985 which launched the South Asian Free Trade Area (SAFTA) in 2006.

All these elements point towards a deeper regional integration of Asia as a whole[7]. But in the automobile case, is there evidence of such an underlying trend towards more regionally-focused production networks? What is the role of China in this process? Will the pull of the Chinese automobile market be strong enough to reorganise the existing Asian automobile production networks and in what way? Or will the existing automobile production networks stay more focused on a sub-regional and more fragmented level?

1 In 2015, Asia sold around 44 million vehicles versus 21 million in North America and 16.5 million in Europe. Asia produced about 47 million vehicles, North America 18 million and Europe 21 million. Asia includes Australia and Iran. Europe is defined in the broad sense and includes the EU 27 countries, other European countries, Russia and Turkey. Vehicle is defined as all personal and commercial vehicles. Source OICA

2 In 2015, at the two-digit level, the category 87 in the Harmonised System (HS) of the United Nations, "vehicles other than railway or tramway rolling stock, and parts and accessories thereof" comes at the fourth rank with a share of 8.1% of world exports. At the four digit level, "Motor cars and other motor vehicles principally designed for the transport of persons" come second, just after "Petroleum oils and oils obtained from bituminous minerals, crude" in world exports. Source: Trade World Map, ICT.

3 Many terms are used in the literature to refer more or less to the same reality, the fact that products are not made in a single country: fragmented production, global production network, global value chains, global commodity chain, trade in value-added, production sharing, supply chains, outsourcing, offshoring, vertical integration. We prefer the term "global production network" for reasons that are explained at length in Henderson, J., P. Dicken, M. Hess, N. Coe & H. W.-C. Yeung (2002) 'Global Production Networks and the Analysis of Economic Development', *Review of International Political Economy*, **9**, 436-64.

4 Author's calculations with data from CCFA, 2016, (p 9-10) estimated by dividing imports by sales of total vehicles expressed in units.

5 Founded in 1967, ASEAN member states include Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.

6 Its member states include Afghanistan, Bangladesh, Bhutan, India, Nepal, the Maldives, Pakistan and Sri Lanka

7 In fact, one could argue that the regional process of integration involves Asia and the Pacific, Asia and Central Asia (including the Federation of Russia) and Asia and the Middle East. These regions are important as buyers of final products manufactured in Asia but are not integrated in the fragmented production networks and will therefore not be included in the scope of investigation.

To address these questions, the article starts with a review of the literature on the globalisation versus regionalisation process with an emphasis on the automobile industry. Automobiles are now produced by fragmented production networks which are organised on a regional level in varying degrees. Unfortunately, most of the literature focuses on Northeast Asia, and less frequently on Southeast or South Asia, nor does it analyse the possible interactions between these subregions. In section 2, we try to fill this gap by looking at the global and regional trade of two kinds of automobile products over the period 2001-2015: the final products (completely built-up personal cars) and intermediate products (parts and components). A growing share of cars imported from or exported to Asian countries would be an indicator of regionalisation. Another important indicator is the trade in parts and components which reflects the importance of fragmented production networks. We analyse two kinds of data to track a potential regionalisation. Firstly, the trade distance of automobile products. The shorter the distance is, the stronger the regionalisation. Secondly, the national origin of imports and exports of automobile products in the key domestic and sub-regional Asian markets. The purpose is to check the importance of exchanges between subregions and the special role played by key actors, among them China.

Our main findings show that, for Asia as a whole, there is indeed a trend towards deeper regionalisation. Between 2001 and 2015, import and export distances of parts and components have decreased by - 1189 km and - 797 km respectively. For cars, the figures are -262 km and – 731 km respectively. In 2015, 61% of parts and components imported by Asia came from Asia up from 57% in 2001. 43.5% of parts and components were exported to Asia up from 33% over the same period. Regarding the final product, cars, only 26% were imported from Asia in 2015, down from 30% in 2001 but the share of cars exported to Asia is growing to 29% of the total of exports, up from 12% in 2001. This trend covers different dynamics at the subregional and national level. China's rise has a direct effect on the subregional automobile production networks as the share of Chinese parts and components is increasing in the imports of ASEAN, India, Japan and Korea. In this sense, China is really integrating all the subregions of Asia and is a carrier of regionalisation of the automobile industry. It partly substitutes the role played by Japan in the previous decades. But Japan's influence has not declined as much as its direct share in trade exchanges may suggest. Japanese companies use their numerous subsidiaries localised in all the subregions of Asia to trade parts and components within the context of fragmented production. A final finding is that integration between India and Southeast Asia is still marginal. Korea, despite the success of Korean brands on global markets, does not play a big role in regional integration. The regionalisation of Asian automobile networks is primarily a Japanese and Chinese affair.

A. Regionalisation of Asian automobile networks: lessons learnt from the literature.

Two strands of the literature are relevant for our study. The first analyses the fragmented production networks of various regions of the world to determine whether they are regionally or globally-focused. Trade flows are examined to see if trade within the region develops faster than trade with the rest of the world. Gross trade or trade in value-added are studied, the latter approach being more precise as it avoids double counting and involves all the activities at different stages that concur to the production of the final product. A new approach, the network analysis (De Benedictis and Tajoli 2011), gives a more realistic account by assuming that countries are nodes that are linked by trade flows that determine a network that have specific properties changing with time. This gives a comprehensive view of the architecture of the trade network created by firms at a regional or global level when they established fragmented production networks.

The second strand of literature focuses specifically on the automobile industry in the Asian context, in particular the trade and industrial policy of host countries. The regional integration initiatives, like the AEC and the ASEAN+1 trade agreements, are supposed to give more opportunities to automobile firms to better organise their network. But these subregional free trade agreements are different from one another leading firms to manage complex rules and influencing the way automobile networks are organised. Protectionism stays at a high level in some cases, or has been reduced but at different levels according to the agreement. The outcome is a sort of variable-geometry regional integration. We present the level of tariffs that apply to automobile products and review some recent trade agreements that are relevant for automobile networks.

B. Fragmented production networks: towards the "global factory"?

The consensus shared by all the studies is that production networks are initially regional. For Baldwin (2013: 20:21), in each regional block, there are "headquarter economies", like Germany or Japan, and "factory economies", whose exports contain a relatively large share of imported intermediates[8], like China and India. He discerns the existence of a "Factory Asia, Factory North America, and Factory Europe" because network trade of intermediates is more intense inside each block. Several subsequent studies have refined the original mapping of production networks (Sturgeon and Memedovic 2010) to better identify the share of foreign intermediates in a country's exports, the length of the production networks, the position of a country within it and its distance to final demand. These improvements have also helped to better estimate the regional character of the production networks.

For instance, (De Backer and Miroudot 2014) use a new OECD and WTO data base built in value added terms which covers 58 countries, including East and Southeast Asian countries[9], and 37 industries over the period 1995-2009. In 2009, the automobile industry counts among the highest fragmented industry[10] and among the most internationalised. But in each of the three blocks under review, (Europe, NAFTA, Asia), the regional organisation of the production dominates. In Asia, the sourcing of intermediates comes largely from within the region with a higher share of domestic intermediates in China, Japan, Korea and India and a higher share of foreign intermediates in the Southeast Asian countries. China, Japan and Korea are also more specialised in upstream activities and their participation rate to fragmented production is at an intermediate level. Thailand, Indonesia, the Philippines and Malaysia are more specialised in downstream activities and have a lower participation rate. Vietnam and Cambodia are closer to final demand because they are specialised in assembly activities and have almost no participation in network trade. The authors observe that the most successful countries are those that have specialised in intermediates products and have increased their "upstreamness". This success has enabled the new consumers of these countries to afford a broader range of final products. As a consequence, trade in final goods and services has increased as much as trade in intermediaries. The economic growth originating initially from a higher insertion into fragmented production networks leads in the end to more demand of final products.

Helble and Ngiang (2016) also find evidence that trade in intermediate and capital goods within East Asia has surged over the period 1999-2014 and that since 2011 more and more final goods are being reoriented towards East Asia. East Asia's prolonged prosperity has been translating into stronger demand for local consumer goods. This will enable East Asia to capture higher value-added downstream activities that traditionally accrue to European and American companies. Average lead times from Asian companies to Asian customers should fall leading to higher margins and lower prices. The authors base their conclusions on the analysis of export distances of Japan and Korea (merged into one group), China and ASEAN ten Member States (AMS)[11]. They distinguished four commodity groups: primary, intermediate, capital and consumer goods. A falling distance means that North America and Europe lose importance to the benefit of markets closer to East Asia and East Asia itself. They complete this first set of evidence with the use of a gravity model that confirms the change of East Asia's trade.

Their results reveal that primary and intermediate goods are shipped over short distances while capital and consumer goods are exported over longer distances, which is consistent with the assumption that the former are included in regional production networks. Interestingly, they show that the trade distances of the four commodity categories have fallen over the period for Japan, Korea and AMS, while they have increased in the Chinese case. For Japan and Korea combined, the trade distance of intermediate goods decreased from over 7,000 km in 1999 to 5,900 km in 2003 and is now stabilised around 5,500 km in 2014. The trend is almost the same for AMS. Their trade distance has declined from around 7,000 km in 1999 to around 5,800 km in 2014. Japan and Korea now export consumption goods over a distance of around 8,500km (8,800 km for AMS) down from around 9,500 km in 1999 (10,400 km). Capital goods followed the same pattern and are now exported over a distance of around 7,500 km in both group of countries. This provides evidence that East Asian production networks were mostly established in the early 2000s. Capital and intermediate goods were increasingly used by Asian production networks and a growing share of

[8] Intermediates include primary goods, parts and components, and semi-finished products.

[9] China, Chinese Taipei, Korea, Japan, India, Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand, Vietnam.

[10] The Index of fragmentation equals one for a final industry without production stages. It is above 2.5 for the automobile industry for most countries and above 3 in the case of China, Korea and Japan. Source: De Backer and Minoudot, op. cit. Figure 12 page 22.

[11] More precisely, they measure the evolution of the geographical distances between the most important cities in terms of population of bilateral pairs of countries: Japan, Korea, China and ASEAN member states (AMS) with their trading partners over the period 1999-2014

consumption goods produced in Asia were sold in Asia. For instance, in 2014, 42% of the consumer goods produced by ASEAN stayed in East Asia, up from 29% in 1999. On the other hand, China's export distances have regularly increased and have stabilised at the end of the years 2000s at around 6,500 km for intermediate, 7,500 km for capital and 8,000 km for consumer goods. China, which used to be a place of labour-intensive assembly of imported intermediates, is now itself an exporter of intermediates and also of capital goods, whose exports now exceed those of Japan and Korea combined. China has become a global factory for the four categories of goods which are shipped to Asia and the rest of the world. Overall, these results confirm the assumption that East and Southeast Asia regional integration is driven not only by supply, the fragmented production networks, but also by demand. The results of the gravity model confirm these conclusions. Notably, "sharing a common land border has become increasingly important for consumption good exports" (p 45).

Conversely,Timmer et al. (2015) find that the regional fragmentation is still dominant, but that over the last 15 years, the global fragmentation has increased faster than regional fragmentation. Using the new World Input-Output Database for the years 1995-2011, they identify the value added produced domestically or abroad. Then, they distinguish the foreign value added produced within the region to which the national producer belongs, from the global valued added produced outside the region. Their results show for the transport equipment industry[12], that in the six major producing countries, the share of the foreign value added in final output was on the rise over the period 1995-2011. In the major European countries, it was in a range of 35% to 42 % in 2011, up from a range of 22% to 28% in 1995. In the USA, after a stagnation of around 15% between 1995 to 2003, the foreign value added increased to around 23% in 2008, and after the crisis in 2009, it was around 26% in 2011. In Japan, the share of foreign value added was initially very low in 1995 (5%), and had tripled in 2011. China followed a different path. Its foreign share stagnated around 15% until China joined the WTO in 2001, after which it peaked to 25% in 2004. It then decreased regularly until the crisis of 2009, then resumed an increasing trend to around 22% in 2011. The authors explain this evolution by the strong growth of automobile components output in China which substituted imports for a while. The breakdown of the foreign value added in regional and global share reveals important differences among countries. For China, the regional share has decreased by -1% between 1995 and 2008, while the global share has increased by 7%. This contradicts the studies that describe how China assembles components imported from Japan, South Korea and Taiwan and then exports the final product to the rest of the world. This may be explained by the narrow definition of the region which does not include Southeast Asia. For Japan and South Korea, the global share has increased faster (respectively +9% and +8%) than the regional share (respectively +3% and +5%). For these two countries, regionalisation and globalisation are a complementary rather than contradictory phenomenon. In Taiwan, the global share has increased less (+2%) than the regional share (+3%) indicating that countries play a different role in fragmented production networks. Overall, the question remains whether these results reflect a structural change.

Amighini and Gorgoni (2014) precisely address the question of a structural change in the international organisation of automobile production by using network analysis. They analyse the trade data of 30 automobile parts and components (at five digits level) which are aggregated into four component groups: engines, rubber and metal parts, electrical and electric parts and miscellaneous parts. This is an improvement from Timmer et al (2015) as the analysis now focuses on the core of automobile network trade. They scrutinise the bilateral trade of these components for all the countries covered by the UN Comtrade database which accounts for at least 1% over the world's total for the years 1998 and 2008. Countries are grouped in mutually exclusive regional groups[13]. Trade networks are graphed with countries representing nodes and directed trade flows as the ties among them. Networks are different in size and composition among the four groups and change with time.

Overall, the results point to a more hierarchical structure, especially for the case of electrical and electric parts and miscellaneous parts, with a decline of the share of two-way trade within each network. In all networks, this hierarchy follows a core-periphery structure, in which all the countries of the periphery are connected to the core but have almost no connection between them. The composition of the core has changed, notably with the entry of China, and the core concentrates a higher share of world transactions. There are more countries in the periphery and they command a smaller share. The networks are therefore

[12] In their article, Timmer et al. state that they analyse the automobile products which means the category 34 (motor vehicles…). But the source given for their tables and charts relates to the whole transport equipment, which adds the category 35 which includes completely different products like planes, locomotives and ships.

[13] Western Europe, Eastern Europe North America, Latin America, Asia and Oceania

more vertical. As regards the degree of regionalisation of production, in two among the four component networks, there is a rise of regional production at world level. But in Asia, there is the emergence or strengthening of a regional production network in three among the four component groups[14]. Indonesia, Thailand and India have appeared in more networks in 2008, while the Philippines has disappeared and Malaysia is only present in the electric and electrical component category. In this same category, Japan, which used to import from Asian countries to export to Europe, has passed this role to China where it has relocated much of its production capacity. In the miscellaneous parts group[15], there was no Asian production network in 1998, with only China importing from Germany and Japan exporting to the USA.

In 2008, China has become a crucial node of an Asian network, importing parts from South Korea and Japan and exporting to the USA, and linking European and North American networks with Japan. Japan exports parts to Thailand and Indonesia where Japanese carmakers have delocalised part of their production. In the rubber and metallic parts category, there is a general decline of regional networks. Asian countries (China, Japan, South Korea, Indonesia and Thailand) supply the USA, but they do not share production between them hence the absence of an Asian network in this category. Engine is a truly global trade network, with reduced core-periphery structure in which all regional groupings are intertwined. While European and North American networks have declined, Asian countries have deepened their regional organisation with the arrival of new actors such as India and Thailand.

In summary, we conclude from these three articles that it is necessary analysed above point to a process of regionalisation of automobile production networks in Asia which is differentiated among countries and among products. These differences are expected due to the large differences in economic development of Asian countries and the variety of their automobile industries. The region hosts two countries (Japan and South Korea) with domestic global brands but relatively small markets, two large markets (China and potentially India) without domestic global brands, and a group of middle-income countries with significant markets but almost no domestic producers. These different subregions have different strategic interest regarding their automobile industry. We now look precisely at the trade policies that have been adopted in Asia to accommodate fragmented production on one side while protecting to a certain extent the national production, and in some cases the national producers, on the other side.

C. Asian automobile integration: between regionalisation and protection.

Production networks are more sensitive to trade costs (tariff and non-tariff barriers, transport and logistic costs) as intermediate products cross borders more frequently than final goods. There may be an escalating effect when tariffs apply to the value of the good and when the number of stages of production is high (Escaith and Inomata 2013: 145). The different Asian subregions have signed trade agreements and invested in infrastructure to reduce trade costs but they remain fragmented due to the persistence of high tariffs and non-tariff barriers.

ASEAN is the most advanced initiative. Since the end of the eighties, Japanese carmakers had pressured Southeast Asian states to reduce tariffs on vehicles, parts and components to avoid duplicating investments in ASEAN countries where markets were too small to justify a fully integrated automobile production. They wanted to foster within-ASEAN trade to achieve higher economies of scale (Yoshimatsu 2002, Guiheux and Lecler 2000). Mitsubishi Motors proposed a plan, the Brand-to-Brand (BBC) scheme that was adopted in 1988. It granted tariff reduction and local content accreditation to carmakers to consolidate production of particular parts in one country and then export them to plants in other ASEAN countries. This scheme was instrumental in leading other carmakers like Toyota to invest in ASEAN to establish a complementary production system, which was actually the first step towards the creation of a more fragmented production system. However, ASEAN's decision in 1992 to create an ASEAN Free Trade Area (AFTA) by 2008, and the adoption of the Common Effective Preferential Tariff (CEPT) scheme implemented in 1993, led ASEAN to scrap the BBC scheme in 1995. The opposition of Japanese carmakers and part producers like Denso, of the Japanese Automobile Manufacturers Association (JAMA), and of the Japanese government convinced ASEAN to substitute the BBC by a new scheme, the ASEAN Industrial Cooperation (AICO) which included carmakers and part producers. The new scheme did not work well initially because of conflict over the implementation of the AICO between multinational companies and governments willing to protect their national companies. The Asian crisis of 1997-98 forced the ASEAN countries to relax their requirements. Notably, they waived the 30 percent national equity requirement during the period 1999–2000 because many local companies were bankrupt and needed to be bailed-out

[14] In respectively, electrical and electric parts, in miscellaneous parts and in engines and parts. The exception is in rubber and metallic parts.
[15] This group includes important items such as chassis fitted with engines, bodies, bumpers, brakes, gearboxes, drive-axles and seats.

by their foreign partners. The number of approved applications increased and ASEAN-wide production networks began to operate. The gradual implementation of the AFTA which reduced tariffs to almost zero by 2010 between 6 ASEAN founders plus Brunei Darussalam[16] was an additional factor. According to (Okabe and Urata 2014), it had a positive and significant impact on the intra-ASEAN imports of automobile parts and components. It was later completed with the launch of the ASEAN Economic Community in November 2015 which created a "single market and a single production base" (Jetin and Mikic 2016). ASEAN latecomers, Cambodia, Laos, Myanmar and Vietnam, also called CLMV countries, were given until 2018 to remove tariffs completely[17]. At that date, trade of cars and of parts and components will be completely tariff-free, provided that at least 40% of the value is produced within ASEAN. This rule of origin can be easily met because the local content can be accumulated across several ASEAN members (for instance, 20% in Thailand, 10% in Indonesia and 10% in Malaysia). This is precisely the logic of fragmented production and reflects the ongoing influence that carmakers have exerted on ASEAN agreements. This creates an incentive to produce within ASEAN to benefit from the exemption of taxes and may strengthen a multi-layered structure (Kobayashi et al. 2015). The first layer will be made of Japanese and US car makers with a high level of local content (60% and above). They are located in Thailand, Indonesia and to a lesser extent in Malaysia. The second layer is made of CKD assemblers with at least a 40% local content. They are based in Vietnam, Indonesia, Malaysia and Thailand. The third layer is made of CKD assemblers of brands that do not fulfil the 40% local content requirement. These assemblers will be marginalised in ASEAN as they will have to pay tariffs on imports of CKD units while their competitors which satisfied the local requirement content will not. Finally, for parts and components, the logic would be that tier-one producers are localised near car makers in Thailand, Indonesia or even Malaysia while tier-two and three producers are localised in CLMV countries where wages are lower (Kobayashi and Jin 2015). Some plants have already been built or offshored in Cambodia and Laos, but the phenomenon is for the moment of limited importance. On the long-term, it is also possible that ASEAN's major automobile producers, Thailand and Indonesia, become the two main hubs from which cars are exported to the rest of Southeast Asia[18].

At the same time, free trade areas and foreign investment agreements were signed by ASEAN and China, Korea, Japan, India, and Australia/New Zealand[19]. A trade agreement has also been signed between South Korea and China and implemented in 2015. An agreement between China, Korea and Japan is still being negotiated. China has signed a free trade agreement with Pakistan in 2007 but a trade arrangement with India is still at the stage of discussion. India and Korea have signed an agreement which entered into force in 2010. On paper, these agreements give a formal framework to existing business connections and add new incentives to extend production networks to the whole Asia. But in practice, the benefits for the automobile trade are minimal because in many cases cars and auto components are still subject to the sensitive or highly sensitive list (Abe 2013), (Pasha 2011) and tariffs between ASEAN and its main Asian partners remain high. Table 1 and 2 show the tariffs for the year 2016 between selected countries of Northeast, Southeast and South Asia for cars (HS 8703) and auto parts and components (HS 8708)[20].

If we exclude trade within ASEAN where tariffs have been scraped, tariffs on built-up vehicles remain high, ranging from 20 to 25% in the case of China, up to a prohibitive 100% in India. For instance, China applies a 23% rate on imports of Korean cars although the two countries have just signed a "free trade" agreement. Despite Korean carmakers' lobbying, the agreement maintains automobile products in the list of sensitive products because the Chinese government wants to protect its market and oblige Korean automobile producers to invest and manufacture in China (Schott et al. 2015). Combined with the 9% tariff on Korean parts, this impedes Korean car makers and parts producers to directly integrate their plants in Korea with those of China.

[16] Namely Brunei, Indonesia, Malaysia, the Philippines, Singapore and Thailand.
[17] According to Peel, M. (2017) 'Vietnam's drivers trade up from two wheels to four', in *Financial Times*, (London: , in 2017, the cut in import taxes has generated a boom in the market for new cars in Vietnam

[18] In the case of Vietnam, "shipments from Indonesia jumped from almost zero in the first two months of 2016 to more than 3,000 this year, while those from Thailand climbed almost fourfold to more than 5,700, according to Vietnam's customs authority" Ibid.
[19] The agreement with China was signed in 2005 for goods, in 2007 for services and in 2009 for investment. The agreement with Korea was signed in 2006, with Japan in 2008, with India in 2009, with Australia/New Zealand in 2009.
[20] See below for detail explanation of the classification.

Except for Brunei Darussalam and Singapore, where there is no tariff at all, other ASEAN countries apply high tariff too. For instance, Thailand imposes a tariff of 40% on the import of Chinese cars, of 62% and 66% on Korean and Japanese cars, and 75% on cars imported from South Asian countries. Vietnam does the same with a tariff around 55% while in other ASEAN countries tariffs range between 20% and 30%. South Asian countries are also protectionist, Pakistan being second to India with a tariff of 87%. Such a high level of protectionism is a major hindrance to a regional trade of finished vehicles between the three parts of Asia. Apart from ASEAN, trade of vehicles within Northeast and South Asian countries is also impaired by the same tariff barriers. For instance, trade between the two largest South Asian countries, India and Pakistan is virtually impossible for political and protectionist reasons although it would be mutually beneficial for both countries (Nag 2017, Ahmed and Batool 2017).

Table 1. Equivalent ad valorem tariff applied by importer country to exporter country on motor vehicles (HS 8703)

Importers	China	Japan	South Korea	Taiwan	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	Bangladesh	India	Pakistan	Sri Lanka
China		25	23	25	21	21	21	20	21	21	21	21	21	21	23	23	23	23
Japan	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Korea	8	8		8	0	0	0	0	0	0	0	0	0	0	0	0	8	8
Taiwan	17	17	17		17	17	17	17	17	17	17	17	17	17	17	17	17	17
Brunei	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0
Cambodia	0	27	28	28	0		0	0	0	0	0	0	0	0	28	16	28	28
Indonesia	27	29	18	29	0	0		0	0	0	0	0	0	0	29	24	29	29
Lao PDR	15	40	40	40	0	0	0		0	0	0	0	0	0	40	40	40	40
Malaysia	22	3	21	23	0	0	0	0		0	0	0	0	0	23	23	16	23
Myanmar	24	27	27	27	0	0	0	0	0		0	0	0	0	27	27	27	27
Philippines	29	30	30	30	0	0	0	0	0	0		0	0	0	30	30	30	30
Singapore	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Thailand	40	62	66	75	0	0	0	0	0	0	0	0		0	75	75	75	75
Vietnam	54	49	50	55	0	0	0	0	0	0	0	0	0		55	55	55	55
Bangladesh	20	20	20	20	20	20	20	20	20	20	20	20	20	20		20	20	20
India	100	100	100	100	100	0	100	0	100	100	100	100	100	100	31		10	0
Pakistan	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87		87
Sri Lanka	21	21	19	21	21	21	21	21	21	21	19	19	19	19	19	19	19	

Source: Trade Map, ICT database. Retrieved on 13 May 2017. How to read the table? China applies a tariff of 25% on cars imported from Japan, 23% on cars imported from Korea, 25% on cars imported from Taiwan (China)…

Note: The tariff data available in Trade Map is uniquely based on the minimum rates applied by the importing country(s). Ad valorem equivalent (AVE) tariffs are calculated using the World Tariff Profile

(WTP) methodology. At the HS4 level, tariffs aggregations are calculated using the country's Reference group imports as weights.

Table 2. Equivalent ad valorem tariff applied by importer country to exporter country on automobile parts and components (HS 8708)

Importers	China	Japan	South Korea	Taiwan	Brunei	Cambodia	Indonesia	Lao PDR	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam	Bangladesh	India	Pakistan	Sri Lanka
China		10	9	6	2	1	2	2	2	1	2	2	2	2	2	9	6	9
Japan	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Korea	6	8		8	0	0	0	0	0	0	0	0	0	0	0	0	8	6
Taiwan	8	8	8		8	8	8	8	8	8	8	8	8	8	6	8	8	8
Brunei	0	0	16	20		0	0	0	0	0	0	0	0	0	20	0	20	20
Cambodia	0	14	9	14	0		0	0	0	0	0	0	0	0	14	10	14	14
Indonesia	8	10	6	10	0			0	0	0	0	0	0	0	10	10	10	10
Lao PDR	0	10	10	10	0	0	0		0	0	0	0	0	0	10	8	10	10
Malaysia	0	0	11	15	0	0	0	0		0	0	0	0	0	15	7	11	15
Myanmar	0	4	4	4	0	0	0	0	0		0	0	0	0	4	4	4	4
Philippines	11	11	11	11	0	0	0	0	0	0		0	0	0	11	11	11	11
Singapore	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0
Thailand	11	19	11	24	0	0	0	0	0	0	0	0		0	24	22	24	24
Vietnam	5	5	11	14	0	0	0	0	0	0	0	0	0		14	14	14	14
Bangladesh	10	10	10	10	10	10	10	10	10	10	10	10	10	10		10	10	10
India	10	10	10	10	10	0	10	0	10	10	10	10	8	10	0		10	0
Pakistan	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35		33
Sri Lanka	102	102	102	102	102	102	102	102	102	102	102	102	102	102	58	85	86	

Source: Trade Map, ICT database. Retrieved on 13 May 2017
How to read the table? China applies a tariff of 10% on parts and components imported from Japan, 9% on parts and components imported from Korea…

Note: The tariff data available in Trade Map is uniquely based on the minimum rates applied by the importing country(s). Ad valorem equivalent (AVE) tariffs are calculated using the World Tariff Profile
(WTP) methodology. At the HS4 level, tariffs aggregations are calculated using the country's Reference group imports as weights.

Trade of parts and components tends to be less protectionist. China has low tariffs on ASEAN products and higher with Northeast and South Asian products which fits with its role of assembler of Southeast Asian intermediates. ASEAN countries have high tariffs, especially on imports from South Asian countries which are direct competitors due to their low wages. Thailand, which hosts an important supply base, is more protectionist than other ASEAN countries with one exception. Thailand signed an agreement with India in 2004 that remove tariffs on gearbox and parts for spark ignition in engines, while for the rest, a 10% tariff is applied on average. Pakistan and Sri Lanka impose high tariff to protect their suppliers which makes virtually impossible the establishment of auto parts production networks within South Asia.

Even when tariffs are low or have been eliminated as it is the case within ASEAN, non-tariff barriers are an issue and contribute to maintaining high trading costs. For instance, the rule of origin is complicated to apply due to changes of classification and of value content (Cheewatrakoolpong et al. 2013). Another example is the lack of harmonisation of technical regulation within Asia. In ASEAN, which is supposed to be a single market since 2005, JAMA is advocating for the adoption of a mutual recognition agreement (MRA) on vehicle regulation in areas such as vehicle type approval, safety policies and fuels to provide a legal framework for auto production systems. A basis could be the 1958 agreement adopted at the United Nations. Under an MRA, contracting parties within ASEAN agree to recognise each other's approval without the need to re-certification. This would be a major trade facilitation for companies which are heavily involved in ASEAN network trade. JAMA has established the "industry forum of Southeast Asia" in 2015 (ISEA) which held its first meeting in Kuala Lumpur in 2015 to lobby for the adoption of this MRA. It is also very active in the different institutional working groups set by ASEAN and business circles to promote the MRA. Yet, after more than 10 years of discussion, the agreement is still not adopted.

Finally, to get a complete picture, it is important to consider non–tariff comprehensive trade costs such as non-tariff measures compliance costs, costs associated with transport, logistics and facilitation services, among others[21] (Duval and Feyler 2016: 156-57). Within ASEAN-4 (Indonesia, Malaysia, Philippines and Thailand), they amount on average over the period 2007-2012 to 77% of the value of the traded goods, despite all the initiatives taken to reduce such costs in the perspective of the AEC. Trading within the CLMV countries is even more expensive with a cost of 128%. Trade cost within SAARC is also high, adding 108% to the value of the goods. This must be compared with the trade costs within the EU-3 (France, Italy and the United Kingdom) (44%) and within NAFTA (46.5%). This shows the progress to be made by the ASEAN EC and SAARC to become a single market or simply more integrated. Duval and Feyler observes that trade costs between Northeast Asian countries (China, Japan and South Korea) are much lower (51.4%), although there is no trade agreement in force yet between the three countries. Another important result is that trade costs between ASEAN-4 and Northeast Asia are much lower than those between ASEAN-4 and CLMV economies (165%) or with SAARC (121%). This reveals a strong connectivity between the two subregions and explains the strength of production network between ASEAN-4 and Northeast Asia and in particular China. Conversely, it shows that ASEAN-4 is not much integrated with the rest of ASEAN and with SAARC.

In summary, Asia is still a fragmented region. With the exception of Japan and Korea, all the other countries have maintained a protectionist policy to oblige carmakers and component suppliers to invest and produce locally and to protect domestic companies from direct foreign competition. This affects network trade within Northeast Asia and within South Asia, while ASEAN is the only subregion that has made progress towards a single market. It also limits network trade between Northeast Asia and South Asia and between South Asia and Southeast Asia. Network trade of auto parts and components between Northeast and Southeast Asia is the only one which enjoys low tariff and non-tariff barriers and firms' initiatives to reduce other trade costs. In the next section, we look at how automobile firms have dealt with this framework to manage their production network.

D. Checking the fact: Is there evidence of a regionalisation of Asian automobile production networks?

To check the existence of a regionalisation process, we look at two sets of indicators. Firstly, the trade distance of the major automobile producers and markets in Asia. A short distance means that trade operates at the regional level and conversely a long distance means that trade with other regions of the world dominates. Secondly the geographical origin of automobile trade gives more insights about the exchanges between the different Asian subregions. We use ICT investigation tool named "Trade Competitiveness

[21] Comprehensive trade costs represents all extra costs involved in trading goods internationally rather than domestically, i.e. tariffs and non-tariffs measures (NTM). As tariffs have been removed within ASEAN, the authors focus on NTM. The data comes from the ESCAP-World Bank database. For a detailed description, see Duval and Feyler, op cit. page 155-56.

Map"[22] based on COMTRADE database and the Harmonised System Classification (HS) revision of 2012[23]. Automobile products (category 87)[24] are defined as "Vehicles other than railway or tramway rolling stock, and parts and accessories thereof" and can be divided into the category "vehicles for the transport of less than 10 persons" (hereafter "cars", category 8703)[25] and into "vehicle components and parts" (hereafter, "components", category 8708). We start by presenting the trade distance for cars, components and total products for selected countries and regions of the world for the year 2015 and then focus on the evolution of the distances for Asia only.

Table 3 and 4 present respectively the average import and export distances of different regions of the world. At global level, cars are traded at an average distance close to the world average while automobile components are traded on shorter distances (around 4,000 km) which is a first indication that components are used by regional rather than global production networks. Nonetheless, there are important variations across the different region of the world.

Table 3. Average distance of suppliers from importing countries, for vehicles for the transport of less than 10 persons (HS 8703) and vehicle components and parts (HS 8708), and all products, in km

Imports	8703	8708	All products
Asia	7 590	5 121	5 455
Northeast Asia	8 027	5 192	4 999
ASEAN	5 221	4 790	4 505
South Asia	5 111	5 612	5 529
NAFTA	5809	5 266	7 175
EU 28	1 981	1 797	3 001
World	4 901	4 001	5 125

Source: ICT and COMTRADE. Author's calculations using countries' weight in the relevant region.

Table 4. Average distance of importing markets from exporting countries for vehicles for the transport of less than 10 persons (HS 8703) and vehicle components and parts (HS 8708), and all products, in km

Exports	8703	8708	All products
Asia	8 825	7 353	5 775
Northeast Asia	9 048	7 572	5 763
ASEAN	6 658	5 662	5 557
South Asia	8 239	8 447	6 574
NAFTA	4219	2 741	5 376
EU 28	5 130	2 508	2 735
World	4 709	4 009	4 695

Source: ICT and COMTRADE. Author's calculations using countries' weight in the relevant region.

Asia mostly trades cars on very long distances (7590 km for imports and 8,825 km for exports), much above the respective distances of total products in Asia (5,455 km and 5,775 km) and above world level (5,125 km and 4,695 km). Asia imports components from an average distance of 5,121 km which is shorter than the longest East-West distance (Karachi-Tokyo, 6,910 km) or Northeast-Southeast distance (Jakarta-Tokyo, 5,750 km). This implies that Asia as a whole imports components that come mostly from Asia itself which is consistent with the existence of a regional production network. These components are mostly exported outside of Asia. Looking at Asia's different subregions, we observe the following:

Northeast Asia follows the same pattern for components that are imported mostly from Asia and exported beyond Asia. For cars, the respective trade distances are even longer (8,027 km and 9,048 km) than for Asia which shows that they are really a global product in this subregion where the income per capita is high.

[22] Source: Trade Competitiveness Map, International Trade Centre (ITC). The primary source of the data for the geographical distance between two countries is the CEPII database (Mayer T. & S. Zignago (2006), "GeoDist: the CEPII's distances and geographical database", MPRA Paper 31243). It measures the average distance between two countries corresponding to geographical weights between main economic centres of each country. Downloaded on 10 February 2017 at: http://www.trademap.org/countrymap/Country_SelProduct_Graph.aspx?nvpm=1|||||TOTAL|||2|1|1|2|1|1|2|1|

[23] The Harmonized System (HS) is an international nomenclature defined by the World Customs Organisation (WCO) for the classification of products. For more details, see http://www.trademap.org/stGlossary.aspx

[24] In 2015, automobile products (HS87) accounted for 8% of global exports, which placed them at the fourth rank at world level, the first rank being occupied by "electrical machinery" (HS85) which amounted to 14% of global trade. Automobile products are therefore at the core of global trade.

[25] The category 8708 is broad as it includes not only parts and components for cars but also for vehicles for the transport of more than 10 persons, for the transport of goods, special vehicles and tractors. The category 8703 covers vehicles for the transport of less than 10 persons such as sedans, SUVs, pick-ups, and station-wagons.

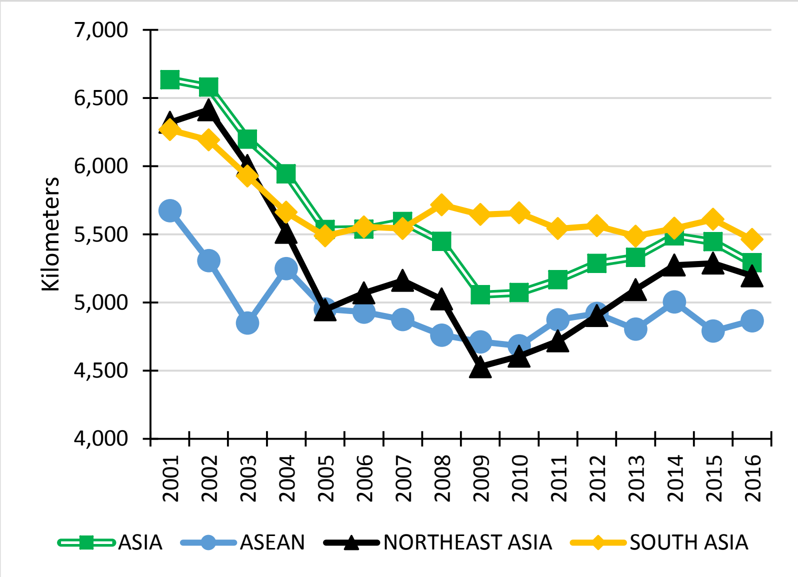
ASEAN imports cars from a much shorter distance (5,221 km) than Northeast Asia (8,027 km). Without the special case of Singapore[26], ASEAN's average distance of car imports would be even shorter (4,069) km. This is inferior or equal to the longest possible distances between ASEAN and Northeast Asia or between ASEAN and South Asia[27]. For components, the trade import distance is even shorter (4,790 km). This means that cars are and components are mostly supplied by Asia and ASEAN itself. ASEAN export distances of cars and components are longer than import distances but much shorter than in the Northeast Asia case which confirms that ASEAN is on average more regionally focused.

South Asia imports cars from a rather short distance on average (5,111 km), like ASEAN, but imports components from a longer distance (5,612 km). Knowing that the longest distances between the capital cities from South to Northeast Asia are around 6,900 km[28], this implies that South Asia's automobile imports are on average within the confines of Asia. Conversely, South Asia exports cars and components over very long distances (8,239 km and 8,447 km), superior to the distances for all products. This reflects primarily the export pattern of India which exports primarily outside of Asia.

NAFTA member states (North America Free Trade Agreement) import significantly cars and components from outside their region. Car and component import distances (respectively 5,809 km and 5,266 km) exceed by 1,600 km or more the longest distance between two capital cities of the region (Mexico City and Ottawa are 3,600 km distant). It means that not only NAFTA imports many cars from the rest of the world but its production network is also more globalised. NAFTA exports on shorter distances (4219 km for cars and 2,741 km for components). It means that North American firms import components from abroad that are incorporated in the local production network to produce other components that are exported on average within the borders of NAFTA.

At the other end of the spectrum, Europe (the European Union 28 member states) appears as the most regionalised automobile production network. Cars and components are imported from less than 2000 km, which is 1000 km less than the average for all products (3000 km) and less than the longest possible distance between two European capital cities (Lisbon – Helsinki, 3,350 km). Export distances of cars (5,130 km) reveals that Europe exports much of its production out of Europe but components are primarily exported within the European borders (2,508 km) which is slightly less than the average for all products and confirms that the production network is very self-centred.

Figure 1: Import distance of automobile components by selected Asian subregion



Source: Author's calculations with ICT database based on COMTRADE data

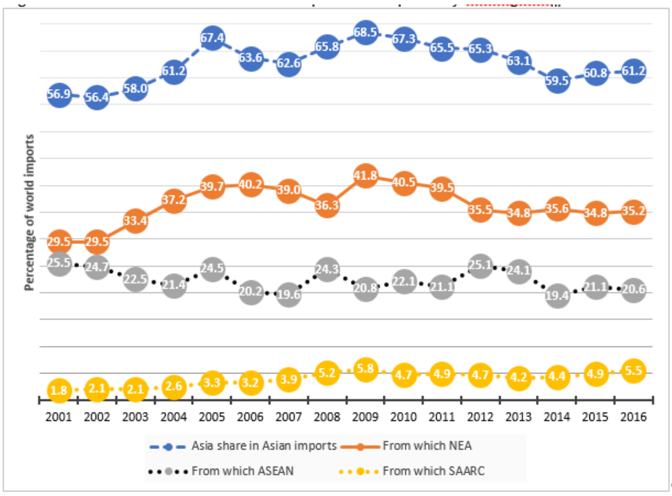
To confirm the hypothesis of a regionalisation of Asian production networks we focus on automobile component imports which is a good proxy of network trade. Figure 1 shows the evolution of import distance of auto components of Asia and its subregions over the period 2001-2016. One can see that Asia's import distance has fallen over the period from 6,635 km in 2001 to 5,290 km in 2016. In Northeast Asia, the fall was even more pronounced especially during the financial crisis of 2009 when automobile production dropped in major automobile markets. Although Northeast Asia's import distance recovered after the crisis, it stayed much below the level of 2001 and tended to decline after 2014 despite the boom in automobile demand and production in North America and Europe. The import distance of components in ASEAN

[26] Singapore combines a very high level of income per capita and one of the most competitive deep sea port of the world which makes it a hub for import and re-export of automobiles products on long distances.
[27] For instance, the distances between Jakarta and Tokyo, Jakarta and Beijing, Jakarta and Mumbai or Jakarta-New Delhi, are respectively 5,753 km, 5,200 km and 4,684 km, 4990 km
[28] The longest distances are from Karachi to Tokyo or Colombo to Tokyo which are respectively around 6,900 km and 6,800 km.

stayed below 5,000 km after the fall at the start of the period. South Asia has followed the same pattern. Overall, a regionalisation of Asian production system is underway.

We now look into more detail in the trade of components within and between the different Asian subregions to better explain this process of regionalisation.

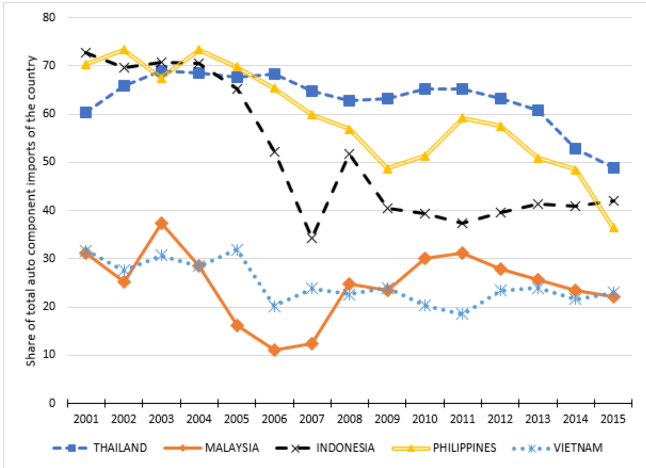
Figure 2: Breakdown of Asian auto components imports by subregions



Source: Author's calculations with ICT database based on COMTRADE.

Figure 2 presents the breakdown of Asia imports of automobile components by subregions. In 2016, around 61% of Asian automobile component imports were coming from Asia, up from 57% in 2001. This reflects a high level of productive integration, less than in the European Union (EU 28 countries) where it was around 83% but higher than in North America (NAFTA) where it was around 57% in 2016[29]. The small increase in regional sourcing of auto components in Asia between 2001 and 2016 is explained by a 5.7% increase of component imports coming from Northeast Asia and a 3.7% increase from South Asia offset by a reduction of around 5% in ASEAN. Compared to Northeast Asia and ASEAN, South Asia is still a small supplier of components to Asia but its share is slowly but steadily increasing.

Figure 3: Share of Japan in imports of automobile parts and components of selected countries

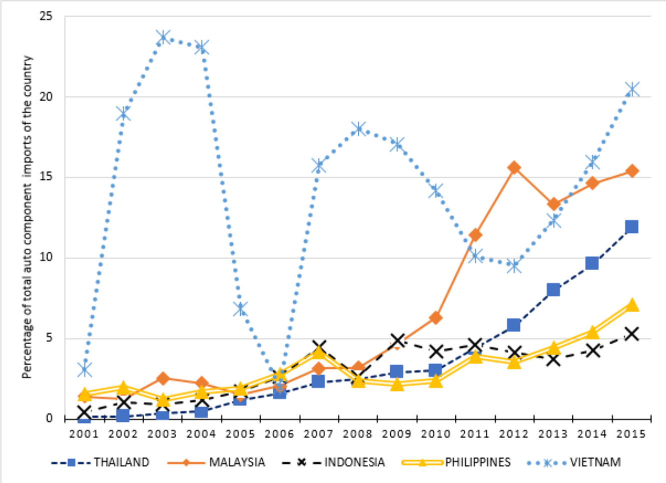


Source: Author's calculations with ICT database based on COMTRADE

To have a better view of the changes occurring behind this broad regionalisation process, we now look at the share of China and Japan, the two largest producers, in the imports of components of the main producers of the region. Starting with Japan, Figure 3 shows that in the largest ASEAN economies, there has been an overall reduction of the share of Japan in their imports of automobile components. The fall is especially important in the case of Indonesia, the Philippines and Thailand, less so for Malaysia and Vietnam. Conversely, Figure 4 shows a spectacular increase of Chinese components in the imports of the Southeast Asian countries. It is especially strong in the case of Vietnam, Malaysia and Thailand, less so in the Philippines and Indonesia. The rise of China is also occurring in India. Figure 5 shows that the overall increase of Asia in India's component imports hides a sharp drop of Korea, where the Hyundai group has established a strong presence, and a decline of Japan, while China's share has improved from almost nothing in 2001 to around 16% in 2015. It is also notable that ASEAN has doubled its share from 6.5% in 2001 to around 13% in 2015 as much as Japan.

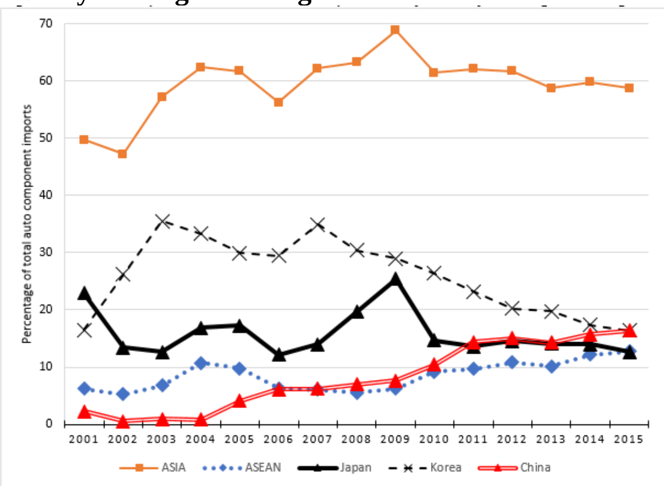
[29] Author's calculations with ICT database based on COMTRADE.

Figure 4: Share of China in imports of automobile parts and components of selected countries



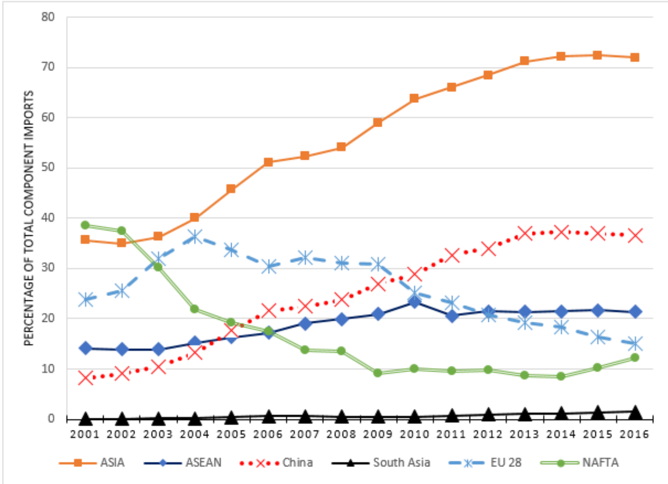
Source: Author's calculations with ICT database based on COMTRADE

Figure 5: India's imports of automobile components by country and region of origin



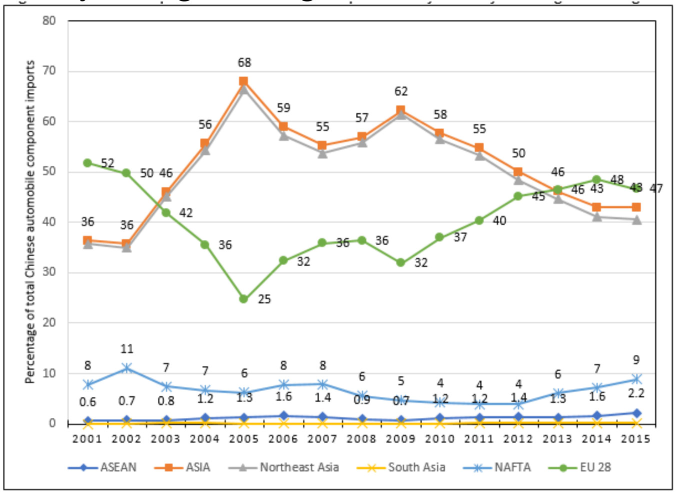
Source: Author's calculations with ICT database based on COMTRADE

Figure 6: Japan's imports of automobile components by country and region of origin



Finally, when we look to Japan, we observe (see Figure 6) that the sharp rise in Asian sourcing is mostly explained by the increase in imports from China and to a lesser extent from ASEAN, and a very small increase from South Asia. Imports from NAFTA and the EU have declined from their leading role in 2001. The regionalisation of Asian productive networks is primarily driven by China, but what about China itself? Figure 7 shows that after an initial surge up to 68% in 2005, China's imports of Asian auto components have declined steadily and have been replaced by imports from Europe. The latter now account for 47% of Chinese imports, higher than imports from Northeast Asia which mainly come from Japan and South Korea. Imports from ASEAN barely amount to 10% and imports from South Asia are negligible. This is explained by the success of European and mostly German brands in the Chinese market. High value added components like car bodies, transmission, gearboxes, steering and suspension equipment and headlight systems are imported to equip cars produced in China (Bungsche 2010). One limit to the regionalisation of Chinese automobile production networks is the fact that Asian and Chinese brands are not overwhelmingly dominating the Chinese car market. Massive imports of components from Europe makes Chinese production network more global than regional. China being the largest automobile market, this may explain why the regionalisation of Asian automobile production networks is still modest compared to its potential.

Figure 7: China's imports of automobile components by country and region of origin



Conclusion

This article tried to assess the level and trend of regionalisation of automobile production network in Asia. Asia has the potential to become the most integrated automobile region of the world thanks to the presence of large markets, the existence of global producers in Japan and Korea and the possible emergence of new ones from China and India, and thanks to initiatives taken by governments to promote regional integration. It can also be mentioned of an already long experience of regional supply chains. All these elements combine to make Asia the best place for firms to spread automobile fragmented production throughout the whole region to minimise cost and maximise economies of scale.

Our investigation reveals a real but slow progress of such a regionalisation over the period 2001-2016. Trade of parts and components between Northeast Asia, Southeast Asia and South Asia is increasing thanks to the network created by carmakers and component suppliers. But these progress have been slow due to the persistence of protectionism among the three main subregions and within them. Tariff and non-tariff barriers are still high because national governments want to oblige foreign automobile firms to invest and produce locally and also because local producers still ask for a high level of protection especially in South Asia. As a consequence, network trade between the three subregions remains below its potential. The slow progress in the creation of an Asia-wide free trade area, despite the existence of projects like the RCEP does not bode well for the future. An aggravating factor is that the automobile industry being a major contributor to economic growth, it tends to be put on a sensitive list, which means excluded from free trade. One consequence is an unequal process of development of regional trade. ASEAN having dismantled its tariffs barriers is in a position to attract production and trade within ASEAN that would have developed otherwise between India and some ASEAN member state. Agustin and Schroder give examples of such distortion of trade (2014). Another problem is the unequal level of development, the rivalry or even antagonism between countries, for instance within South Asia, which impedes the creation of an integrated subregional market. The combined effect of these multiple factors is a very heterogeneous process of regionalisation. Southeast Asia, Japan and Korea are becoming more tightly integrated to China, while South Asia lags behind. But analysing regional integration through the lens of national borders may in fact be misleading. On the one hand, China appears to substitute Japan as the main carrier of regionalisation. On the other hand, Japan seems to be the main benefactor of this process of regionalisation. According to Jama (op cit), Japanese automobile companies account for around 80% of ASEAN automobile exports and they also account for a good share of Chinese imports and exports of auto components. Japanese firms, and to a certain extent Japan, may be the big winner behind China's rise.

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Analysing Policy Impact in Preparation for Post-Hydrocarbon Era of Brunei Darussalam

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Abstract: Brunei Darussalam (hereafter Brunei) is facing the inevitable fate of the depletion[1] of her oil and gas resources. With limited success in her diversification efforts for the past ecades, unless effective policies are implemented urgently, Brunei's future appears bleak. The extraction of hydrocarbon reserves is highly dependent on both market prices and the availability of technologies to access them. With maturing oil and gas fields and current low hydrocarbon market prices that may deter further investment, this sector is facing many challenges. Being an economy highly dependent on her hydrocarbon revenues, this paper attempts to elucidate such a post-hydrocarbon scenario and a possible policy option to revive some economic growth through productivity growth.

This paper describes the process of preparing a baseline forecast[2] for the period 2012 to 2040 and to implement a specific policy simulation of the Brunei Darussalam economy using BRUGEM, a recursive dynamic, computable general equilibrium (CGE) model based on ORANIG-RD (Horridge 2002). Findings from the policy simulation indicate that in order to generate an additional one per cent growth per annum in real GDP, the overall productivity in the economy has to improve by 1.02 per cent per annum. This finding calls for urgent well-coordinated microeconomic reforms to take place to improve productivity. The government must consider increasing aggregate investment in the economy as the investment in hydrocarbon sector declines. The success of these reforms will much depend on the political will and unwavering commitment from the relevant parties in preparation for a smooth transition into the post-hydrocarbon era.

1. INTRODUCTION

Brunei Darussalam is a small and open economy, with a population in 2015 of just 417,200 (Department of Statistics [DOS] 2016). Economic growth has been reliant on the hydrocarbon sectors since the first oil export in 1932 and first liquefied natural gas (LNG) export in 1972. Owning 0.1 per cent of the world's proven reserves of oil and 0.1 per cent of natural gas (BP 2016), Brunei has used the income from these resources to provide a welfare state with extensive subsidies. Per capita income is high, at B$42,612.70 as of 2015. However, per capita income has declined nearly 19 per cent from 2014 (DOS 2016).

As of 2015, oil and gas made up 93 per cent of Brunei's total exports and provided 77 per cent of the government revenues (DOS 2016). Based on existing levels of proven and recoverable reserves and production rates in 2015, BP plc forecasts that the oil will last for 23.8 years while gas 21.7 years (BP 2016). This implies that by the beginning of 2038, the oil and gas resources will be 'depleted' assuming no new significant finds and no change in extraction rate. In April 2017, there was a new discovery of oil and gas amounting to at least 18 million barrels of oil equivalent in Lumut area[3]. The exact volume was not known but the potential revenue was estimated to be around B$0.9 billion based on the oil and gas prices at that time or around 5.7% of the nominal GDP. This amount is not very significant in terms of adding to the existing reserves to prolong the life of oil and gas resources.

[1] Depletion in this context implies that oil and gas reserves are no longer economically extractable based on available technology
[2] To understand the effects of a policy, we need a reference or "business-as-usual" case as a comparator.

[3] Source: http://borneobulletin.com.bn/bsp-finds-oil-lumut/ (viewed 15 April 2017)

Diversification efforts in Brunei have been slow with limited success despite the various initiatives and National Development Plans in place (Tisdell 1998, Bhaskaran 2010, Lawrey 2010). There are past studies suggesting (Crosby 2007, Bhaskaran 2007) the areas into which Brunei could diversify. Most of the studies are of a qualitative nature and there are limited empirical studies on how these strategies could be carried out and what the economy-wide impacts would be if such policies were implemented.

Although there are no known quantitative studies done in terms of the effectiveness of the diversification efforts, it is the aim of this paper to represent a plausible baseline scenario based on the current policy directions and the government's efforts in channelling resources into specific industrial sectors such as downstream industries to broaden the economic production base. A specific policy simulation to examine the impact of productivity in stimulating the economy is run using BRUGEM, a dynamic CGE model for Brunei Darussalam.

Section 2 discusses the modelling approach while Section 3 will lay out the baseline developed and Section 4 analyses the impact of productivity improvement in a policy simulation and Section 5 concludes.

2. MODELLING APPROACH

BRUGEM is based on the ORANIG-RD model built by Horridge (2002) of the Centre of Policy Studies. It contains the key features of the well-documented comparative static ORANI-G model (Dixon et al. 1982, Horridge 2003) and is extended to include the additional equations required to build a recursive dynamic model. BRUGEM is an alternative version of the dynamic MONASH model which is the successor of the ORANI-G model as described in Dixon and Rimmer (2002).

BRUGEM is a multi-sectoral detailed recursive dynamic model and has forecasting capability that utilises 3 mechanisms: (i) the stock-flow relation between investment and capital stock with one year gestation lag assumed; (ii) a positive relation between investment and the rate of return on capital; and (iii) a lagged adjustment relationship between wage growth and employment (Horridge 2002).

There are five categories of agents: firms, investors, one representative household made up of households themselves and non-profit organisations serving these households (NPISH), the government and a collective foreign demander or the rest of the world to which Brunei provides exports in the model. The model theory includes neoclassical assumptions of the agents' optimizing behaviours where firms minimise the costs in a constant returns to scale production given input prices in order to maximise their revenues, households maximise their utility subject to budget constraint. Investors will allocate their capital based on the expected rates of return where each unit of capital created is a cost-minimising composite of inputs sourced locally and from abroad. It is assumed that the imported variety is an imperfect substitute for the domestic variety of each commodity. This is modelled based on the Armington's constant elasticity of substitution (CES) assumption. The demand for any export commodity is inversely related to its foreign currency export price, therefore any increase in the export price will cause a reduction in demand by foreigners. In general, the market is assumed to be competitive and will clear.

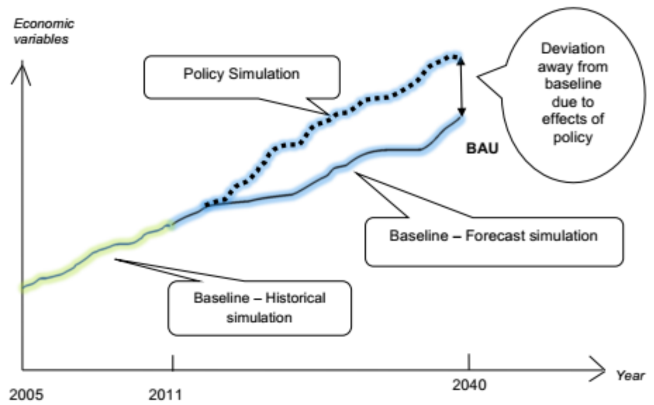
BRUGEM uses a database that has 74 industries and 74 commodities, and three primary factors of production, namely land, labour and capital. BRUGEM is a large model system consisting of a wide variety of linear and non-linear equations. The model is solved with the help of GEMPACK software (Harrison and Pearson 1996) using the Euler solution method for linear approximation, described in more detail by Dixon and Rimmer (2002). The chosen solution method is the Euler-100 steps for a high degree of accuracy. This is ramped up to 200 steps where there is unusually large shock, such as in the year 2015 when the oil price plunged by nearly 45 per cent.

Readers who are interested in more details about the underlying model theory of BRUGEM may refer to Yap (2015) and also the documentation on the ORANIG-RD and MONASH models (Horridge 2002, Dixon and Rimmer 2002). Briefly, we can represent the BRUGEM model as a system of equations describing the economic activities at year t in vector form:

$$F[V(t)] = 0$$

where F is a vector of length m of differentiable functions and $V(t)$ is a vector of length n of prices, quantities, household tastes and other variables for year t .Since there are more variables (n) than the number of equations (m) or $n > m$, we need to define a closure or to specify the combination of values for $n - m$ exogenous variables in order to solve for the remaining m endogenous variables. Dixon and Rimmer (2002) described the four basic choices in choosing the sets of $n - m$ exogenous variables: historical, decomposition, forecasting and policy closures. The choice will depend on the issue to be examined. In this paper, policy simulation is carried out after the 2005 Input-Output (IO) database has been updated using the historical simulation method to the year 2011 as the starting year; followed by forecasting simulation to build a future baseline forecast to be used as the baseline or business-as-usual (BAU) scenario. The impact of the policy simulation is measured by the deviations from the BAU case as shown in Figure 1.

Figure 1: Baseline history, baseline forecast and policy simulation



2.1 Updated input-output (IO) database

The key database required for CGE modelling is derived from the national input-output (IO) tables. The Department of Economic Planning and Development (DEPD) has published two sets of IO tables. One set contains 74 sectors for the year 2005 (DEPD 2011) and another set is the 50-sector IO tables for the year 2010 (DEPD 2014). For the purpose of building a baseline forecast for policy analysis, we need a more updated IO database to have more meaningful analysis. Therefore, these IO tables need to be updated and for calibration purposes, the IO database ideally should represent ‘a typical year’ with no significant structural changes nor unusual shocks to the economy.

The more recent set of published IO tables for the year 2010 has 50 industries and 50 commodities with some aggregation where oil and gas sectors were merged into one sector while agriculture products were disaggregated further. These IO tables of 2010 did not provide sufficient industry details to address the research questions for this paper and also it may contain unusual economic trends such as the impact of Global Financial Crisis of 2008/2009 deeming it unsuitable to be used as a starting point for calibrating the database for BRUGEM. Therefore, the published IO tables for the year 2005 which also has larger industrial dimension is more useful for this purpose and hence used to calibrate the database for BRUGEM.

Using the historical simulation technique, the IO tables of 2005 were updated to the year 2011, the year for which the most key macroeconomic and survey data were available at the time this task was undertaken. In the process of updating, a new infant industry - the methanol and petrochemical industry was created since this was not included in the published IO tables. The rationale for introducing this new industry is that it is one of the government’s initiatives to develop downstream industries for immediate broadening of the industrial base. The methanol industry which was set up in 2006 produced its first exports in mid-2010. It has the advantage of pricing its product competitively due to the readily available and cheap natural gas, which is one of the key intermediate inputs. The petrochemical industry is still in the pipeline with the new development of a large island off Brunei mainland called Pulau Muara Besar (PMB) where there is ongoing work to set up a mega-port, refinery and aromatic cracker plant to produce petroleum products such as gasoline, diesel, Jet A-1 fuel and petrochemical products such as paraxylene and benzene.

Another objective of the historical simulation is to uncover the underlying structural changes such as technological change, productivity, taste or preference change towards imported goods which are typically not easily measurable or observable for the period 2005 to 2011. These results can be useful for analysis.

It is important to have a functional database before carrying out any CGE modelling work. The step-by-step process in the construction of the full IO database used in BRUGEM and how the database was updated to 2011 are detailed out in Yap 2015.

3. Developing the baseline scenario

The updated IO database for 2011 provides a starting point to develop the baseline for the period 2012 to 2040 as the reference scenario to which an alternative scenario can be compared in studying a policy impact. The end point of 2040 is chosen for this baseline as it includes the forecast period when oil and gas resources ‘deplete’. With the use of the dynamic setting of the BRUGEM model, time paths can also be produced for a large number of economic variables.

In the forecast simulation, we incorporate what we know about the future from various sources such as expert forecasts or projections of growth rates in economy, labour force, population and other macro variables, or any sector-specific information such as prices and volumes of oil and gas exports. To accommodate these forecasts, the closure is set up by exogenising these variables and endogenising the naturally exogenous corresponding variables such as the position of domestic export supply curves and macro coefficients such as the average propensity to consume.

3.1 Model closure and data

The baseline or the reference scenario is one that excludes any policy shock and is created based on current policy directions and growth projections of the economy. The structural drivers of economic activities such as productivity and labour force growth, can provide the likely growth trajectories. However, productivity is not readily observable and can be difficult to forecast. Using CGE modelling technique, we can impose values for variables that are observed and allow the model to deduce values for such unobservable drivers. One such example is to use GDP forecast to estimate the underlying overall productivity growth; by exogenising the GDP variable and shocking it with the forecast growth rate.

In developing this baseline, actual macroeconomic data is used where available from the Department of Statistics (DOS) of Brunei Darussalam. Wherever possible, we try to draw upon the work of specialist forecasting organisations and use their forecasts as shocks. Using the GDP growth forecast, the underlying total factor productivity (TFP) can be estimated for this baseline in the forecast closure.

The GDP forecast data for Brunei is obtained from several sources including the World Economic Outlook (WEO) report by International Monetary Fund (IMF) and the Asian Development Bank (ADB). These different published forecasts for economic growth are used to extrapolate to work out the range of economy-wide TFP required to build the baseline forecast. From the result of TFP estimated, a modest 0.5 per cent per annum of underlying productivity growth was used for the baseline forecast for the Brunei economy for 2012 to 2040.

Another set of forecast data available for Brunei are the population and labour force forecasts. In forecast simulation, population and labour force drive the aggregate employment from the supply side of GDP which will affect economic growth. The population and labour force data for the years 2012 to 2030 are obtained from International Labour Organisation (ILO 2013) where the relationship is depicted in Figure 2. The labour force is defined as the total number of people who are willing and able to work. The labour force participation rate is the percentage of the labour force in the population. The unemployment rate is the percentage of people in the labour force who are not employed. Forecast of employed person growth rate that can drive GDP is worked out by using labour participation rate and unemployment rate. Details of the derivation of the relationships between these variables are discussed in Yap (2015).

From 2031 onwards, in the absence of data, it was assumed that both population and labour force will grow at a constant rate of 0.83 per cent per annum with no change in the ratios of labour force (LAB) to working age population (WPOP) and working age population (WPOP) to total population (POP). It is also assumed that there is no change to labour participation rate and the labour force supply rate will grow in tandem with population growth rate after 2030.

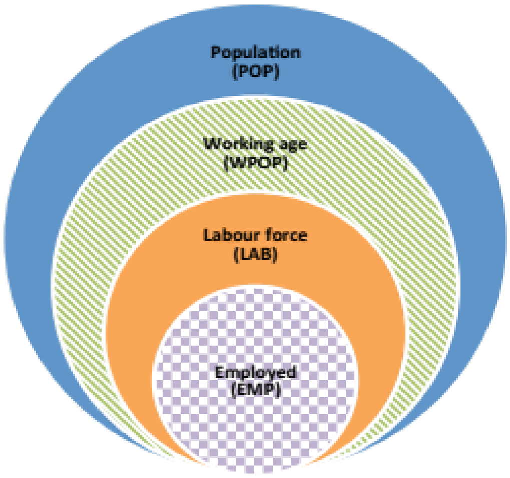


Figure 2: The relationship between population, labour force and employed persons

Sectoral forecasts are also incorporated, especially those relate to the key industries in Brunei of oil and gas. To simulate the depletion in the baseline based on forecast by BP 2016, it was assumed that 5 per cent of oil and gas reserves would be left by the year 2040, compared to 2011. This assumption is based on the fact that there will always be some reserves remaining in the ground that are not extracted entirely due to technological, geological or economic reasons. From an economic point of view, policymakers may wish to leave some in the ground, whether fully extractable or not, due to high extraction costs. An average annual shock of 10 per cent per annum was computed for the simulation period 2012 to 2040 using the formula below, where g is the annual growth (or decline) rate, t is number of years (t=28), and z is the final proportion of the reserve remaining in the ground (z=0.05):

$$g = z^{\frac{1}{t}} - 1$$

The oil and gas price forecasts are obtained from World Bank Commodity Markets Outlook report (World Bank 2017). For these sectoral forecasts, the corresponding sectoral shift variables are endogenised instead. For example, forecasts of oil and gas prices are incorporated by endogenising the price shifter variable of the export demand schedule in the model.

Correspondingly with the gradual depletion in oil and gas reserves, overall aggregate investment in these sectors would also decline over the long term. Some assumptions are also made pertaining to the government accounts in terms of revenues and expenditures where some components were tied with the oil and gas exports where a decline will impact the fiscal capacity. Since Brunei has positive net foreign assets, in the absence of forecast of rate of return on these assets, a conservative 2 per cent annual return is assumed in the baseline.

The baseline scenario also includes some current diversification efforts and policy directions by the Brunei government through stimulation of new industries such as methanol, petrochemicals, manufacturing, pharmaceutical industries while boosting physical infrastructure and connectivity economy-wide via roads, bridges, expansion of existing airport and port facilities, building industrial parks. Since there are no known quantitative studies to track or measure the effects of these efforts, reasonable assumptions will have to be made to produce a baseline forecast.

It is assumed that half of the lost output in dollar values from oil and gas will be eventually replaced by the selected eight industries between 2012 and 2040. Further details on these assumptions are discussed in Yap 2015.

3.2 Underlying assumptions of baseline forecast

In the baseline, the government is assumed to continue its current fiscal policy despite the decline in economic growth and therefore the government spending is regarded as exogenous. Where fiscal deficit is experienced, it is assumed that funds are withdrawn from saved-up reserves to meet the shortfall without jeopardising government spending and on-going national development projects. There is no borrowing by the government so far and International Monetary Fund noted that Brunei has sizable financial assets to help absorb and insulate the economy from negative shocks (IMF 2015). The existence of sovereign wealth fund (SWF) can provide some financial protection. The SWF is managed by the Brunei Investment Agency and there is no published data on the holdings. Brunei's SWF has been estimated to be worth between US$30-$40 billion (Investment Management Institute 2012). Another report[4] suggests that a fund size of US$60-75 billion is more likely with accumulation rate of US$15-20 billion per year during high oil prices. Nevertheless with a small population, this estimated size of SWF is able to weather negative shock for a certain period. A rough estimation using the lower estimate of US$60 billion and half a million population, this SWF can provide about US$120,000 per person. Whether it will be sustainable into many generations to come by enabling the country to live off from the returns alone, without producing much economic activities in the real sector is yet to be seen.

In the light of this, the government demand shift variable which is exogenous, is given a positive shift outwards to offset the decline in oil and gas sectors. Uniform annual shocks on the other seven industries are implemented by exogenising the inventory demand variable with the shifter for stocks endogenised (to remove the link of stocks to domestic output) to simulate the expansion. The chosen numeraire is the exchange rate *phi* defined as Brunei dollar vis-à-vis to world dollar. The economic rationale for this is to reflect that value of the Brunei dollar is exogenously determined with the currency peg to Singapore dollar in place. In the model context, this numeraire acts as a yardstick to which other price variables can be measured against to note the changes.

3.2.1 Baseline scenario with steps taken to offset decline

With the above set up and swaps for the closures in place, the simulation runs successfully till 2040 to produce the following results based on current policy direction. In Figure 3, the overall the real GDP decline by an average of -1.8 per cent per annum.

The government consumption has been stimulated in this baseline as evident in Figure 3. The eight stimulated industries do help but not by very much to kick start the trend of falling exports since the non-oil and gas industries are small to begin with and not all of them are strongly export-orientated except for methanol and petrochemicals industry in the database. The magnitude of aggregate exports decline is high because in this simulation, some amount of oil export is diverted to stimulate the domestic production of refined petroleum products and gas export is cut back to stimulate the domestic methanol and petrochemicals industry. This is based on the assumption that domestically produced oil and gas will be used in the

4 https://openknowledge.worldbank.org/bitstream/handle/10986/12639/705770ESW0P1110NAL00310July020080v2.txt?sequence=2 (viewed 23/6/15)

production of these two categories of commodities since they are readily available. This is carried out by a small negative shock to the export demand shift variable for oil and gas.

In the short run, the aggregate investment falls as the main oil and gas sectors which made up total of 80 per cent of total investment and 80 per cent of total capital stock in the database decline. The aggregate investment recovers gradually in the long run as shown in Figure 3.

The temporary rise in private consumption is observed in 2013 (Figure 3) due to the terms of trade effect, coupled with real appreciation (negative real devaluation), given the high oil and gas prices observed that year (Figure 4). In Figure 4, the real devaluation or the real exchange rate is the ratio of the import price index at CIF[5] prices to the GDP deflator, which measures the changes in domestic prices in relation to world prices, using CIF import prices as a proxy for world prices. A positive value in real devaluation indicates that the domestically produced goods are relatively cheaper in the world market and a negative value is real appreciation of the currency.

Figure 3: Real GDP and other expenditure components

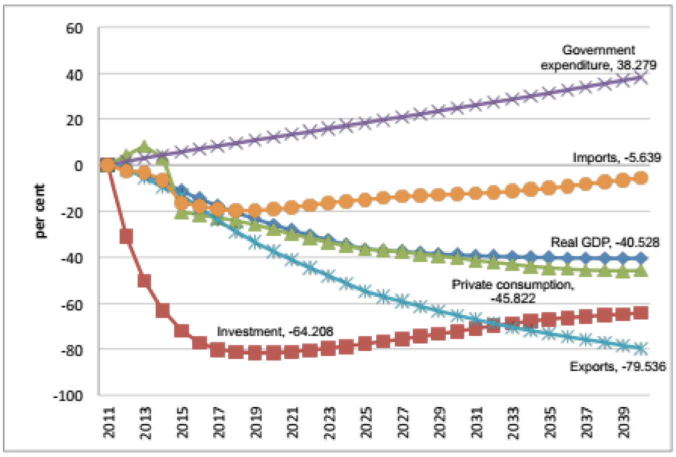
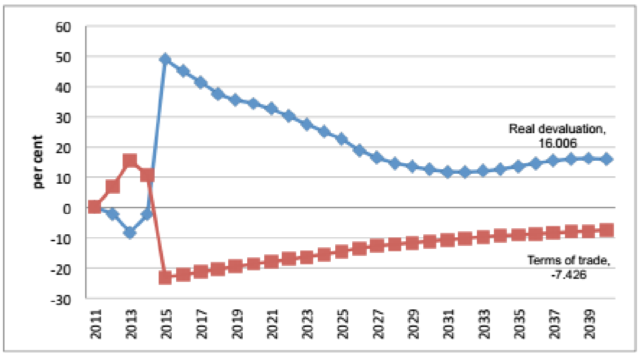


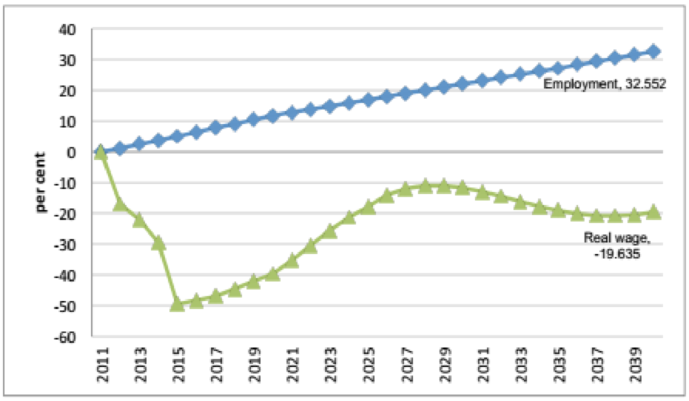
Figure 4: Real devaluation and terms of trade



The employment increases in the long run with the rise in population (Figure 5) since the unemployment is kept under control. In the case of Brunei, it is assumed that in the long-run, the non-accelerating inflation rate of unemployment (NAIRU) is fixed at 5 per cent being the natural rate of unemployment. NAIRU represents the equilibrium state between the economy and the labour market, a point at which inflation is not expected to rise. To accommodate the growth in aggregate employment, the real wage would fall.

The four stimulated industries - building construction, specialised construction activities, architectural engineering activities and public administrative services are also labour intensive and will be requiring more labour as they expand.

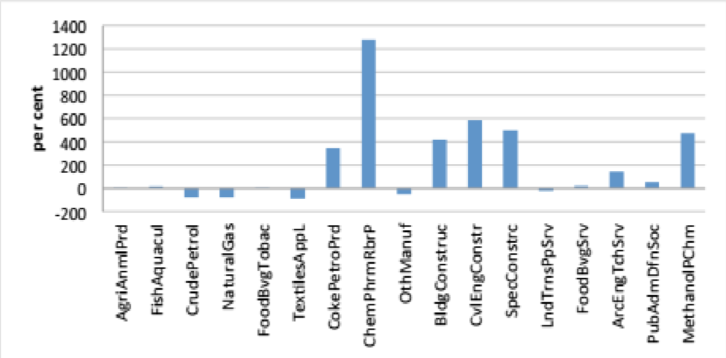
Figure 5: Aggregate employment and real wage



The real devaluation has benefited industries that export such as methanol and petrochemicals, chemicals and pharmaceutical products. With the fall in real wage, labour intensive industries such as agriculture, animal products, fishery and aquaculture, food and beverages, architectural engineering industries will benefit while capital intensive industries will be adversely affected (Figure 6).

[5] In trade terms, CIF. stands for cost, insurance and freight

Figure 6: Selected industrial outputs in 2040



4. Policy simulation of productivity improvement

From the results of the historical simulation in Section 2.1 (explained in details in Yap 2015), it has also been identified that economic growth is linked to productivity. Productivity is widely recognised as one of the key drivers for economic growth in the literature (Jorgenson (1991, p. 21) provides a list of references), including the Solow growth model where it is predicted that technological progress is necessary for sustainable increase in living standard. Therefore one of the policy options that the government is emphasising is to enhance productivity. This intention was explicitly stated in the Tenth National Development Plan launched in April 2012 (Haji Apong 2013, p.14).

The government has been working on several initiatives to improve productivity especially to the non-energy sector (Shahminan 2012, Too 2012a). The fibre-to-the- home broadband initiative, one of the largest projects under the Tenth National Development Plan, targets to achieve 85 per cent coverage by 2017 (Too 2012b). By having better information and communications technology (ICT) infrastructure, efficiency can be improved. Other efforts include building better infrastructure such as roads and bridges contribute to greater connectivity and time-saving; and exploring more capital intensive and high value-add types of industries; and investing in human resources for skilled workers and increasing research activities with high commercial values. Some initiatives target technological progress while others seek to improve the efficiency aspect. There are also general measures to provide an enabling environment for these changes to take place.

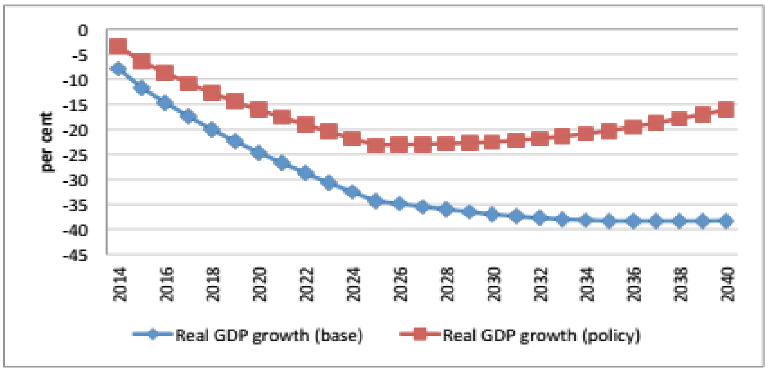
One such measure is the improvement in technological change through the infrastructure for the financial sector in Brunei. Autoriti Monetari Brunei Darussalam (AMBD), Brunei's monetary authority, has implemented a series of projects to modernise the national Payment and Settlement System (PSS). The first Real Time Gross Settlement System (RTGS) was launched on 7 November 2014 to enable safe and real-time large-value interbank fund transfer to be carried out between financial institutions (Autoriti Monetari Brunei Darussalam [AMBD] 2014). This helps to mitigate settlement risk and improve liquidity management. The manual cheque clearing house was automated in 2016. The Automated Clearing House (ACH) project enables the cheques to clear and funds to be made available to customers from previously four days to three days, representing 25 per cent improvement (Koo 2014). In March 2017, a cost-effective and efficient way of depositing money by way of direct credit is introduced to the ACH system. This offers a safer and faster way for funds to reach beneficiary's bank account compared to physical cheques. New electronic payment instruments will be expected to be introduced in near future to encourage more paperless transactions to improve efficiency and hence productivity. A country with a modern, reliable and efficient PSS to cater for the growth of its financial market will be an important consideration to businessmen and investors in setting up businesses or bringing more FDI to Brunei.

4.1 Model closure

The policy closure to implement this simulation is similar to decomposition closure (Dixon and Rimmer 2002) where naturally endogenous variables such as macro variables like GDP, aggregate investment, aggregate consumption, are endogenous and are allowed to respond to the policy introduced. Similarly, naturally exogenous variables such as average propensity to consume, taste or preference for imports and technical change remain exogenous. So if there is no policy shock, a policy simulation should generate the same results as the baseline forecast in forecast simulation reported in Section 3.2.1. Therefore any differences in the solutions between policy simulation and baseline forecast are due to the policy shocks implemented in the simulation.

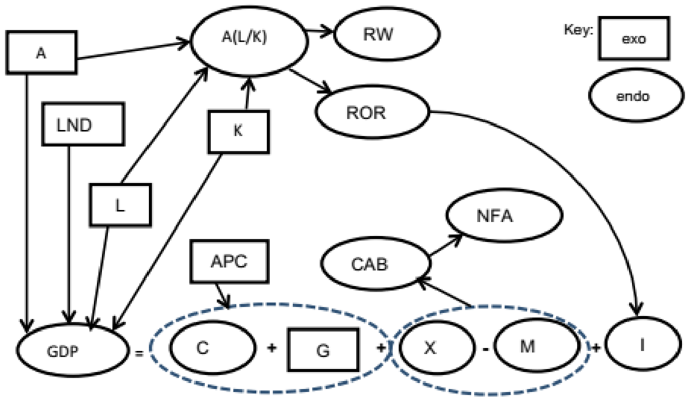
Since there is no measurement of the expected overall productivity that can be achieved from the on-going microeconomic activities and reforms, a calibrated all-factor augmenting technological progress shock is implemented to target a modest real GDP growth of additional one per cent per annum to the baseline forecast for the economy. This value can be adjusted later if there is more information or data to suggest an alternative productivity growth rate. In the baseline, real GDP falls at an average annual rate of 1.8 per cent. Thus in the policy case where additional one per cent real GDP growth is imposed, the real GDP falls at a lower average annual rate of 0.8 per cent for the whole period from 2014-2040. Figure 7 shows the improvement brought about by productivity with steadily increasing deviation in real GDP growth from the baseline.

Figure 7: Base case and policy paths of real GDP growth (cumulative per cent)



In terms of closure, the aggregate employment was tied down, assuming the real wage was sufficiently flexible. The real wage was made endogenous with the aggregate employment exogenised as in a typical long run closure. This is also consistent with the theory of NAIRU. The government expenditure is set exogenously as explained in Section 3.2. Both trade balance and private consumption were determined as residuals in this set up, with most of the export side tied down due to the specific oil and gas shocks (the main exports) implemented. This is shown in Figure 8.

Figure 8: Year-on-year dynamic policy closure for productivity shock



The supply side of the GDP is driven by labour (L), capital (K), land (LND) and also productivity (A). In this policy simulation, the aggregate employment (L) for the model is tied down, assuming the real wage (RW) is sufficiently flexible. Real wage (RW) is made endogenous with the aggregate employment (L) exogenised as in a typical long run closure and consistent with the theory of NAIRU. Capital (K) is also exogenous in this year-on-year closure while the required rate of return on capital (ROR) is endogenous and will be determined by the world interest rate in the long run. This will influence both the aggregate capital stocks and also investment (I). The government expenditure (G) is set exogenously as explained earlier. Both trade balance (X-M) and private consumption (C) are determined as residuals in this set up where most of the export (X) side is tied down due to the specific oil and gas shocks (the main exports) implemented. The current account balance (CAB) is driven by the trade balance and this will affect the net foreign assets (NFA) in the model.

4.2 Simulation results

All-factor augmenting productivity improvement helps the overall economy (Figure 9) where all expenditure components show an increase except for the aggregate investment. The aggregate investment will first fall as the key oil and gas sectors falter away and eventually recovers and returns to baseline in the longer run with more capital built up as investment recovers.

Figure 9: Real GDP and its components (percentage deviation from the baseline forecast)

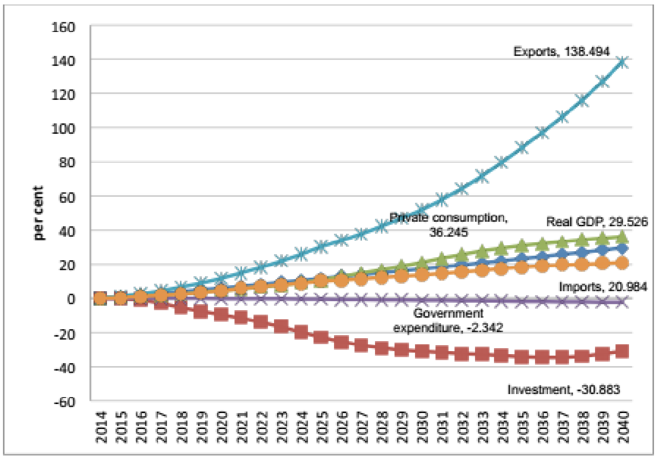


Figure 10 shows percentage deviations in the key labour market variables – aggregate employment and the real wage rate. By the end of the period, the real wage rate is down 86 per cent relative to its baseline level, while employment does not change by assumption. Over the period, in the policy simulation the real wage rate falls at an average annual rate of 6.5 per cent. The reason for the fall in the real wage rate, was due to a compositional effect. The same effect persists through the forecast period, since real government consumption is held at its baseline level. Hence, the real wage contraction persists, and indeed intensifies, as the technological improvements continue.

Why does real wage fall with productivity improvement? This is due to the strong compositional effect arising from fixing demand and hence output of the government sector. In the model, the government sector employs about 50 per cent of the total labour force which indicates a flat industry supply schedule given the high labour to capital ratio. With exogenous government consumption, its production is severely limited and unable to respond much to technological improvement given its almost infinitely inelastic demand schedule.

As the real wage rate falls, so does the real cost of labour. This encourages producers to substitute labour for capital. Since employment is fixed, capital must fall. Figure 11 shows percentage deviations in real GDP, employment and capital. By 2040, real GDP is up 29.5 per cent, employment is unchanged and capital is down 19.5 per cent. As can be seen, the only positive contributor to the increase in real GDP is technological progress, which proceeds at a rate necessary to increase annual growth in real GDP by one per cent relative to its rate of growth in the baseline.

Figure 10: Labour market (percentage deviation from the baseline forecast)

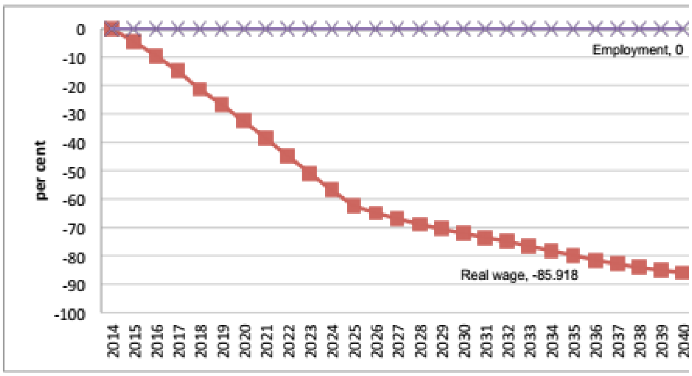


Figure 11: Real GDP and factor inputs (percentage of deviation from the baseline forecast)

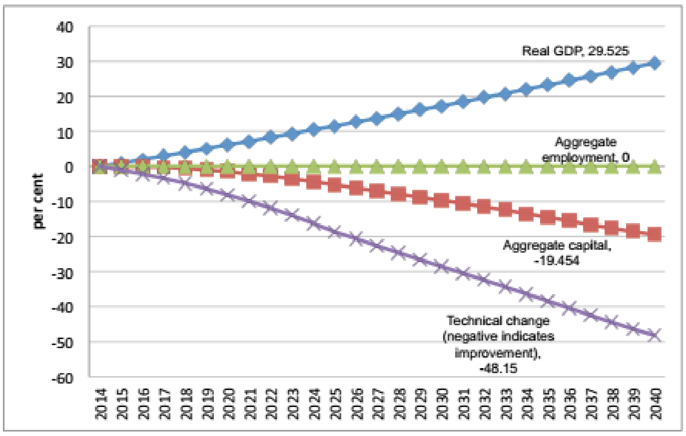


Figure 12 shows a comparison between the baseline and policy paths for the balance on current account (CAB) and Brunei's stock of foreign assets (NFA). In Figure 13, the same information is provided for the government's fiscal balance. At the time of writing, Brunei has no foreign debt and has a sizeable pool of net foreign assets (NFA, excluding SWF). It was assumed that these assets would be well managed to generate a conservative return of 2 per cent per annum. NFA will accumulate over time and help offset the current account deficit brought about by the excess of imports over exports. The current account balance in the policy simulation has improved relative to its baseline value.

In the baseline, as oil and gas deplete, the balance on current account will weaken and NFA will start to fall (see Figure 13). The government will run into budget deficits very quickly as income from oil and gas declines (see Figure 13). With the improvement in productivity, Brunei could continue to enjoy a current account surplus and the build up its NFA, as well as a budget surplus for the government.

Figure 12: Policy results for current account balance and net foreign assets

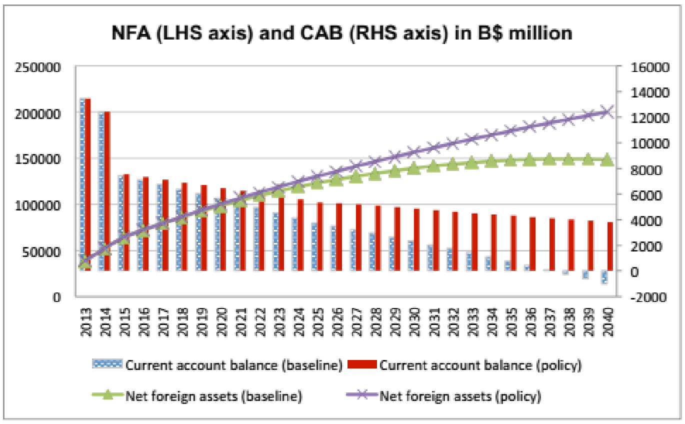
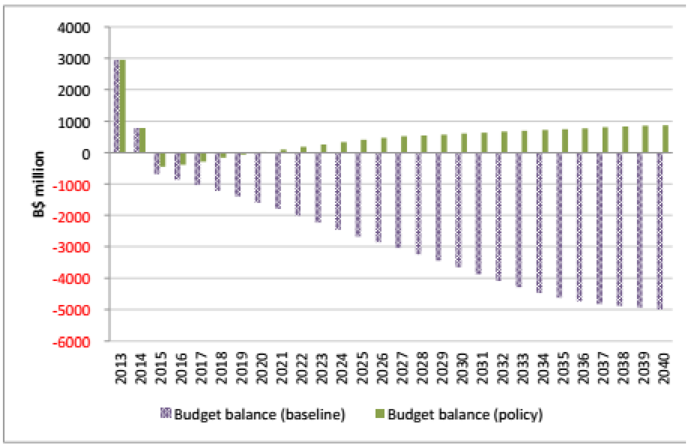


Figure 13: Government budget balance pre-policy and policy scenario with productivity shock

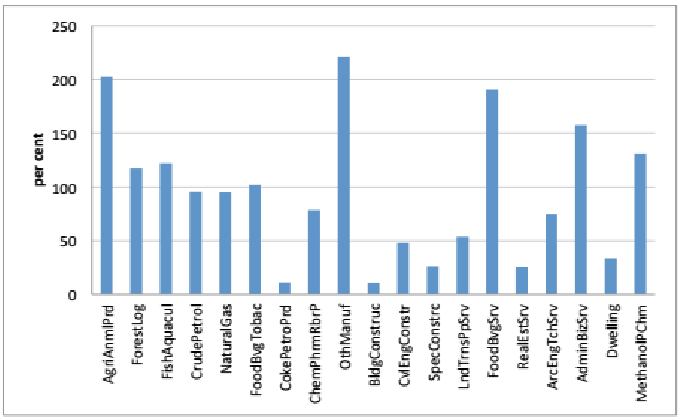


At the industry level, in the long run, sectoral outputs increased with the productivity improvement (see Figure 14). However, it was found that not all industries would benefit equally, depending on the factor intensity and sale structure. The forecast showed some increased activity levels for the oil and gas industries in 2040 and this had to be qualified. This increased activity was due to the lower depletion rate implemented from 2026 onwards. This implies that the oil and gas sectors would still benefit from the productivity shock and therefore deliver a positive deviation from the baseline.

The better performing industries are those that are relatively more labour intensive, such as food and beverage, office administrative activities, agriculture, animal products, fisheries and aquaculture, furniture and other manufacturing industries. This is because labour is cheaper than capital as a primary factor input into production. Those who sell mainly to households also benefit, since private consumption (see Figure 9) increases with the productivity improvement.

Industries that are export-orientated will benefit from real devaluation of currency. Besides oil and gas, the land transport and transport via pipeline services industry (the fourth largest industry in terms of market sale share), and the methanol industry are amongst the better performers (Figure 14).

Figure 14: Sectoral outputs under improved productivity in 2040 (percentage deviation from the baseline forecast)



5. Conclusions

From the policy simulation results in Section 4, it is clear that all factor-augmenting technical change can have positive effect on the economic growth and aggregate consumption. It is found that in order to create one per cent of real GDP growth per annum on top of the baseline forecast, 1.02 per cent of annual productivity growth will be required. This productivity growth leads to the improvement for real GDP per person by 0.99 per cent per annum.

Although imperfect, the GDP per capita growth rate is used as a measure of welfare. Despite the overall decline due to the depletion of the hydrocarbon sectors, it is observed that the percentage change in GDP per capita can be significantly improved in the long run with productivity growth in the simulation results.

In view of this, the policy makers should continue to implement microeconomic reforms across the board and to keep track of the progress of these initiatives that can improve productivity because what gets measured, will be improved.

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Real Income and Cyclical Convergence in Various Groups of Countries

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Abstract: This paper employs hidden Markov models and the Viterbi path to analyze the process of real convergence. Such an approach combines the analysis of cyclical and income-level convergence. Twelve macroeconomic variables in the sample of 28 EU countries observed in the 1995-2016 period are within the scope of the study. The results indicate, among others, the existence of real convergence of Poland toward the remaining EU countries in terms of the levels of GDP per capita at PPP and GDP growth rates, with a short-run period of divergence during the global crisis.

Keywords: catching-up; convergence; hidden Markov model; European Union; Viterbi path

Introduction

Cyclical convergence and income-level convergence are usually tested separately in empirical studies. However, these are interrelated phenomena because business cycles are very closely linked with economic growth. That is why in order to obtain a full picture of output fluctuations and dynamics, it is necessary to apply a tool which would allow to test and assess simultaneously both cyclical and income-level convergence. Hidden Markov models (HMM) are used as such. The application of the method that combines the HMM and the Viterbi path in the analysis of real convergence is the main value added of the paper. The holistic approach involves the use of the Baum-Welch algorithm, Viterbi algorithm, and Monte Carlo simulations, which fills in the gap existing in the literature.

In the study, the procedure based on HMM is applied in order to assess the character and the rate of real convergence in Europe. While applied to the GDP time series, this approach encompasses both the cyclical and income-level convergence. The results allow us to verify the conformity of business cycles between various economies as well as the equalization of income levels between countries. Additionally, time series of some other macroeconomic variables are analyzed as a kind of robustness check of the proposed procedure as a tool to analyze the dynamics of different macroeconomic factors.

The analysis covers the 28 EU countries and the 1995-2016 period. The main results are plotted for Poland (its convergence toward the other 27 EU countries). The main results for Germany are also reported in the form of a robustness check.

The paper is organized as follows. After the introduction, the theoretical background of real convergence is described. The concept of the HMM and the Viterbi path are discussed in the next section. The macroeconomic variables included in the study and the method of estimation are then presented, which are followed by the empirical results. The last section concludes.

Real Convergence

Various ways of defining the process of convergence as well as many methods of testing a particular convergence hypothesis are proposed in the literature (see, e.g., Islam, 2003) In general, nominal and real convergence are the two types that can be outlined. The nominal convergence means the tendency of nominal variables, like price levels, interest rates, or exchange rates to level up. The real convergence refers to variables given in real terms (mainly real output or income) and can be divided into cyclical convergence and income-level convergence. The cyclical convergence means the tendency of different economies toward the conformity of business cycles while the income-level convergence means the equalization of the GDP per capita levels.

This general classification has been extended in a number of ways, including the types and definitions of convergence, as well as the methods of verifying of a given concept of convergence. For example, the new concept of growth cycle has been developed to analyze cyclical fluctuations of many Western economies where GDP has not dropped for many years (see, e.g., Zarnowitz and

Ozyildirim, 2006). Unlike the classical business cycle where recession means the absolute fall in GDP, if the growth cyclicality is observed, the GDP rises during both the contractionary and the expansionary phase. However, during the contractionary period the growth rate of GDP is less than the trend, while in the expansionary period the GDP growth rate exceeds the long term trend. Various definitions of cyclical fluctuations, as well as a variety of methods to extract the trend and to find peaks and troughs in business activity, implied that there are many quantitative methods to cope with output fluctuations and cyclical conformity. Furthermore, there is still much room to develop new methods and concepts, including those based on the HMM approach.

Similarly, there is no unique definition of income-level convergence. The existence of β convergence means that less developed countries (with lower GDP per capita) grow faster than the more developed ones. On the other hand, the σ convergence is observed when the differences of the income levels between countries (measured e.g. by the standard deviation of the logarithm of the GDP per capita levels) decrease over time (Barro and Sala-i-Martin, 2003).

Hidden Markov Models (HMM)

A number of methods of analyzing convergence have been developed. Some of them have purely mathematical background, others involve the expert insight. In this paper, the HMM is used. Its concept is often identified with the name of Hamilton (1989), however it was present in the literature at least since the 60s of the previous century, long before the first articles by Hamilton. For the comprehensive description and characteristics of these models, one can refer to Cappé et al. (2005), while in this paper we discuss very briefly only those of the main definitions and ideas behind the HMM models, Markov chains (MC) and Viterbi paths, which are used extensively in the following sections of the article. We concentrate rather on the idea behind those terms, restricting to basic definitions and notation necessary to understand the proposed method of analysis of the real convergence.

Let $\{X_k, Y_k\}_{k\geq 0}$ be a discrete stochastic process satisfying the following conditions:

- the unobservable process $\{X_t\}_{t\geq 0}$ is a homogenous MC with a finite state space S,
- conditionally on the process $\{X_t\}_{t\geq 0}$ the observations $\{Y_t\}_{t\geq 0}$ are independent, and for each t the conditional distribution of Y_t depends only on X_t.

The $\{X_k, Y_k\}_{k\geq 0}$ which fulfills the above conditions is referred to as a Hidden Markov Model (HMM). In macroeconomic applications Y_t often has univariate or multivariate Gaussian distribution. In that we refer to a resulting HMM as to the normal HMM.

HMM are widely used in the areas, where the pattern recognition is explored. Therefore, the most common use of HMM is in speech or handwriting recognition, as well as in the cases when gesture or voice patterns need to be obtained. HMM is also a basic tool in bioinformatics, for example in the DNA sequencing process. In macroeconomics applying HMM is one of the methods of business cycles synchronization analysis and turning points identification. This approach, however, should be treated rather as a whole class of models, due to the possibility of choosing a form of an observable and unobservable component. For this reason, a huge variety of types of models were being under study over the years – see Hamilton (1994) or Koskinen and Oeller (2004) for a comprehensive review.

Unlike the classical Markov models, where all states are visible and the Markov model is defined only by the transition probabilities, in HMM the states are unobservable and need to be calculated based on another observable time series. Therefore, besides the transition probabilities, the parameters of the probability distribution related to each state are also present. The problem which needs to be solved is to find the unobservable path of states. The deterministic algorithm of finding the parameters of the HMM which is used was described by Baum et al. (1970) and is known under the name of the Baum-Welch algorithm. However, knowing the model parameters does not solve the stated problem as the state of an unobservable MC still remains to be estimated. There are few alternatives of performing this estimation. One of them are the smoothed probabilities given by Hamilton (1994). Second are the filtered probabilities, see Chauvet and Hamilton (2005) or Harding and Pagan (2002). In both those approaches, the most likely estimation of the state of the hidden MC at the given moment is chosen on the basis of those probabilities. So the states on the path of MC are estimated locally, which could be inefficient. However, an alternative, which makes use of the global decoding exists: instead of a single point of time, the whole period covered by the analysis is taken under consideration. The path of states being the result of this approach is called the Viterbi path. Elements of the Viterbi path are calculated with the use of the Viterbi algorithm, descried by Viterbi (1967).

The Viterbi algorithm together with the Baum-Welch algorithm provide the deterministic procedure of transforming the time series into the most probable path of states. Unfortunately, the results strongly depend on the initial values and can be far from optimal. Therefore, to increase the chance of finding the globally optimal solution, the computations are performed repeatedly with the same set of data and different initial values. This approach is usually referred to as Monte Carlo simulations. Depending on a number of factors (Bernardelli, 2013), computation can be quite time-consuming.

In this paper, due to the length of the input time series, only the HMMs with two-element state space are considered. Therefore the state space has the form of $S=\{0,1\}$ and the interpretation of states is as follows: 0 is associated with the periods of relatively good conditions and 1 is associated with a worse situation. We restrict ourselves to the analysis of normal HMM. Thus the observable component Y_t, which corresponds to economic time series under the analysis, must satisfy the conditions

$$Y_n|_{X_n=0} \sim N(\mu_0,\sigma_0) \text{ and } Y_n|_{X_n=1} \sim N(\mu_1,\sigma_1).(1)$$

We additionally assume that $\mu_0 < \mu_1$. to have the same order of states in each considered case (state 1 is associated with a greater mean value), which in turn allows to compare Viterbi paths for different pairs of countries.

Theoretically, the state space could be extended to the case of more than two states. However, larger state space would obviously involve longer computation time and often cause problems with the numerical stability of results. The combination of the Viterbi path and HMM with three and four states are rather uncommon in the macroeconomic literature with a series of articles by Bernardelli and Dędys in 2012 (e.g. Bernardelli and Dędys, 2012) serving as an exemption. The authors explore the discussed method in order to describe the business cycle synchronization and identify turning points. However, the application of the HMM method and the Viterbi path to the analysis of real convergence is absent in the literature.

Data and method of estimation

The empirical analysis includes 12 macroeconomic variables:

a) GDP per capita at purchasing power parity (PPP, constant 2011 international $) [gdppc_ppp],
b) growth rate of total real GDP (%) [g_gdp],
c) CPI inflation (%) [inf],
d) unemployment rate (%) [une],
e) household final consumption expenditure (constant 2010 US$) [cons_usd],
f) household final consumption expenditure growth rate (%) [cons_g],
g) government final consumption expenditure (constant 2010 US$) [gov_usd],
h) government final consumption expenditure growth rate (%) [gov_g],
i) foreign trade balance (current US$) [nx_usd],
j) foreign trade balance (% of GDP) [nx_gdp],
k) domestic credit provided by financial sector (% of GDP) [cred_byfin],
l) bank nonperforming loans (% of total gross loans) [nonp_loans].

The variables are taken from the International Monetary Fund and World Bank databases (IMF, 2017; World Bank, 2017).

The first two variables represent the level of GDP per capita at PPP and the real GDP growth rate. These are the two basic variables that are used in the studies on real convergence. The results for these two variables allow us to assess the cyclical and income-level convergence on the basis of the HMM analysis.

Given that one of the aims of this study is to check the appropriateness of the HMM algorithm in the analysis of the dynamics of various macroeconomic variables, the list has been extended by a few other time series. Firstly, both inflation and unemployment are included as important variables from the point of view of the wellbeing of the society and the standard of living. Variables which are components of the GDP (household consumption, government expenditure, and net exports) are also analyzed. Those are considered both in levels or as growth rates (except net exports which are taken as the level and percentage of GDP). Finally, the two variables that represent the stability and development of the financial sector are included. Those are very important in particular in the period which followed the global crisis and the crisis in the euro area when financial turbulences largely influenced the real economy.

The analysis covers the 28 EU countries observed in the 1995-2016 period. In each of the cases the series are annual. In the case of missing observations, the calculations include a shorter period or lower number of countries.

This study focuses on Poland. That is why the detailed results for Poland against the remaining EU countries are presented throughout the major part of the paper. It means that the results show – for each individual variable – the comparison of Poland with each of the 27 remaining EU countries (in the figures – as average values).

For comparison purposes and as a form of robustness check of the proposed method at the end of the paper selected results for Germany are included. Germany is the biggest economy in the EU. In 2016, its GDP constituted 21.2% of the EU28's GDP at current exchange rates and 20.0% of the EU28's GDP at purchasing power parity (European Commission, 2016). Hence, it is interesting to compare the Viterbi path for Poland's GDP with the analogous path for German GDP. The details of the applied method of the analysis are the same both in the case in Poland and Germany and are provided in detail in the remaining part of this section. Germany is compared with each of the other 27 EU countries.

The procedure used in the empirical analysis explores the concept HMM and Viterbi path described in the previous section. In order to get the reliable results, Monte Carlo simulations are used. The initial values for the Baum-Welch algorithm are chosen randomly with the use of independent and identically distributed draws from the univariate distribution. The number of draws used for parameters estimation of the time series being under study was set to 1000. In order to choose the best model, three criteria are taken into account:

- Akaike's information criterion (AIC),
- Bayesian information criterion (BIC),
- the log likelihood value.

The procedure used in the analysis can be described in the following steps (Poland is used as an example for the clarity of description).

1. For each of the 12 variables and for each of the 27 EU countries (all except Poland), the time series of differences are constructed as

   $$\tilde{v}_t^C = v_t^{PL} - v_t^C, \quad (2)$$

   where t = 1995, 1996, …, 2016 and C refers to one of the EU countries.

2. The estimation of the HMM parameters is performed with the use of the Baum-Welch algorithm. The resulting estimates are used to find the Viterbi path. State 0 on that path identifies a year of greater similarity in terms of the variable under analysis, whereas state 1 indicates a divergence between countries (Poland and the country C).

3. For each year, averages of the states of Viterbi paths for all countries for the given variable are calculated. The value of 0 means perfect convergence while the year when the average equals 1 means the period of undisputable divergence between Poland and other EU countries.

This kind of approach allows to both analyse a pair of countries separately, as well as to consider the real convergence between the chosen country and the group of other countries jointly. Plots presented in the figures and summaries in the tables visualize both of those possibilities.

The discussed procedure is followed for the cases of Poland and Germany, however, it may be used to determine the convergence of the other countries as well. This study is the initial application of the HMM and the Viterbi path and, for the sake of conciseness, none of the advanced algorithms in calculating reference values were employed. In further studies, it is possible to extend the analysis by considering weighted averages or assessing convergence toward certain subgroups of countries (their clusters).

Empirical analysis

The results of the empirical analysis for Poland are presented in Figures 1-12 and Tables 1-2. The figures show the averages of the states of the Viterbi paths calculated with the use of the estimated parameters of the HMM for the differences between the annual values of a given variable for Poland and each of the other EU countries. Lower values (closer to 0) indicate the existence of real convergence (greater similarity in terms of a given variable) while higher values (closer to 1) – real divergence (bigger differences of a given variable).

The detailed results in the form of the states of the Viterbi path are given in Tables 1 and 2. For a given year, the HMM parameters were estimated for the differences in the values between Poland and each other EU country separately. The value of 1 is assigned when the calculated probabilities for being in certain state – on the basis of the Viterbi algorithm – are relatively large as compared with the other years in the whole period. On the other hand, when the difference is relatively low, a 0 value is assigned. Hence, value 1 indicates real divergence (bigger differences between countries) while value 0 can be interpreted as a real convergence (greater similarity). The functions plotted in Figures 1 and 2 are the arithmetic averages of the values provided in the respective columns of Tables 1 and 2.

Figure 1 shows the Viterbi path of the GDP per capita at PPP. The results indicate a clear-cut cyclical convergence before the beginning of the global crisis, that is from 1995 to 2008. In 2009, the differences between the GDP per capita at PPP in Poland and the other EU countries increased. This was caused by the economic and financial crisis. The global crisis led to the recession in all the EU countries, except Poland, which resulted in the significant change of the earlier convergence trends. This tendency is visible on the basis of the HMM method – the average values of the states of Viterbi paths rose in 2009 and 2010, indicating real divergence. Since 2011, GDP per capita levels between Poland and the other EU countries have converged in terms of the Viterbi path but the process has not been so intensive as in the first part of the analyzed period.

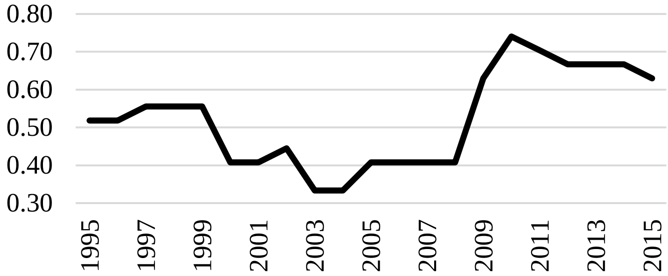

Figure 1. Cyclical convergence of GDP per capita at PPP [gdppc_ppp] between Poland and the other EU countries

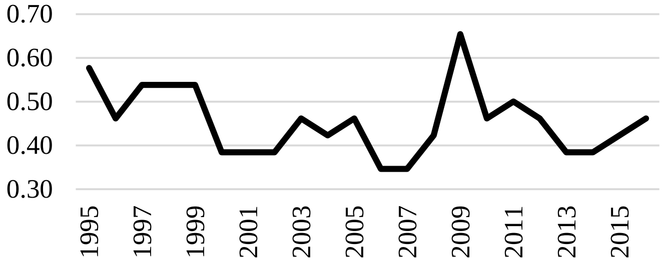

Figure 2. Cyclical convergence of GDP growth rates [g_gdp] between Poland and the other EU countries

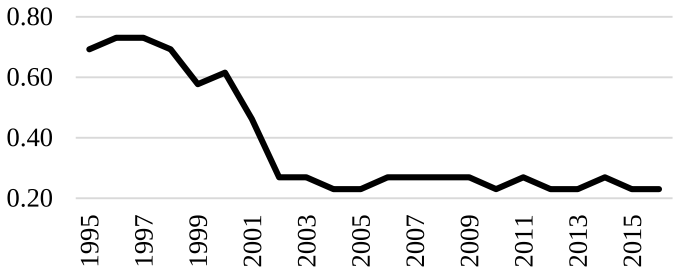

Figure 3. Cyclical convergence of inflation rates [inf] between Poland and the other EU countries

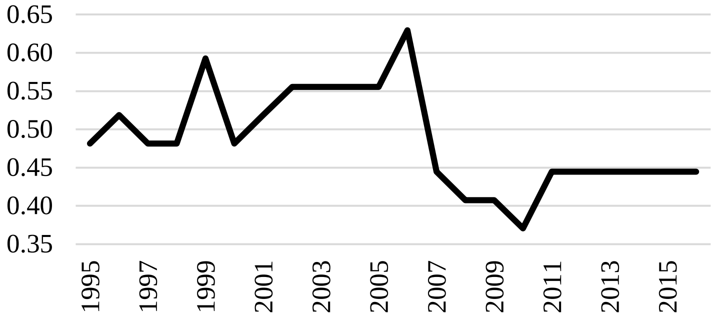

Figure 4. Cyclical convergence of unemployment rates [une] between Poland and the other EU countries

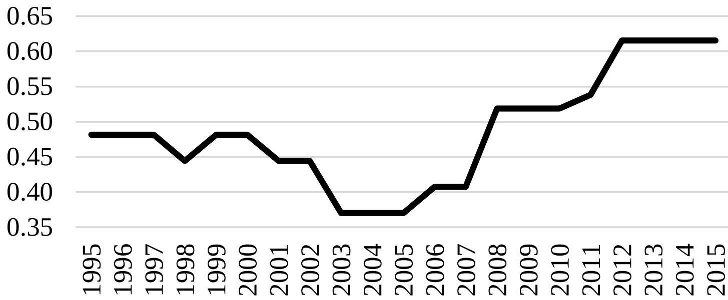

Figure 5. Cyclical convergence of household consumption [cons_usd] between Poland and the other EU countries

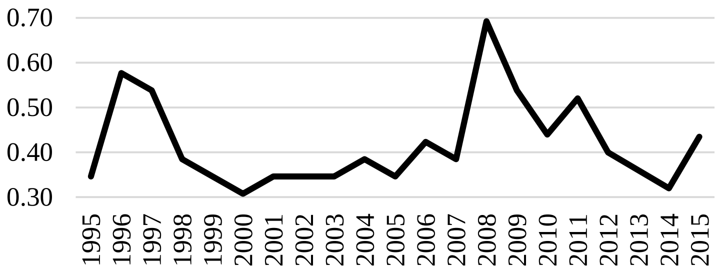

Figure 6. Cyclical convergence of household consumption growth rates [cons_g] between Poland and the other EU countries

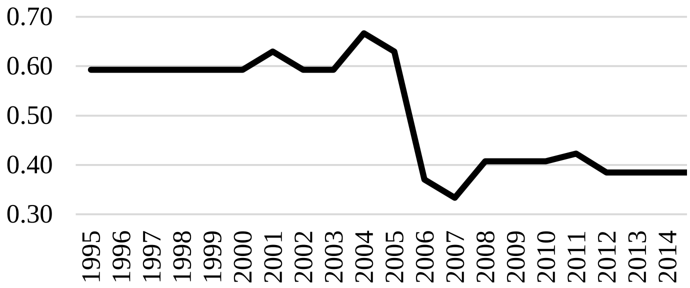

Figure 7. Cyclical convergence of government consumption [gov_usd] between Poland and the other EU countries

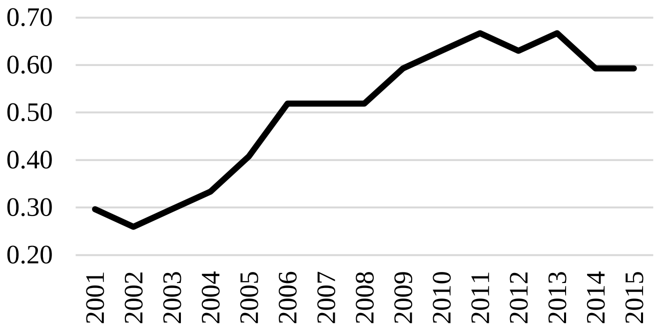

Figure 11. Cyclical convergence of domestic credit provided by financial sector [cred_byfin] between Poland and the other EU countries

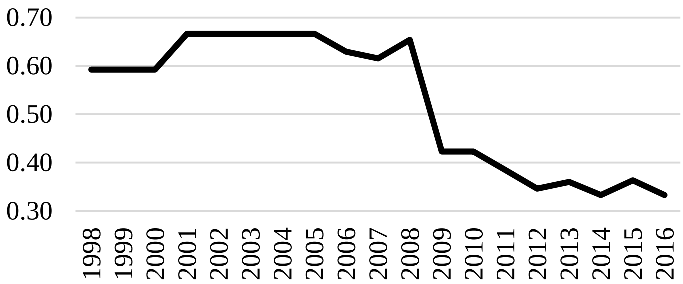

Figure 12. Cyclical convergence of bank nonperforming loans [nonp_loans] between Poland and the other EU countries

Table 1. Viterbi paths for GDP per capita at PPP [gdppc_ppp] between Poland and the individual EU countries

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Western Europe																					
AT	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
BE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
DK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
FI	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
FR	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0
DE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
GR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
IE	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0
IT	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1
LU	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NL	1	1	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
PT	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
ES	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
SE	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
UK	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
Central-Eastern Europe																					
BG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
HR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
CZ	0	0	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1
EE	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1
HU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
LV	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1	1
LT	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
SK	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1
SI	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
CY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
MT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1

Note: 0 indicates convergence in differences; 1 indicates a divergence in differences.

These results are in line with some other studies that confirm the existence of divergence tendencies in Europe in the last years (see, e.g., Mucha, 2012; Staňisić, 2012; Borsi and Metiu, 2013; Monfort, Cuestas, and Ordóñez, 2013). For example, the study by Matkowski et al. (2016) showed – with the use of the σ convergence concept – that in 2009 and 2010, income differences among the 26 EU countries increased.

Figure 2 illustrates the results for GDP growth rates. The curve plotted in Figure 2 shows a sharp increase in the values of averages of the states of the Viterbi paths in the year 2009. This means that a large rise in differences between GDP growth rates in Poland and the other EU countries was observed during the crisis. It was caused by the fact that in 2009 Poland was the only country that recorded the increase in GDP while all the other EU countries noted a recession. This atypical behavior which consisted in the difference between Poland and the remaining EU countries was confirmed by the results attained from the proposed procedure based on the HMM as reflected by the increase in the average values of the states of Viterbi paths for the pair of Poland and other EU countries for 2009.

Table 2. Viterbi paths for GDP growth rates [g_gdp] between Poland and the individual EU countries

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Western Europe																						
AT	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
BE	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0
DK	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0
FR	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	1	1	1	1	1	1	1
DE	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1
GR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0
IE	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
IT	1	1	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LU	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
NL	1	1	1	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PT	1	1	1	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ES	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1
SE	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1
UK	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1
Central-Eastern Europe																						
BG	1	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
HR	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CZ	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
EE	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
HU	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0
LV	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1	1	1	1	1	1
LT	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
RO	0	1	1	1	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
SK	0	0	1	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
SI	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0
CY	1	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	1	1
MT	1	0	1	0	1	0	1	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1

Note: 0 indicates convergence in differences; 1 indicates a divergence in differences. Finland was excluded from calculations due to having the time series that does not satisfy the conditions of the HMM procedure.

The results for inflation rates are shown in Figure 3. The tendency of the Viterbi paths is declining throughout the whole 1995-2016 period. This outcome points to a regular fall in differences in inflation rates between Poland and the other EU countries. A significant convergence of inflation is in line with the economic theory and official statistics – along with the further openness of the economy and integration with the EU, there took place nominal convergence in terms of price levels and inflation rates. Clearly the combination of the Baum-Welch and Viterbi algorithm, yielded economically justified results not only in terms of GDP convergence but also the inflation convergence.

The results for unemployment rates (Figure 4) indicate the strengthening of the similarity of unemployment rates in the last years. This may be caused by the fact that the global crisis and the crisis in the euro area both were the factors leading to the increase of unemployment in many countries. Moreover, the official statistics for real economies often do not support the Okun's law, meaning that economic growth in real countries needn't lead to the fall in unemployment. That is why the results for the convergence in unemployment rates are different compared with those for GDP.

Figures 5 and 6 show the results for consumption (in terms of levels and growth rates, respectively). Consumption constitutes the largest portion of GDP. As we can see, the Viterbi paths for both the level and growth rate of consumption are quite similar to the respective paths for GDP per capita levels and GDP growth rates. It reinforces the appropriateness of the HMM method as a tool to analyze real convergence. Given these outcomes, the results are unlikely to be a coincidence.

The results for convergence of government expenditures are shown in Figure 7 (the levels) and 8 (growth rates). Unlike private consumption that behaves very similarly to the total output, the averages of the states of Viterbi paths for government consumption are different. In terms of levels, there is a tendency toward decreasing cross-country differences. As regards the growth rates, the results reveal large fluctuations from one year to another. This is in line with the economic theory, including the Keynesian cross model, according to which the government purchases of goods and services are autonomous, that is independent of income. The level of government spending depends on the economic policy performed by a given country. The increasing convergence in terms of the level of government consumption may be also caused by the fact that, after the EU accession, Poland received a lot of aid funds from the European Union (it was the main recipient of EU funds from the 2007-2013 budget).

Data for net exports (Figures 9 and 10) indicate the increase in differences of the foreign trade balance between the countries. It is likely to be related to the different specialization of individual countries and a different reaction to various external shocks as well as different involvement in international flows of goods, services, assets, and labor.

The results for the financial sector development are mixed. The volume of domestic credit provided by the financial sector (% of GDP) shows the tendency toward divergence throughout the analyzed period (Figure 11) while the volume of nonperforming loans (% of total loans) exhibits the tendency toward convergence. The latter outcome results from the fact that the extent of nonperforming loans depends on the situation in global markets. After the economic and financial crisis as well as the crisis in the euro area the majority of EU countries noticed a considerable rise in nonperforming loans. If the volume of nonperforming loans rises simultaneously in both countries, it means greater convergence.

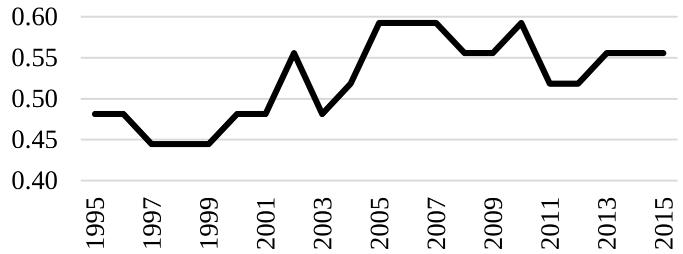

Figure 13. Cyclical convergence of GDP per capita at PPP [gdppc_ppp] between Germany and the other EU countries

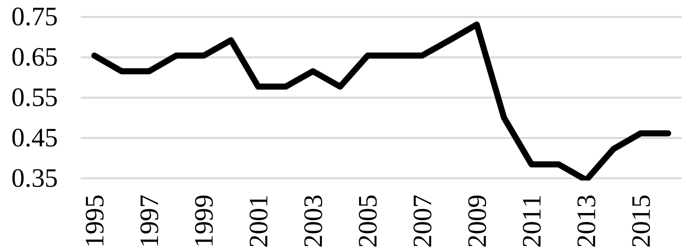

Figure 14. Cyclical convergence of GDP growth rates [g_gdp] between Germany and the other EU countries

The results for the financial sector development are mixed. The volume of domestic credit provided by the financial sector (% of GDP) shows the tendency toward divergence throughout the analyzed period (Figure 11) while the volume of nonperforming loans (% of total loans) exhibits the tendency toward convergence. The latter outcome results from the fact that the extent of nonperforming loans depends on the situation in global markets. After the economic and financial crisis as well as the crisis in the euro area the majority of EU countries noticed a considerable rise in nonperforming loans. If the volume of nonperforming loans rises simultaneously in both countries, it means greater convergence.

Data in Tables 1 and 2 indicate that there is no common regularity as regards catching-up toward the subgroups of countries (Central-Eastern or Western Europe). In each subperiod (the 1990s, 2000s, and 2010s), there were countries both from Western Europe as well as Central-Eastern Europe which Poland converged to or Poland diverged from. It reflects the fact that there are many countries Poland cooperates with and the character of bilateral relations is different for different partners. Hence, it is possible to reveal convergence with some countries but divergence with another ones. This outcome is also in line with the hypothesis of club convergence – some studies suggest the necessity to divide world countries into clusters in the frame of convergence analysis (see, e.g., Battisti and Parmeter, 2013).

The Viterbi paths for GDP per capita levels and GDP growth rates for Germany have been estimated for both comparison and robustness check. Those are illustrated in Figures 13 and 14. In general, the results for Germany are quite similar to those for Poland (although some differences appear). This is economically justified as Germany is Poland's main trading partner and Polish economy vastly depends on the development of Germany. The theoretical structural model implies that the growth rate of the Polish economy should approximately follow the growth of output in Germany. The results are partly in line with this view. The Viterbi path for GDP per capita in Germany shows quite strong real convergence toward the 27 EU countries at the beginning of the analyzed period and an evident real divergence afterwards (around the global crisis). The Viterbi path for GDP growth rates in Germany shows a peak in 2009 meaning that in this year the highest differences appeared. The latter outcome is the same as in Poland.

Conclusions

The analysis confirms that the procedure involving the use of the HMM, the Viterbi path and joining the paths using averages, is a good tool to analyze real convergence. It focuses on different aspects of catching-up as compared with the standard approaches and should be treated as complementary rather than substitutive. The majority of the results are economically justified.

In terms of the GDP per capita at PPP, the results indicate a clear-cut real convergence of Poland and the other EU countries before the beginning of the global crisis, that is from 1995 to 2008. In 2009, the differences between GDP per capita at PPP increased due to the economic and financial crisis. As regards GDP growth rates, there was a sharp increase in the values of averages of the states of the Viterbi paths in the year 2009, meaning that during the crisis there was observed a large rise in differences between GDP growth rates in Poland and the other EU countries, while prior to the global crisis and afterwards there was evident real convergence.

Considering other variables, the results indicate, among others, a clear-cut nominal convergence in inflation years between Poland and the other EU countries throughout the whole analyzed period.

HMM seems to be an effective method of analyzing the macroeconomic time series. Besides the turning point identification and synchronization of the business cycles, the proposed procedure should be considered as new, powerful method that could be extensively explored also in the real convergence studies.

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How Innovation Can Help Improve Sustainability of SMEs within Global Value Chains

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Abstract: Value-creation within supply-chains is now a global activity. Various value-creation processes can take place at different locations across the globe. Small and medium enterprises (SMEs) integrated within these global value-chains face a highly competitive environment due to decreasing technological and logistical costs. In this extended abstract, I will discuss how innovation can create value in a form called "sustainable value-creation". Such value-creation can help improve sustainability of SMEs integrated within global value-chains. Innovation-driven performance and process upgrading can also improve the SMEs' capabilities and processes, allowing SMEs to move up the value-chain over time.

Keywords: SMES, global value-chains, innovation, sustainability, sustainable value-creation, inclusive economic growth, sustainable economic growth, renewable energy systems

Small and medium enterprises (SMEs) have long been a rich source of employment. They constitute the majority of firms, making up over 95% of all firms, accounting for approximately 50% of GDP and 60%-70% of total employment globally [1]. National strategies for economic growth, in particular those related to inclusive and sustainable growth must inevitably engage and involve SMEs.

Wages paid by SMEs are known to be significantly lower than large corporations [1]. This is largely due to productivity lags between SMEs and larger corporations as SMEs employ a larger share of the workforce which includes less-skilled workers. This is also partly a reflection of the sectors SMEs tend to operate in, namely low value-added, labour-intensive and low-productivity sectors.

Addressing these productivity gaps is important for inclusive and sustainable economic growth. In order to do so, SMEs must learn to connect and compete within global value-chains. Global value-chains engage a full range of SMEs to bring a product or service from its conception to the end-of-use and beyond. SMEs must also change and adapt to the new competitive environment by making use of modern management and governance structures, as well as participate actively in increasing the skill level of their employees. Human resource development should not be seen as extra costs on SMEs' balance sheets. Instead, it should be observed as a form of investment, returns of which may not immediate but will definitely improve the SMEs' capabilities to connect and compete in the mid-to-long term. Here, it is noted that SMEs' capabilities are strongly related to the abilities of the human resource available.

In addition to the above, SMEs must develop capabilities to move up the value-chain and be careful not to get stuck at the manufacturing stage. Manufacturing is often regarded as the lowest value-added task in the value-chain [1]. It is attractive to focus mainly at the manufacturing stage as it can easily create a large number of employment. This is not a viable sustainable strategy for the long-term due to wage pressure over time. Wage pressure is sensitive to other factors, namely labour supply, national inflation and currency exchange rates which can very easily disrupt manufacturing activities.

Capabilities, processes and resources combine to contribute to the ability of a SME to connect and compete within global value-chains [2]. These are important factors that enable SMEs to move up within value-chains in order to engage in high-value addition activities such as generating technologies, design, branding, distribution and after-sales service.

Capabilities are directly related to the abilities of the human resources available to transform different forms of capital into valuable outputs which can come in either tangible (physical products) or intangible (technology, design and branding) forms [3]. Processes are related to management and governance structure of the firm. Resources are related to access to tangible assets and monetary capital required to participate in a particular value-addition activity. In short, SMEs interested to climb the value-chain must upgrade their capabilities and processes, as well as to ensure that they have access to the resources required.

Innovation is an important process that can help create value and this can be encouraged through appropriate management and governance structures. Innovation is often referred to as the process of creating something new. In order for innovation to create value, it must successfully achieve either of the following two aims: increase utility or decrease cost. This can be easily understood in the context of product development, although this concept can also be generalised to include services. In product development, this can refer to the introduction of additional features for the same cost or maintaining existing features at a lower cost.

In order to create value through innovation, some form of research and development (R&D) has to be carried out. Such activities are initially expensive. These activities also create value and generate returns that are often not in a tangible form. However, latest cost-accounting techniques outlined in [4] are able to estimate the value created through such activities for goods such as smartphones and photovoltaics. It is now becoming clear that there is plenty of value created in intangible form. Recent research conducted by the World's Intellectual Property Organisation (WIPO) has shown that the value created in intangible form often exceeds the value created in tangible form [3].

Innovative SMEs tend to experience higher levels of productivity and economic growth. Such firms are more likely to export and will be able to do so successfully. SMEs can carry out a series of concrete activities that may improve their innovative capabilities, such as R&D, patenting, spin-offs, incremental innovations, niche market segmentation, standardization, quality upgrading, differentiation, lean manufacturing related to the elimination of waste, and corporate re-engineering (downsizing, rightsizing, outsourcing, and offshoring) [1].

There is plenty of discussion about sustainability in today's context and this ranges from sustainability in the economic context, in particular maintaining positive cash-flow in balance sheets, to sustainability in the environmental context, which sometimes refers to the preservation of biodiversity and clean air. In an economic context, sustainability may often undertake a more singular perspective in the form of numbers on the SMEs' balance sheets. Also, addressing sustainability from an economic context may encourage rent-seeking behaviour that may not be conducive for innovation to take place.

Innovation when conducted in the context of sustainability can lead to a form of value-creation called sustainable value-creation. This is simply the alignment of innovation with designated sustainable development goals. There are many designations for sustainable development goals, one of which is Brunei Darussalam's Vision 2035. In Brunei Darussalam's Vision 2035, one of the goals is to achieve a dynamic and sustainable economy. Another example of a designated sustainable development goal is one introduced by The International Energy Agency which has been modelled as a way to meet the objective for limiting global warming to "well below" 2 degrees Celsius that was set in the Paris climate agreement of 2015 [5]. Other designated sustainable development goals include the United Nations Sustainable Development Goals (UN-SDG) [6]. This framework is an evolution of previous work conducted by the United Nations in order to contextualise the concept of sustainability in a more holistic perspective [7].

The UN-SDG framework consists of 17 global goals. Innovation addresses directly global goal number 7 called industry, innovation and infrastructure. The concept of sustainable value-creation which will soon be introduced here addresses global goal number 11 called sustainable cities and communities. However, there are also first- and second-order effects resulting from sustainable value-creation through innovation and it is highly possible that the effects generated will address all the 17 global goals in some manner.

As an example of sustainable value-creation, I will discuss here an example of using a renewable energy system consisting of lithium-ion batteries and photovoltaic solar panels. Value can be created in this example through cost-savings in electrical energy usage. In some countries, the electrical energy bill consists of two items: a variable-day tariff (where energy use during peak periods is more expensive than energy use in off-peak periods) and a peak demand charge.

The use of the renewable energy system above can achieve cost-savings in several ways. Firstly, savings can be made by charging the batteries during off-peak periods. The batteries can then be discharged during peak periods to reduce the amount of electricity bought from the electricity grid during this more expensive period. Additionally, the batteries can be charged during periods when energy usage is low to be discharged during periods when energy usage is high. This helps to reduce peak demand during periods of high-energy usage resulting in further cost-savings.

Furthermore, the use of photovoltaic solar panels can reduce the overall energy demand from the electricity grid which lowers the peak demand and the corresponding charge. The rate of return on investing in such a renewable energy system can be calculated using the cost-savings generated. This will also determine various physical parameters of the renewable energy system such as battery capacity and the physical area of the photovoltaic solar panels.

Value-chains are a natural extension to the concept behind supply-chains. Supply-chains often refer to the firms' relationships with suppliers and customers to deliver product or services at less cost [8]. In value-chains, various entities are connected to create value which becomes a source of competitive advantage and this can be achieved in a multitude of ways.

A value-chain can be broken down into upstream and downstream activities. An increase in utility can be used to create value, in particular in the aspects of efficiency and responsiveness [2]. Efficiency-driven value is relevant for upstream activities while responsiveness-driven value is relevant downstream activities. These are two avenues in which sustainable value-creation through innovation can be implemented to create value and generate a competitive advantage.

This approach can be naturally extended to global value-chains where entities that are connected to create value are dispersed and located globally. This can happen as a result of technological innovations and openness of trade. The combination of these factors leads to lower technological and logistical costs. It is possible thus to explore the configuration of a SME within such a global activity, and in exploring this configuration, three aspects must be considered: governance, location and coordination [8].

Governance refers to governance structure which is the relationships between the SME and other entities in the value chain. It is also related to various external and internal conditions. External conditions include the industry life-cycle, entry barriers, changes in the market while internal conditions include the SME's size, the manner in how the SME organize the value chain, and the SME's capabilities in specific activities.

Another important aspect to consider when configuring a SME within global value-chain is location. Several factors are relevant here such as the degree of globalness (regional vs global), external conditions related to industry factors, market differences, and finally capabilities required in the global value-chains. Capabilities here refer to the SME's organizational and technological capabilities.

The final aspect to consider is coordination. Various factors are relevant here such as the coordination of actors in the value-chain, the coordination of operation modes, evolution of the coordination of the global value-chain and coordination of activities. The coordination of actors refers to the role of lead firms and their ability to control, coordinate and distribute value. Coordination of operation modes examines how to combine operation modes of different activities involved in the value chain. Evolution of the coordination of the global value chain refers to the study of dynamics of the value chain over time. Finally, coordination of activities refers to the characteristics of concentrated and dispersed global value chains.

Sustainable value-creation through innovation will inevitably generate value within global-value chains, in particular by increasing performance or upgrading of the SME's capabilities. This can lead to a spread in productivity gains across a broader spectrum of the value-chain resulting in more inclusive growth [8]. Value appropriation from innovation can be very high and this is often not appreciated as it is not accounted for in traditional cost-accounting exercises [3].

So how would SMEs in Brunei Darussalam like to connect and compete in the global value-chain? They could on the first instance leverage on strong geographical and local economic advantages such as their location in South East Asia, stable macroeconomic climate, no natural disasters and subsidised electricity. They could also initially connect to the value-chain at a low-value added stage and seek to upgrade their process through innovation and sustainable value-creation. Over time, innovation-driven performance and upgrading can improve a SME's capabilities and processes, allowing the SME to move up the value-chain towards activities that create greater value.

It is important to address productivity gaps and export capabilities of SMEs based in Brunei Darussalam. Whilst SMEs which provide goods and services to a local market can create employment, it may not be the type of employment which generates the high standard-of-living aspired by Bruneians on their path towards Brunei Vision 2035. SMEs must look to connect and compete within global value-chains. In addition, they must be on the continuous lookout for opportunities related to sustainable value-creation. This is highly relevant especially if Brunei Darussalam intends to achieve a dynamic and sustainable economy by 2035. National strategies and policies must be geared towards sustainable value-creation as well as improving the connectivity of local SMEs within global value-chains. Further upgrading of their capabilities and processes can allow local SMEs to climb global value-chains and engage in high-value addition activities.

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Comparison of Corporate Sustainability Performance of Conventional and Participation Banking

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Abstract:* Corporate sustainability: performance of participation banking has been worth considering due to the cash flow they generate and the asset size they have in recent years. The purpose of this study is to evaluate and compare the multidimensional corporate sustainability performance of conventional and participation banking in Turkey. Turkiye Finans prepared sustainability report in the context of participation banking, published first and only report in 2013. For this reason, corporate sustainability disclosures of all banks in 2013 has been investigated. By using content analysis, the number of disclosed sentences is determined. These ratios are weighted using Entropy method and sustainability performance scores of the banks' are obtained with TOPSIS method. This study is the first study in the literature to compare sustainability performance in terms of both the scope of the data and the methodology used in Turkey. Results exhibit that there is no significant difference in conventional banking and participation banking in performance scores based on sustainability dimensions. Additionally, the number of qualified importation is more significant than quantified information and having good performance on a single dimension may not be sufficient for overall corporate sustainability performance has been found.

***Keywords:* Corporate sustainability, conventional banking, participation banking, content analysis, TOPSIS**

Introduction

Nowadays, stakeholders should be able to use non-financial information as well as financial data in order to be able to measure the corporate performance of firms, forecast and analyse future risks. It has been becoming widespread for firms to prepare corporate sustainability reports and to apply these reports in an integrated manner with financial reports. Sustainability has been a critical concern for all business organizations, specifically financial institutions that play a key role in the steady growth of the economy. Banks are at the forefront of the financial institutions that make a significant impact on sustainable development by directing savings to investments. For the financial needs of companies in the economy and the collection of savings, banks comes first among the financial institutions. The purpose of this study is to evaluate and compare the multidimensional corporate sustainability performance of banks operating in the context of conventional and participation in Turkish Banking System. The main corporate sustainability indicators of economic, social and environmental indicators seems to be insufficient for the sustainability practices of the companies'. Along with these indicators; a good administrative structure, stability, soundness of financial indicators and corporate governance are seen as complementary factors for ensuring corporate sustainability. Therefore, multidimensional corporate sustainability model that have five dimensions namely economic, environmental, social, governance and financial has been proposed in this study.

It has been also worth noticing to consider the issue of corporate sustainability in Turkish participation banking, which has drawn attention in recent years in financial system with the cash flow they generate and the asset size they have. Türkiye Finans, the only participation bank that prepared sustainability report in the context of participation banking in the Turkish banking sector, published its first and only report in 2013. For this reason, corporate sustainability report of all the banks that published the sustainability report in 2013 has been discussed, and the content analysis has been utilized. By using content analysis, the number of disclosed sentences is determined and then converted to disclosure ratio. These ratios are weighted using Entropy method and sustainability performance scores of the banks' are obtained with TOPSIS method. According to performance scores, banks are ranked. The combined use of content analysis, entropy weight and TOPSIS makes a great contribution to the study. Furthermore, this study is the first study in the literature to compare sustainability performance in terms of both the scope of the data and the methodology used. Results exhibit that among the seven banks in terms of corporate sustainability performance, Garanti Bank ranks first, while Türkiye Finans ranks second and Şekerbank ranks third. When the sub-dimensions are examined, Türkiye Finans takes the first place in the financial dimension.

Following literature review, this paper is developed through an explanation and justification of the data collected and analysis undertaken. It continues with the methodology part, results and conclusion.

1. Literature Review

Aras and Crowther (2008) first highlight that apart from the environmental, social and governance influence, finance which is defined in terms of an adequate return for the level of risk undertaken has to be considered as one of the main dimensions of sustainability. In addition to the traditional sustainability components, the components that make it possible for the business to maintain healthy and continuous performance over a long period of time and to provide benefits to all stakeholders. Hence, apart from economic, environmental and social dimensions of corporate sustainability, good governance structure and financial factors should be integrated for properly evaluating firms' sustainability disclosure. Based on all these explanations above, multidimensional comprehensive corporate sustainable disclosure model that has five dimensions is put forward in Figure 1 below (see Aras et al., 2017).

Figure. 1. Multidimensional Sustainability Model Proposed

Sobhani et al. (2012) is the first study comparing corporate sustainability practices in conventional and participation banking in the literature. Web sites and corporate sustainability reports of 29 banks operating in the Bangladesh Stock Exchange have been analysed. In the period concerned, banks operating on the basis of participation banking have been found to have more economic, environmental and social sustainability disclosures than conventional banks. In particular, it is seen that more explanations have been made than the ones containing ethical issues. Nobanee and Elli (2016) find that the exploration of corporate sustainability disclosures of 16 banks, which are traded between 2003 and 2013 in Dubai and Abu Dhabi stock exchanges. Dynamic panel data analysis, did not adequately explain the relative performance of the banks in relation to other emerging stock markets. In addition, they reveal that the level of disclosure of corporate sustainability criteria for conventional banks is higher than for participation banks. It is seen that the growth rate of short term deposits taken as an indicator of financial performance is an interaction in positive and positive relation with conventional corporate sustainability indicators of the conventional banks and that there is no effect on the banking performance in participation banking.

It is noteworthy that there is little work on corporate sustainability in the banking sector in Turkey. Ozcelik and Ozturk (2014) use Grey Relational Analysis taking some financial ratios relating to Turkish Banks' and together evaluate the 2011 sustainability reports of these banks' and hence state limited evidence for the performance. Kaderli and Gündüz (2014), evaluate the relationship between sustainability performance and financial performance of Turkish banks. The comparative studies of both banking systems in turkey are aimed at comparing financial performances. (Altan and Candoğan, 2014, Parlakkaya and Çürük 2011, Doğan, 2013). It is noteworthy that there is no study on comparing the corporate sustainability performance of participation banking and traditional banking systems in Turkey.

2. Methodology

This study includes both qualitative and quantitative data analysis techniques considering the Content Analysis and TOPSIS method. For determining the weights that are required by TOPSIS, Entropy method has been employed.

2.1. Data and Sample

Turkiye Finans prepared sustainability report in the context of participation banking, published first and only report in 2013. For this reason, Turkiye Finans and corporate sustainability reports of conventional banks (Akbank, Garanti Bank, İs Bank, Şekerbank, Yapı Kredi Bank, Ziraat Bank) have been analysed.

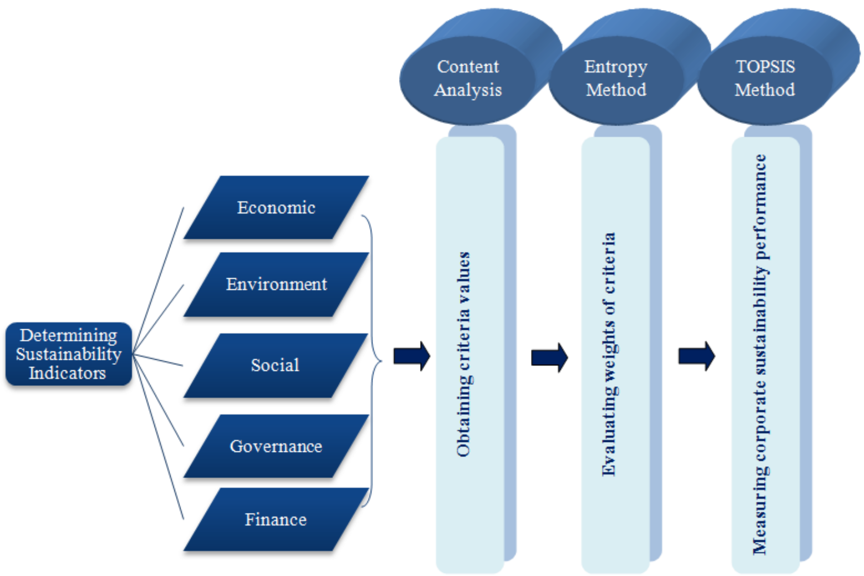
In the first stage of the study, sustainability indicators (criteria) are selected based on GRI corporate sustainability framework, ACCA (Association of Chartered Certified Accountants) guidelines, pilot studies and extended version

of Sobhani et al. (2012) study comprising with a total of 86 criteria under five dimensions and six sub-dimensions.
Table 1 below states the number of criteria based on main and sub-dimensions.

Table 1. Number of Criteria

Main and Subdimensions	**Number of criteria**
Economic Sustainability Dimension	**4**
Financial Sustainability Dimension	**6**
Environmental Sustainability Dimension	**21**
Energy Consumption and Savings	*8*
Natural Environment	*13*
Social Sustainability	**44**
Contribution to Community	*13*
Human Resources Development	*14*
Labour Rights	*7*
Product Responsibility	*10*
Governance Sustainability	**11**
TOTAL	**86**

Figure 2 represents the research process.



2.2. Research Process

In the first stage, sustainability indicators have been determined and criteria values obtained. Content analysis is used to obtain criteria values Number of disclosures (criteria values) is determined Using sentences for the basis of coding (more reliable than word and page basis (Milne and Adler, 1999)) Nvivo Pro 11.0 is used as software. Content analysis is utilized with a total of 7 sustainability reports published by both banking types in 2013. In the second stage, the weights of criteria have been determined. Entropy method is used for evaluating the weights of the criteria objectively. Based on the entropy method results, the main indicators of corporate sustainability can be determined, as well as the superior aspects and differences of the bank's corporate sustainability are demonstrated. In this research, entropy method is used for, weighting criteria, weighting sub-dimensions and weighting dimensions. In the last stage, for evaluating sustainability performance of the banks in 2013, TOPSIS method is employed using weighted criteria values. TOPSIS is one of the Multiple Criteria Decision Making (MCDM) methods. It is based on the concept that the chosen alternative (years) should have the shortest distance from the ideal solution and the farthest from the negative-ideal solution. In this research, TOPSIS is used for evaluating sustainability performance dimensional base and corporate sustainability performance (overall score).

3. Empirical Findings

This part is dedicated to the evaluation of content analysis and TOPSIS results based entropy.

3.1. Content Analysis

Table 2 represents both types of banks' number of disclosures. Is Bank has the highest disclosure in economic dimension, Akbank has the highest in financial dimension, in environmental dimension Garanti Bank has the highest, and both in the social and governance dimensions Akbank takes the first place. Considering the total number of disclosures in all dimensions, Akbank has the highest disclosure and Şekerbank has the least one. Furthermore, Turkiye Finans which represent the participation banking system in Turkey has the second least number of all dimensions of sustainability. It has the highest number of disclosures in terms of *"Investing in energy projects"*, "*Reduction of energy consumption"* in environmental dimension, *"Corporate perceptions on CSR" and "sustainability conceptions, corporate award and recognition" in governance dimension and "evaluation of corporate financial performance*" in financial dimension.

Table 2. Number of Disclosures in Main and Subdimensions

	Conventional Banks						Participation Bank
Main and Sub-dimensions	**Akbank**	**Garanti Bank**	**İs Bank**	**Şekerbank**	**Yapı Kredi**	**Ziraat Bank**	**Turkiye Finans**
Economic Dimension	56	44	68	26	22	54	32
Financial Dimension	97	55	79	35	19	45	39
Environmental Dimension	333	531	228	157	180	256	144
Energy Consumption and Savings	*106*	*135*	*48*	*73*	*44*	*91*	*88*
Natral Environment	*227*	*396*	*180*	*84*	*136*	*165*	*56*
Social Sustainability	1211	897	603	401	665	604	422
Contrbution to Community	*275*	*366*	*177*	*165*	*179*	*226*	*117*
Human Resources Development	*392*	*263*	*156*	*107*	*181*	*159*	*111*
Labor Rights	*45*	*59*	*26*	*25*	*43*	*19*	*8*
Product Responsibility	*499*	*209*	*244*	*104*	*262*	*200*	*186*
Governance Sustainability	626	475	320	240	223	267	346
TOTAL	**2323**	**2002**	**1298**	**859**	**1109**	**1226**	**983**

3.2. TOPSIS Findings based Entropy

Entropy method is used for evaluating the weights of the criteria in an objective manner while direct assessment of weights has some disadvantages when the total number of all possible criteria is very large like in our study.

Table 3 states the weights of sub-dimensions and main dimensions. As can be seen from the table, "energy consumptions and savings" has more relative importance than "natural environment" in environmental dimension and "human rights" has the most relative importance in social dimension. Based on results of entropy method, amongst main sustainability dimensions economic dimension have the most relative importance (41,52%) even though it contains a few number of disclosures. On the other hand, governance and social sustainability dimensions have both similar weights and the least weights (8,64% and 8,14%) among all dimensions.

Table 3. Weights Obtained From Entropy Method for Main and Sub-Dimensions

Sub Dimensions	**Weights**
Environmental Dimension	
Energy Consumption and Savings	0.8046
Natural Environment	0.1954
Social Sustainability	
Contribution to Community	0.1437
Human Resources Development	0.1941
Labour Rights	0.5146
Product Responsibility	0.1476
Main Dimensions	
Economic Sustainability Dimension	0.4152
Financial Sustainability Dimension	0.2013
Environmental Sustainability Dimension	0.2156
Social Sustainability Dimension	0.0814
Governance Sustainability Dimension	0.0864

In literature, Erol et al. (2011), Idayu and Lazim (2012), Li et al. (2014), Hsu et al., 2015) also utilize both Entropy and TOPSIS Methodology for measuring corporate sustainability performance. Entropy method is used for evaluating the weights of the criteria in an objective manner while direct assessment of weights has some disadvantages when the total number of all possible criteria is very large like in our study.

Table 4. Sustainability Performance Scores Based on Multi Dimensions

	Conventional Banks						Participation Bank
Main Dimensions	**Akbank**	**Garanti Bankası**	**İş Bankası**	**Şekerbank**	**Yapı Kredi**	**Ziraat Bankası**	**Turkiye Finans**
Economic Dimension	0.2861	**0.5372**	0.3569	0.4479	0.3008	0.2712	0.3995
Financial Dimension	0.3281	0.4003	0.2669	0.2428	0.2817	0.2382	**0.5358**
Environmental Dimension	0.3441	0.3806	0.3997	**0.4327**	0.3959	0.3635	0.3287
Social Dimension	0.3650	**0.4528**	0.2792	0.3764	0.4040	0.4022	0.3659
Governance Dimension	0.3490	0.2605	0.3539	0.3303	**0.5633**	0.3650	0.4733
Total Score	0.3190	**0.4451**	0.3414	0.3873	0.4153	0.3485	0.3032

Table 4 presents information in regard to all banks' overall sustainability performance scores. In order to attain overall performance score, main sustainability dimension weights taken from entropy method are multiplied by their respective performance score for each bank then total performance scores have been calculated for the related years. Findings reveal that one of the conventional bank Garanti bank has the highest score as 53,72 % and 45, 28% in economic and social dimension of sustainability respectively whereas has 44,51 % in overall performance. Turkiye Finans which represent the participation banking system has the highest score as 53,58 % in financial dimension of sustainability.

4. Conclusion

This paper aims to investigate corporate sustainability performance in conventional and participation banking, which has attracted attention in recent years in terms of earning idle funds, contributing to the development of the money market, and foreign resource transfer. The results of the content analysis show that both banking systems have more disclosures in terms of social sustainability within economic, financial, environmental, social and governance indicators. On the basis of sustainability dimensions, there has seen no significant difference in performance scores between conventional banking and participation banking systems.

It is observed that the participation bank, which is in the last rank in terms of the number of disclosures, has the second highest score among the seven banks in terms of corporate sustainability performance and ranked first in the financial dimension. Content analysis reveals that having highest number of corporate sustainability disclosure does not indicate a superior bank's corporate sustainability performance. Additionally, rather than having the highest score in one or more dimensions, improving performance in all dimensions provides a substantial contribution to the banks' overall score and ranking.

Acknowledgement
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Appendix

List of Corporate Sustainability Indicators

Sustaiability Indicators	**Source of Indicators**
Economic Sustainability Disclosures	GRI G4-EC1-9
Contribution to national economy	GRI G4-EC1&EC8
Development and impact of infrastructure investments	GRI G4-EC7
Impacts on local economy	GRI G4-EC8
Impacts on global economy	GRI G4-EC8
Environmental Sustainability Disclosures	GRI G4 EN1-30, UNEP-FI, EPFI, Sobhani et al.(2012)
Energy Consumptions and Savings Disclosures	GR G4-EN3-7, Sobhani et al.(2012)
Energy saving policies	GRI,EN14
Investing in energy projects	GRI G4-EN31
Investing in renewable energy	GRI G4-EN6,EN7, EN31
Energy consumption	GR G4-EN3-4
Initiatives to reduce energy consumption	GRI G4-EN6
Awareness building concerning energy consumption	Sobhani et al.(2012)
Energy use efficiency	GRI G4-EN7
Reduction of energy consumption	GRI G4-EN6
Natural Environment Disclosures	GRI G4-EN1-2, 8-30, UNEP-FI, EPFI
Corporate environmental policies	GRI G4-35-37, EPFI (2013)
Undertaking environmental protection and beautification programmes	GRI G4-EN13
Compliance with environmental regulations	GRI G4-EN13
Investing in waste recycling / treatment plant	GRI G4-EN27
Environmental financing	UNEP-FI (2015)
Steps in ensuring pollution free environment	GRI G4-EN27
Tree plantation programme	GRI G4-EN27
Initiatives to reduce greenhouse gas emissions	GRI G4-EN19

Environmental cost saving operations	GRI G4-EN27
Issues concerning climate change	GRI G4-EC2
Total water withdrawal by source	GRI G4-EN8
Paper consumption & saving	GRI G4-EN23
Carbondioxide consumption	GRI G4-EN15-17
Social Sustainability Disclosures	GRI G4, UNEP-FI, ACCA, Sobhani et al.(2012)
Contribution to Community Disclosures	GRI G4-SO1-11, ACCA, UNEP-FI, Sobhani et al.(2012)
Importance of community development	GRI G4-SO1
Contribution of separate body to CSR activities	Sobhani et al.(2012)
Supporting and financing SMEs	ACCA
Rural development programmes	Sobhani et al.(2012)
Credit facilities for women entrepreneurs	Sobhani et al.(2012)
Financial assistance for poor women and children	Sobhani et al.(2012)
Supporting the participation of disabled individuals in social and economic life	Sobhani et al.(2012)
Patronizing general and technical education	Sobhani et al.(2012)
Sponsoring sports and cultural functions	Sobhani et al.(2012)
Social awareness programmes	UNEP-FI (2015)
Anti-corruption measures	GRI G4 SO3-5
Supporting and financing art&culture	GRI G4-SO1
Supporting and financing entrepreneurs	GRI G4-SO1
Human Resource Development Disclosures	GRI G4 LA1-16, Sobhani et al.(2012)
Importance of HR development	GRI G4 LA10
HRD plans and policies	GRI G4 LA10
Employee compensation, welfare or donation	GRI G4-EC2
Provision for superannuation benefits	Sobhani et al.(2012)
Male/female ratio in employment	GRI G4-LA1
Executive profile/list of corporate senior officials	GRI G4-LA1
Training employees through in-house programmes	GRI G4-LA11
Nature of training attended by the employees	GRI G4-LA1
Emphasis on the morality of the employees	GRI G4-56-58
Total number and rates of new employee hires and employee turnover	GRI G4-LA1
Appreciating employees for their efforts	GRI G4-LA11
Reward and recognition for better performance	GRI G4-LA11
Employee profile (information about total number of employees, employee	GRI G4-LA12

seniority/age/education level)	
Internal communications with employees	GRI G4-LA4
Human Rights Disclosures	GRI G4 HR1-12,LA1-16
Healthy and safe workplace for staff & healthcare facilities & health insurance for the employees	GRI G4-LA6
Measures to prevent accidents & Disclosing accident statistics	GRI G4-LA6
Provisions for maternity and paternity leaves	GRI G4-LA2
Freedom of association for collective bargaining	
Disclosure on child labour or free from child labour	GRI G4-HR5
Human rights policies	GRI G4-HR1-5
Women rights & equal opportunity	GRI G4-HR3
Product Responsibility Disclosures	GRI G4-PR1-9, Sobhani et al.(2012)
Appreciating customers for their support	GRI G4-PR5
Customer service and facilities	GRI G4-PR3
Information related to new products	GRI G4-PR3
Different types of products & services	GRI G4-PR3
Information on the ground of the products & services	Sobhani et al.(2012)
‘Research & development’ for products & services	GRI G4-PR2
Development regarding online banking	Sobhani et al.(2012)
Arrangement for receiving complaints & Complaints received and resolution information	GRI G4-PR8
Relations with suppliers	GRI G4-SO9, Sobhani et al.(2012)
Secured and contemporary technological infrastructure	GRI G4-PR2
Governance Sustainability Disclosures	GRI G4, UNEP-FI, ACCA, Sobhani et al.(2012)
Organizational profile	GRI G4-3-4
Executives’ profile	Sobhani et al.(2012)
Corporate sustainability vision/mission/goal/objective	ACCA
Corporate perceptions on CSR and sustainability conceptions	Sobhani et al.(2012)
Corporate policy and strategy for sustainable development	ACCA
Management of economic, social, environmental impacts, risks and opportunities	GRI G4-37, UNEP-FI (2015)
Stakeholder engagement/view exchange programmes	GRI G4-24-27
Publiceprivate-partnership (PPP) on sustainability issues	Sobhani et al.(2012)

Disclosure process of CSR/sustainability performance & Monitoring CSR/sustainability activities	ACCA
Corporate governance report	ACCA
Corporate award and recognition	ACCA
Financial Sustainability Disclosures	GRI G4-7,G4-13, G4-EC1, ACCA, Sobhani et al.(2012)
Capital structure	GRI G4-7,G4-13, Sobhani et al.(2012)
Dividend policy	GRI G4-EC1
Funding collection	ACCA
Comparative financial growth with previous years	Sobhani et al.(2012)
Interpretation of corporate financial performance	Sobhani et al.(2012)
Loan Portfolio	Sobhani et al.(2012)

Fintech and Its Importance within Financial Industry: a Literature Review

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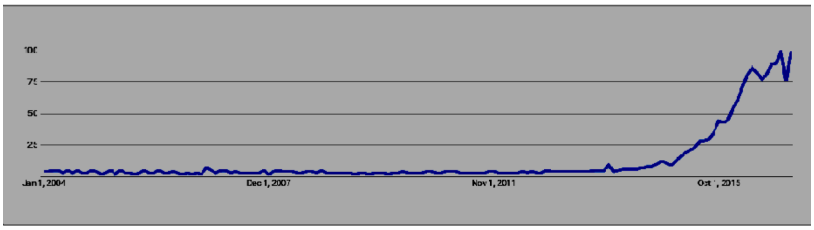
Abstract:
Fintech in the etymological and general perspective is the compound of two independent words i.e. finance and technology, it is not a buzzword. Fintech can be defined as "Computer programs and other technologies used to support or enable banking and financial services". The term's origin can be traced back to the early 1990s and referred to the "Financial Services Technology Consortium". A project, which was initiated by Citigroup in order to assist technological cooperation efforts. However, it is only since 2014, the sector has attracted the main attention of industry participants, regulators, and consumers alike. This shows the importance of the Fintech industry. Mixed research method was adopted by researcher i.e. qualitative descriptive method. Researcher was chosen this method to collect, describe and analyze the recent studies on Fintech and its different areas. Researcher used the myriads of pedantries get at able from vulnerable books on Financial technology, crowdfunding, blockchain, internet of things IoT's and financial inclusion, past research papers, articles, annual reports from available resources including research journals, online libraries and magazines from different websites. Findings shows that Fintech has revolutionized the whole financial services industry by using latest innovative and advanced technologies such as blockchain, big data and analytics, cloud computing, artificial intelligence (AI), IoT's, and robot advisors. By deploying these technologies Fintech promises to reshape finance by improving efficiency and quality of financial services, cutting costs, providing agility and eventually creating a global Fintech landscape.

Key Words: Fintech, Financial services, Blockchain, Crowdfunding, Financial inclusion

Introduction:
Fintech in the etymological and general perspective is the compound of two independent words i.e finance and technology, it is not a buzzword. According to the Oxford dictionary, Fintech can be defined as "Computer programs and other technologies used to support or enable banking and financial services" (Fintech, 2016). Freedman (2006) in his book "Introduction to Financial Technology" discusses the meaning of financial technology. He describes financial technology as being concerned with building systems that model, value, and process financial products such as stocks, bonds, money, and contracts. This new and recent term is given to those companies, start-ups, and firms, that are providing highly innovative and pioneering financial services or products with the combination of IT ventures or by using the latest technology itself. The basic difference between Fintechs and bulk of the regulatory financial institutions, including banks and other financial institutions is the use of advanced, innovative and digital technologies. The regulatory financial industry has large built-in information technology (IT) infrastructures, and the industry is spending a big part of revenues on IT. But, surprisingly the emerging Fintechs are the ones using more advanced technologies such as mobile phones, the internet, internet of things, blockchain, high-speed computing and machine learning. By using these technologies Fintechs are providing cheap and easy-to-access services, from transfers and trading to crowdfunding, etc. and operating largely outside of the banking regulations.

The term's origin can be traced back to the early 1990s and referred to the "Financial Services Technology Consortium". A project, which was initiated by Citigroup in order to assist technological cooperation efforts. Santarelli (1995) cited many studies on technological innovation and economic advancement, which were conducted during the 1980s and 1990s that show the economic development can be enhanced and reinforced by the fusion of new technologies. However, it is only since 2014 as Fig.1.0 shows that the sector has attracted the main attention of industry participants, regulators, and consumers alike.

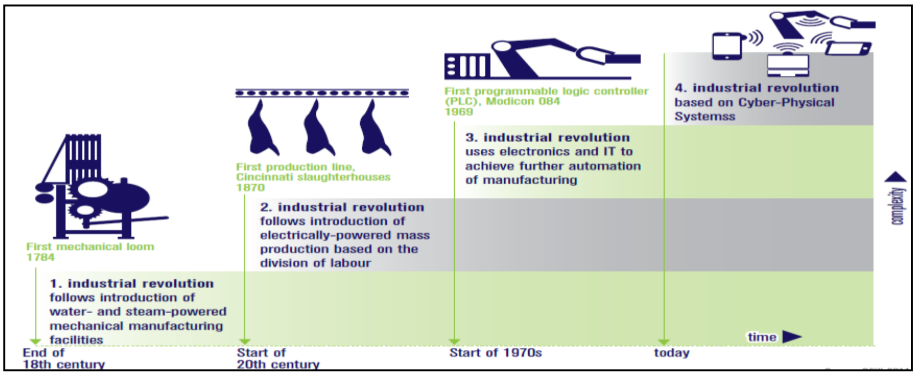
Fig 1.0 Group Trends



Source: Google trends/fintech

New and ultra modern models of business are being introduced in the market continuously. Fintech has become one of the most dynamic, engaging, and energetic segments of the financial services marketplace. The most active areas of Fintech are data and analytics, artificial intelligence, digital payments, digital currencies, crowdfunding and other forms of Peer to Peer (P2P) financing, etc. The history has seen four stages (Fig 1.1) of the industrial revolution; the First Industrial Revolution used steam power and water to mechanize and increase production. The Second revolution used electric power to create bulk production. The Third used advanced electronics and information technology to make the production autonomous. Now we are in the second phase of the third Industrial Revolution, the digital revolution that started and has been occurring since the middle of the last century. It is typified by a fusion of technologies and cyber-physical systems that are blurring the lines between the economical, physical, biological, and digital spheres.

Fig 1.1: Stages of Industrial Revolution
Source: Catch (2013)



It is important to discuss three major eras of Fintech evolution. The first era was from 1866 to 1987; the financial industry, while heavily interconnected with technology, it was widely still an analog industry, especially in public perception, this period was called as Fintech 1.0. The next era started from 1987, during this time financial services industry in developed countries were not only becoming highly globalized, but also innovative and digital. This period was characterized as Fintech 2.0 and this era continued until 2008. During this time span, Fintech was controlled by the traditional regulated financial industry that used technology to give financial products and services. However, since 2008 the next era of Fintech started and was characterized as Fintech 3.0. In this era, a large number of new firms, entrants and existing technology companies started to provide financial services and products directly to several businesses and the general public. The following table has summarized the Fintech evolution.

Table 1.0: Summary of Fintech Evolution

Date	1866-1987	1987-2008	2009-Current	
Era	Fintech **1.0**	Fintech **2.0**	Fintech **3.0**	Fintech **3.5**
Geography	Global/Developed	Global	Developed	Emerging /Developing
Key Elements	Infrastructure	Banks	Start-Ups/ New Entrants	
Shift Origin	Analogue Linkages	Digitalization	2008 Financial Crisis	Last Mover Advantage

Source: The University of Hong Kong, Evolution of Fintech (Arner, Barberis, & Buckley, 2015)

Methodology:

Mixed research method was adopted by researcher i.e. qualitative descriptive method. Researcher was chosen this method to collect, describe and analyze the recent studies on Fintech and its different areas. Researcher used the myriads of pedantries get at able from vulnerable books on Financial technology, crowdfunding, blockchain, internet of things IoT's and financial inclusion, past research papers, articles, annual reports from available resources including research journals, online libraries and magazines from different websites.

Importance of Fintech:

This section circumvents the importance of Fintech within three important perspectives; financial services industry perspective, digitalization or technological perspective and customers and consumers behavior perspective. Fintech is reshaping the different areas of financial services industry i.e. finance and investment, financial operations and risk management, cost price and return, payments and remittances and crowdfunding.

New digital innovative and advanced technologies are in the way of reshaping the value proposition of existing financial products and services. Fintech is becoming disruptive more and more by the leveraging latest and advanced technologies such as blockchain, cloud computing, big data analysis, Internet of Things IoT, robo advisors, and artificial intelligence. In this section, there is the detail about the technologies which are being used by Fintech to provide financial services and products. By deploying these technologies Fintech sector or Fintechs are providing agility, transparency, cost effective and customer centric products and services.

Today, we live in a connected global world with the availability of internet and 5G. The world is going to be smarter day by day due to the emergence and of new innovative and digital tools included smart wearables and devices, smart houses, smartphones, mob health and much more. In this era of the internet of things, the psychological behavior of customers and consumers of every industry has been changed. They demanded services, where they want, when they want any-time, and anywhere in the world. Their mind approach, thinking and decision making about products and services have changed.

The Fintech is rising because Fintech is providing services by understanding the today's customers and consumers' behavior. There is also a large ratio of un/underbanked population in the world. The financial services providers can reach to these unbanked people and can provide easy access to the underbanked and unbanked population of the world via Fintech. It leads to a great step towards financial inclusion.

The importance of Fintech within customers' perspective has been supported by a complete storm, enabled by rising customer expectations for more personalized and digital experiences, enhanced access to venture capital funding, reduced barriers to entry, and accelerated advancements in technology.

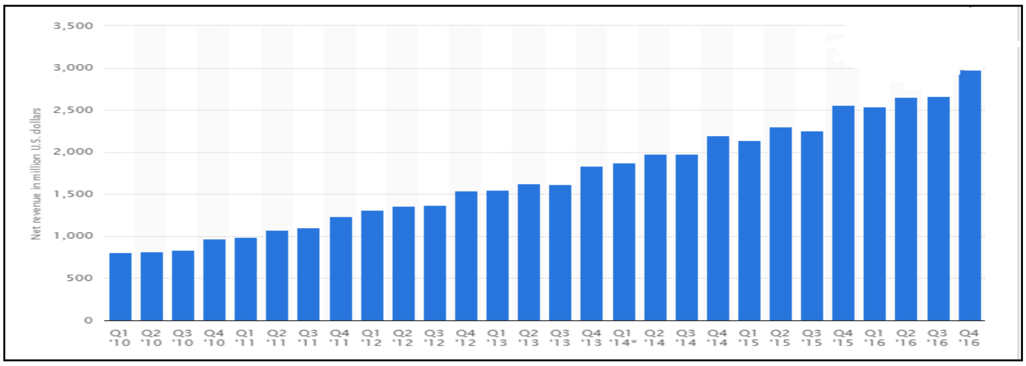
1. **Fintech within the financial services perspective:**

This part circumvents the major areas of fintech which are related to financial services industry i.e. finance and investment, financial operations neo-banking, and risk management, cost price and return, and payments and remittances.

a. **Payments Industry:**

Payments in historical perspective have been seemed as utility products; basically, transactional and tactical in nature and volume-driven. It is reality that a payment was often deemed as merely the final and last step in a transaction, with limited and restricted opportunity to provide value-added solutions or services. (BNY Mellon, 2014).

Fig 1.2



Source: (Statista, 2016)

But today the case is not the same, the payments industry now, is in a state of continues change, underlying several economic, technological, and demographic factors at cutting edge across the length and breadth of the value chain. The industry is witnessing and observing rapid development in innovations across the value chain, thus making it more splintered. New entrants named as non-banking payment service providers in the shape of financial technology and established big tech giants (PayPal, Apple, Facebook, Google, Amaon) have caused disruption and abrogate the intermediation in major parts of banking and the payments landscape. The first and most effective sign and symbol of Fintech revolution can be perceived within payments services industry. PayPal is identified as the most successful and strong player in the field of payment industry. The statistic shows the net revenue of PayPal during the most recently reported period Q4'16 was 2.98 billion U.S. dollars (Statista, 2016).

Mobile payment is a term used to represent and identify any transaction which is linked with a mobile device (Payvision, 2016). 75% of Kenyan citizens have a mobile phone. 80% of them are using their device for banking and payments. (Payvision, 2015) According to Mobile Payments and Fraud Survey, 60% of respondents from all types of organizations as well as merchants considered a mobile strategy to be "Very Important" to their company's growth. (Kount, 2016)

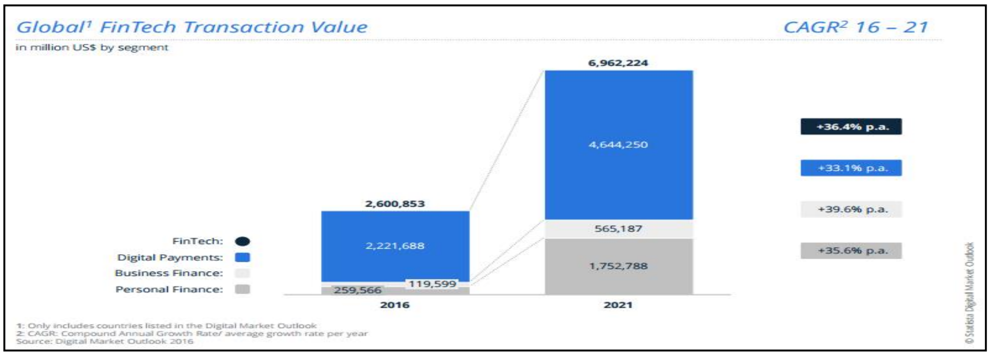
Eventually, a payment in 2020 will be about providing strategically-important solutions and transferring value in support of broader activity in several areas including investment, trade, retail, Public and commercial sectors. The PwC Market Research Centre forecasts that the number of non-cash transactions will also grow by 69% from 2013 to 2020 and the transactions value in one minute will be one million. (PricewaterhouseCoopers PWC, 2016)

Cloud computing, Open source softwares, big data and analytics, developers on demand, social media, open app store for distribution and blockchain can enable rapid technology adoption and deployment in the financial services industry especially in Fintech sector and in particular in payments industry. These technologies could leapfrog antiquated payments mechanisms and systems in several areas such as cross border payments. In addition the use of buletooth, NFC, QR codes in contactless merchant based payments is also having strong threat to the existing and present payments models. (PricewaterhouseCoopers PWC, 2016)

Digital Payments can be defined as non-cash transactions processed through digital channels and include digital commerce, mobile payments and P2P money transfers. The figure illustrates the definitions of these types. The global market size of digital payments at the end of 2016 is accounted US$2,221bn.

Among the different regions US accounted for 29% of the global digital payment followed by china who led Mobile payment transaction value with US467.7bn in 2016. Statista forecasted that it is expected that US mobile payments will grow at an annual rate of 62% between 2016 and 2021. Digital payments were the one of the main derivers of all Fintech transaction value accounted 85% in 2016. (Statista, 2016)

Fig1.3



b. P2P Lending crowdfunding:

P2P lending is defined as "the practice of lending money to individuals or businesses through online services that match lenders directly with borrowers". P2P stands for peer to peer and P2P lending is also called Debt-based crowdfunding and more recently Market Place Lending MPL.

The largest P2P platform in the world in terms of issued loan volume and revenue is the Lending Club was launched in 2006 in San Francisco. Following figure shows the financial results of Lending Club for the third quarter ended September 30, 2016.

Fig 1.4

($ in millions)	Three Months Ended September 30, 2016	Three Months Ended June 30, 2016	Three Months Ended September 30, 2015	Nine Months Ended September 30, 2016	Nine Months Ended September 30, 2015
Originations	$ 1,972.0	$ 1,955.4	$ 2,235.6	$ 6,677.5	$ 5,782.5
Operating Revenue	$ 112.6	$ 102.4	$ 115.1	$ 366.3	$ 292.2
Net Income / (Loss) (1)	$ (36.5)	$ (81.4)	$ 1.0	$ (113.7)	$ (9.6)
Adjusted EBITDA	$ (11.1)	$ (30.1)	$ 21.2	$ (16.0)	$ 45.2

(1) *Includes $1.7 million of goodwill impairment in the quarter ended September 30, 2016 and $37.1 million year to date in 2016.*

Source: Lending club report, 3rd quartet 2016.

This is a vigorous and interesting part of Fintech for lenders due to the potentially high returns, simplified application process, and quick lending decisions but these are linked with high risks because of limited guarantee of the amount repaid. The opportunities posed by P2P lending may have a significant impact on financial institutions. The P2P lending also provides loan to those entrepreneurs and SME's who cannot get loans from regulated financial institutions e.g. banks.

According to Morgan Stanley, it is expected that marketplace lending will be accounted to $290 billion by 2020, averaging 51% growth per year. But in the more optimistic case, this sector is seen to be exceeding $490 billion by 2020. (Coraggio, 2017)

Fig 1.5

Source: (www.gamingtechlaw.com, 2017)

Crowdfunding is a term that refers to a practice of generating funds or capital investments for a reasonable cause, project, or enterprise by getting funds from many individuals or organizations. Crowdfunding is adopted when an innovative and new idea that has the potential to generate revenue and create jobs demands financial support to become a reality. Crowdfunding mostly takes place on crowdfunding platforms (CFPs), i.e., internet-based platforms that connect fundraisers to funders with the objective of funding a particular campaign by typically many individuals. (Belleflamme, Omrani, & Peitz, 2015) These crowdfunding platforms provide access to funds and capital for a segment of the population that cannot easy access it through traditional means.

Crowdfunding was started by a Boston musician and computer programmer (Brian Camelio from the United States) when he first time launched a project based on the website with the name of ArtistShare in 2003 Maria Schneider's jazz album "Concert in a Garden" was the first project of ArtistShare. This campaign raised about $130,000 that enabled her to produce music, pay her musicians etc. Eventually, her album won the 2005 Grammy Award. (Freedman & Nutting, 2015)

After the first Crowdfunding platform, a large number of Crowdfunding platforms have emerged in the market. The key players in the present Global Crowdfunding Market are Patreon, Gofundme, Indiegogo, Kickstarter, and Teespring. Other Prominent Vendors in the market are CircleUp, Causes, Crowdfunder, Crowdrise, FirstGiving, Fundable, DonorsChoose, GiveForward, FundRazr, Gust, Innovational Funding, FundRazr, Kiva, Innovational Funding, RocketHub, and Youcaring. (Research and Markets, 2016)

A research firm provides an overview of American crowdfunding platform as of January 2017. Which show that as of that month, the number of launched projects on Kickstarter amounted to 335,396, and the success rate among these amounted to 35.75% (Figure 3.8). Kickstarter which is one of the largest platforms in terms of projects and revenue. The analysts forecast the global Crowdfunding market to grow at a CAGR of 26.87% during the period 2016-2020. (Research and Markets, 2016)

Statista forecasted that transaction Value in the Crowdfunding segment amounts to US$7,230m in 2017 and the transaction Value is expected to show an annual growth rate (CAGR 2017-2021) of 27.3 % resulting in the total amount of US$18,967m in 2021. It is also estimated that the average funding per campaign in the Crowdfunding segment amounts to US$992.66 in 2017. In addition Statista also estimated that in the Crowdfunding segment, the number of funding campaigns would be accounted to amount to 13,784,220 by 2021. (Statista, 2016)

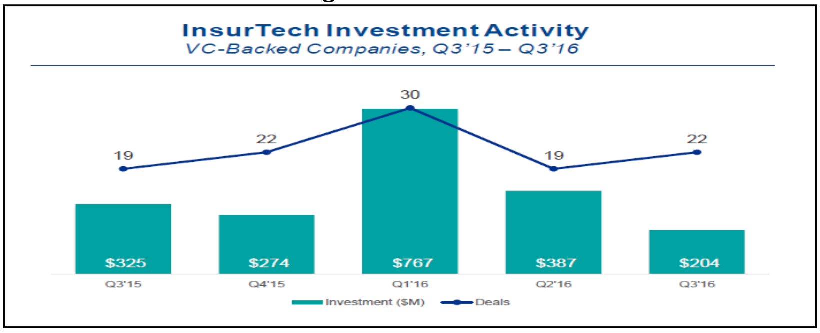
The crowdfunding sector has brought innovative disruptive models to giant existing industries like transportation and real estate, leveraging advanced technologies and the internet to generate massively scalable businesses. Crowdfunding is easy to access alternative for entrepreneurs as compared to regulated traditional financial institutions.

c. Insuretech:

Insuretech is one the segments of Fintech addressing existing insurance opportunities, potential and challenges. PWC's survey shows that insurance companies are likely very much aware of the Fintech revolution: 74% of survey's respondents deem Fintech innovations as a threat for their industry. It is the effect of an external factor, such as use of advanced technologies includes big data and analytics, blockchain the rise of the sharing economy, or the ability to improve operations using artificial intelligence (AI). (PricewaterhouseCoopers PWC, 2016b)

Insuretech is also getting significant investor attention. The following figure shows the Insuretech investment activity.

Fig 1.6



Source: The Pulse of Fintech, Q3, 2016.

PWC'S global survey 2016 depicts that 68% of insurance industry players are dealing with Fintech and have taken concrete steps to tackle the upcoming challenges and/or embrace opportunities. However, only the players that are most innovative ones have Fintech at heart and wanted explore more active ways to participate in the ecosystem, such as incubators and venture funds.

Insurers are introducing lifestyle apps that give additional consumer value on a continuing and constant basis. The constant consumer involvement will begin to reshape price as the key buying criterion. There is an example of Knip, which is an innovative digital insurance manager that gives users with an easy-to-understand analysis and overview of existing insurance policies, and services in an app. Clark is another insurance platform that is working similarly to Knip. Insurance companies should transform digitally and understand the needs of tech-savvy generation. Big data analytics can play a major role in this area which can provide insights of the customer, and forecasting their needs. Big data will remain to be a main force and will soon become a big necessity for companies in this digital era.

By deploying smart contracts powered by blockchain customers and insurers can manage claims in a more transparent, responsive and irrefutable manner. Some startups such as Blockstream, Everledger, and Tierion are working in this direction. Several companies such as insPeer, Peercover, Friendsurance, Lemonade are effectively using social media. Social media acts are helping insurance companies to improve their business and connect with customers. InsurTechs with the help of Internet of Things IoT are equipped to offer relevant packages based on real use and behavior rather than averaged statistics. Domotoz is an Internet of Things solution for the connected home offers a platform for home insurers to rate risk and manage claims. (Let's Talk Payments, 2016b)

2. FinTech within the digitalization and technological perspective:

d. Blockchain:

Blockchain is also called distribute ledger technology. Blockchain is a public ledger of business transactions. A blockchain network work as intermediator in a decentralized system for the exchange of assets and information. There are two main technology components are 'peer-to-peer' or shared data storage and public-key cryptography. (Mainelli & Milne, 2016)

There are different kinds of potential and existing activities in the blockchain revolution are broken down into three categories: Blockchain 1.0, 2.0, and 3.0. Blockchain 1.0 is referred to currency, which involves the deployment of cryptocurrencies in applications related to cash, such as remittance, currency transfer, and digital payment systems. Blockchain 2.0 is referred to contracts, the entire ballet of economic, financial, and market applications using the blockchain technology that is more extensive than simple cash transactions included stocks, bonds, futures, smart property, loans, titles, mortgages, and smart contracts. Blockchain 3.0 is referred to blockchain applications beyond finance, currency, and markets—particularly in the areas of government, literacy, science, health, art, and culture. (Swan, 2015)

According to Accenture report blockchain is one of the most talked about topic in the present financial services industry. 90% banks' executives are interested in blockchain and currently their banks are exploring the use of blockchain in the payments' industry. Moreover, this report also highlights the benefits of using this technology in payment industry these are lower frictionless cost, shorter settlement time, reduce errors, new revenue opportunity, and lower administrative cost. (Accenture, 2016a)

More than 50 banks including Barclays and JPMorgan Chase have joined the R3 consortium. This consortium has objectives to find ways to use the blockchain as a decentralized ledger to track money transfers and other transactions. R3 has plans to make its technology open source, which could speed its wider adoption. Nasdaq Inc. is already using the blockchain with the collaboration from startup Chain.com for trading securities in private companies. The Australian Stock Exchange has started working with blockchain startup Digital Asset Holdings to catalyze its clearing and settlement services in the equities market. (Kharif, 2016)

The Fintech startups included Chainalysis and IdentifyMind Global are helping banks comply with (Know your Customer) KYC and (Anti Money Laundring) AML regulations in the deployment of blockchain for banking services. (Deloitte, 2016b)

Santander, UniCredit, Reisebank, UBS, ATB Financial, CIBC, and the National Bank of Abu Dhabi all are working with Ripple's technology, which deploys a distributed ledger of the sort that also underpins bitcoin. HSBC and State Street have successfully tested out blockchain in bond transactions in 2016, while Bank of America announced a partnership with Microsoft to experiment with the system. (Shen, 2016)

The blockchain technology has a big potential beyond bitcoin such as in payment industry, trade finance, capital markets, insurance, and investment management etc.

There are three main blockchain benefits for the payments industry efficiency and speed, disintermediation, and cutting of transactions cost. Blockchain can provide the efficient infrastructure for speedy settlement of money movement and decrease the need to use internediatory entities e.g. banks for cross border payments.

Innoventures a research firm estimated that blockchain could save business up to USD 20 billion a year globally in settlement, regulatory and cross-border payments costs. Following figure shows the deployment of blockchain or DLT in payments.

One of the most frequently discussed examples of where blockchain can be applied is in the trade finance area. The area of trade finance has real potential and very tangible. Following figure shows the application of blockchain in trade finance. (Finextra & IBM, 2016)

So, this is an extraordinary technology, an immutable, unhackable distributed database of small contracts and digital assets. This technology provides a platform which is about truth and trust. The implications are not just confined to the financial-services industry but also right across virtually every aspect of society. (Tapscott, 2016)

e. Cloud Computing and Big Data Analysis:

Cloud Computing has become an emerging, dynamic and most discussable topic in both academia and industry. The U.S. National Institute of Standards and Technology (NIST) has defined it as “as a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management efforts”. (Hawes, 2010) There are three major categories of cloud computing as services: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service SaaS. These cloud services offer on-demand data access and ubiquitous communications. Cisco forecasted that Cloud Service Providers (CSPs) will process more than three quarters (78 %) of workloads by 2018. (Cisco,2016) In TechTarget’s forecast, 80% of the financial services institutions will run on hybrid cloud architecture by 2018. (TechTarget, 2016)

Mobile Cloud Computing (MCC) is a new type of cloud computing which is basically a converged technology of mobile computing, cloud computing, and wireless technologies. By stepping into the era of 5G, Mobile Cloud Computing (MCC) becomes a perfect match to further leverage the limitations of resources and locations for advanced networking services. (Yan, Li, & Kantola, 2017)
A research firm International Data Corp (IDC) defines Big data as “the intelligent economy produces a constant stream of data that is being monitored and analyzed. Social interactions, simulations, mobile devices, facilities, equipment, R&D, and physical infrastructure all contribute to the flow. In aggregate, this is what is called Big Data”. (International Data Corp. (IDC), 2012)

According to a report issued by a research firm International Data Corp (IDC) the market for big data technology and services will grow at a CAGR of 23 percent through 2019. IDC further predicted that annual spending will also reach $48.6 billion in 2019. (Olavsrud, 2015) The volume of data is growing exponentially, and it is expected that by 2020 there will be more than 16 zettabytes (16 Trillion GB) of useful data (Turner et al. 2014). The White House published a report on Big data which explores that Big data can be used to reveal or possibly reduce employment discrimination by promoting efficiency, ethics, and mechanisms for mitigating discrimination in employment opportunity. White House’ report further shows that by using big data educational opportunities can be increased. Data and algorithms can potentially help law enforcement become more effective, transparent, and efficient. (The White House, 2016) The potential for big data is expected to impact all sectors, from healthcare to media, from energy to retail (Manyika et al. 2011).

There are many ways for financial services industry to achieve business advantages by mining and analyzing data. These include enhanced detection of fraud, retail customer service, and improvement of operational efficiencies. Many Fintechs are leveraging big data to provide more customer centric services.

f. Robo Advisors and Artificial Intelligence:

These emerging firms called Fintechs are leveraging client algorithms and information to develop automated portfolio allocation and investment recommendations tailored to the individual customers. They have been coined the term "robo-advisors". Clients can easily access robo-advice through digital user channels for low fees and sometimes free. (Deloitte, 2016)

Robo-advisors have the ability to eliminate behavioral biases and handle routine account maintenance without human involvement. Robo-advisors quickly attained market traction, overseeing $19 billion by the end of 2014. KPMG and CGI forecast that the number will hitting to $2 trillion in assets by 2020. (patpatia & Association and CGI, 2016)) In addition, KPMG's survey forecasts that 75% of survey's respondents are interested in Robo-advisor services. (KPMG, 2016)

A robo advisor called Wahed, it is the world's first automated Islamic investment platform. New York-based Wahed Invest Inc, a financial advisory company founded by Junaid Wahedna launched this platform. This robo advisor Wahed is an automated platform which has ability and capacity to analyze thousands of Halal securities worldwide to create portfolio allocations with the highest growth potential for its clients. Its main aim is the provision of easy access to Halal portfolio management for 2bn Muslim clients around the world, as well as for non-Muslims who want to do ethical investing. (Webmaster, 2016)

My Private Banking a research firm estimated that hybrid robo services will rise by 2020 to a size of USD 3,700 billion assets worldwide; by 2025 the total market size will be accounted to USD 16,300 billion (My Private Banking, 2016).

A Japanese insurance company having name Fukoku Mutual Life Insurance is replacing more than 30 staff by using IBM Watson cognitive computing software robot known as Amelia which has the ability to understand the semantics of the language and can answer business queries like a human. The Japanese company has a plan to use Amelia to read medical documents that are used to assess payments. The robots will only calculate payment amounts but final decisions will continue to be made by a human. (computerWeekly, 2017)

In 1956, the fathers of "modern" AI, John McCarthy, Marvin Minsky, Allen Newell, Claude Shannon, Nathaniel Rochester, and Herbert Simon came together for a summer school at Dartmouth College (New Hampshire) under the hypothesis that every aspect of intelligence and learning can in principle be so precisely explained that a machine can be made to simulate it. That date is considered the birth of AI because after that time numerous research groups around the globe began to engage in the construction of artificial systems with the avowed goal of equaling, emulating, or even surpassing human mental and physical abilities. (Lungarella, Iida, Bongard, & Pfeifer, 2007)

Artificial intelligence (AI) in this digital era has also become a hot topic for some time now, with many talking about the advantages that it can bring to the financial services industry. AI can help banks in their anti-money laundering AML or employee misconduct detection efforts by replacing costly functions that are currently done manually by humans. (Arslanian, 2016)

There is an example that one of the Sweden bank (SEB) is using AI software from IPsoft for customer service after achieving success in an internal project. SEB in Sweden is the first bank has decided to use IPsoft's cognitive technology for customer services. (Flinders, 2016)

g. Rise of internet and internet of things IoT:

The ubiquity of mobile devices has started to undercut the benefits of physical distribution that banks previously enjoyed. Smartphones enable a novel payment paradigm as well as fully personalized customer services. Moreover, there has been a bulk increase in the availability of largely accessible, globally transparent data, connected with a significant decrease in the cost of computing power. No one can imagine but it is true that two iPhone 6s handsets have memory capacity more than the International Space Station. (Dietz, Khanna, Olanrewaju, & Rajgopal, 2016)

According to Ericsson Mobility Report 84 million new mobile subscriptions were added in 2016 Q3, hitting to a total of 7.5 billion. Mobile subscriptions' number is continuing to grow across the regions. It is also estimated that by the end of 2022, there will be 8.9 billion mobile subscriptions. Mobile broadband subscriptions will also reach 8 billion, with the 90% growth rate. Many PCs and tablets are also started currently used without a mobile subscription, the reason of this the price difference between Wi-Fi only models and those with mobile capabilities. Despite this, the number of tablets and PCs with mobile capabilities and a subscription will increase 30 percent by 2022. Report also forecasts that by 2022, the number of smartphone subscriptions is forecast to reach 6.8 billion, with 95 percent of the subscriptions registered on LTE, WCDMA/HSPA, and 5G networks (Ericsson, 2016)

Internet of things (IoT's) is an emerging and new paradigm in the science of computers and technology in general sense. In a few past years, it has invaded our lives and is getting ground as one of the most promising technologies. According to the European Commission, IoT involves "Things having identities and virtual personalities operating in smart spaces using intelligent interfaces to connect and communicate within social, environmental, and user contexts" (Atzori, Iera, & Morabito, 2010)

IoT in the last years it has become a reality which allows people and things to be connected anytime, anyplace, with anything and anyone, ideally using any network/path and any service. Internet of Things has a great impact on societies. (Papadokostaki et al., 2017) The number of objects able to record and transmit data to other objects is continually growing. It is forecasted that the number of devices connected to the Internet will increase from 10 billion today to 50 billion by 2020 (Payvision, 2016). The IoT could give retailers, sellers and their banks access to real-time detail they need regarding things and goods in transit. (Santander, 2015)

3. Fintech within the customers/consumers' behavior perspective:

This section elucidates the key points related to customers and consumers of financial services industry. Today, we live in a connected global world with the availability of internet and 5G. The world is going to be smarter day by day due to the emergence and of new innovative and digital tools included smart wearables and devices, smart houses, smartphones, mob health and much more. In this era of the internet of things, the psychological behavior of customers and consumers of every industry has been changed. They demanded services, where they want anytime, and anywhere in the world. Their mind approach, thinking and decision making about products and services have changed. The fintech is rising because fintech is providing services by understanding the today's customers and consumers' behavior. There is also a large ratio of un/underbanked population in the world. The financial services providers can reach to these unbanked people and can provide easy access to the underbanked and unbanked population of the world via fintech. It leads to a great step towards financial inclusion.

h. Customer centric environment:

Customer centricity has been one of the driving innovations in the financial services. The tech-savvy digital consumers wanted more personalized services that enhance convenience and keep retaining security. Shifting from product thinking into customer-centric offerings demanded speed, agility, and the ability to innovate. Monetizing social media platforms have become an opportunity to diversify firms' income by engaging the millennial consumers. Fintech has emerged as a result and were funded by venture capital and banks. Digital experience will draw people into nonstop virtual interactions.

Customers are reshaping and redefining their expectations, taking their cues from several industries that provide multichannel access, seamless integration product simplicity, and 'segment-of-one' targeting. In the following years, it became clear that customers wanted to do everything on their mobile phone, including applying for a bank account, or insurance claim. They want personalization, convenience, accessibility and ease of use. They want to feel like their bank is anticipating their needs, not bombarding them with product offerings. They want no surprises and transparency in terms of fees. 75% of PwC's survey respondents from banking and fintech sector see an increased focus on the customer as the most important area of impact.

King (2010) forecast that the future of the bank will have a very different organizational structure. He further described that the entire customer facing organization and supporting platform need to change radically.

As customer expectations are changing, companies are forced to adapt. It is expected that in 2020, companies must focus on using big data to form a single source of truth and making customer decisions and intelligence accessible throughout the enterprise. In future, customers will want to do business with firms and companies that offer a consistent, informed and greater experience across all channels of communication, taking into consideration that customers will have different preferences. Customers will want and expect to interact using their preferred method. (Walker, 2016)

Now, there is the competition among firms, organizations, incumbents, financial services providers to attain the goal of providing the most seamless services at the lowest price, to retain loyalty and win new business. They are aware that providing customers with experience-rich banking and placing themselves is essential for success. Those who manage and embrace the customer-centric approach will thrive in the market (Dharmesh, 2016).

i. Consumers' psychology in the era of internet and 5G:

We live in a world where being connected is not only an expectation, but it has become a part of our day-to-day lives. People live with multiple devices simultaneously.

They have a smartphone, a PC, a tablet, a web-enabled TV to stream content, a gaming device connected to the Internet, and more. So, we live in a hyperconnected world in this era of internet and 5G.

The average individual is consuming 94 minutes a day using apps, checking emails and texting up to 100 times per day. Amazon has also used this behavioral strategy specifically against the likes of Best Buy in the US. These are not new experiences for the average consumer anymore, they are just the way we live our lives in the 21st century.

The growth of technology and more efficient service ways and paths to meet our self-actualisation needs have shifted the way we value our time, set expectations and perceive ourselves in our environment. For example, we understand through the introduction of new communications channels that if we can do something via phone or online, we are essentially wasting our time by persisting with a traditional interaction that is far less time-efficient. This, in turn, increases our self-esteem because we are using our time more wisely. Secondly, the execution of a transaction or a purchase without the assistance of a person, as long as it works well, gives us a feeling of control and self-achievement that cannot be achieved in a traditional interaction. Consumers now expect access to banking through their mobile phones, as a shift away from the Internet and other traditional banking channels.

Between 2004 and 2011 there was a 79% decrease in the number of people booking skiing holidays via travel agents. In 2004, already suffering from the impact of online travel sites, this sector saw only 25 percent of bookings made on the UK high street—today that figure has plummeted to just six per cent of sales. (King, 2010)

Consumers now are routinely using AI-driven features such as digital voice assistants. According to a report, 84 percent of 14-to-17-year-olds are currently using or are interested in using the voice-enabled digital assistant in their smartphones. And, this interest is not limited to younger generations. About one-third of consumers in every age group are also interested in these features. Currently, digital voice-enabled and stand-alone assistants are in the hands of early adopters, but the majority of early adopters are using them on a daily basis. Such dominant usage should lead to advocacy and is a positive signal for this category as it shows a much more enthusiastic adoption pattern than many new innovative product categories recently released.

According to a survey, consumers are also increasingly comfortable interacting with AI-enabled capabilities. About 50 percent of consumers interact with their service providers through mobile messaging apps or live chats on a monthly basis, and 85 percent of those say it feels like it's easier to get in touch via these methods. While just a few past years ago many customers hesitated and resisted chatbots and other computerized customer service features, but, now 62 percent are comfortable and feel ease with an AI application responding to their query. Consumers see big benefits over human advisers too because It's available anytime; it's less biased; and, it's faster to engage. In fact, consumers appear to be readily accepting. The growing acceptance of AI-enabled functionality is one significant indicator that today's dynamic digital consumers are ready for far-reaching hyper-personalized services. But truly understanding consumer readiness for hyper-personalized services is a more complex algorithm than what is expressed just by interest. Readiness is influenced by attributes such as connectivity, the density of personalized data the consumer generates, how much consumers trust providers. Consumers want to be more engaged in managing their data 90% are concerned with the security of their online financial transactions.(Accenture, 2017e)

A research firm Walker published a report with the title of "Customers 2020", which forecasts that today, it is estimated that companies have 60 to 70% of their buying decision made before a sales representative even walks through the door. Old school, the traditional "sales pitch" will be obsolete in 2020.It simply won't be needed more because consumers will do their homework. With just a mouse-click, the Internet gains information about products, solutions, and individuals readily available. Company, vendor, and social media websites are chock full of case studies, best practices, product comparisons, and personal profiles. The Internet's position as an essential resource for companies making decisions will only rise in prominence by 2020. (Walker, 2016)

According to the world fintech report 2016, in general, customers who are younger, affluent, and tech-savvy are much more likely to round out basic financial services with FinTech offerings. Tech-savvy and digital mind customers are using services from FinTech firms twice as much as non-tech-savvy customers (67.3% versus 33.6%). There is also a difference between Gen Y and others (60.9% versus 44.4%) and between the affluent and non-affluent (61.0% versus 49.0%). With Gen Y and tech-savvy customers anticipated to become increasingly prominent over time, the customers turning to non-traditional firms are likely to grow. Trust is also paramount in financial services industry relationships only about one-third of customers (36.6%) say they do trust on traditional firms.

A large percentage of customers claim they neither trust nor distrust their traditional providers (55.6%) and thus could still be won over by FinTech firms. The report further elaborates that when both traditional and non-traditional firms offer positive experiences, slightly more customers tend to trust the FinTech firm (56.3% versus 52.9%). Moreover, the customer segments of the future Gen Y and the tech-savvy exhibit more trust in FinTech firms than other customer types. This gives FinTechs a solid platform on which to build trust, especially as many regulators take steps to encourage both competition and customer protection. (Capgemini Worldwide, 2016)

j. Millennium generation:

Fintech has the most attraction for Millennials who are tech-savvy. Millennial is named a generational cohort, generally elucidated as following Generation X and as born between the early 1980s and the mid to late 90s.

Millennials are moving more speedily and frequently toward digital banking. And as a result, they're walking into banks' traditional brick and mortar branches less often than ever before.

They are the most frequent users of digital devices and mobile applications, and so they are the main target for financial institutions looking to acquire and keep customers and serve them over time as their financial needs evolve.

One survey claims that the most agreed with a statement about market share and the need for innovation and digitization is about this millennial customer segment. 88% of the survey respondents agree that they must improve the digitization of their processes to at least have a fighting chance of winning millennial business. This survey also forecasts that for those that don't or can't improve their customer-facing processes in this way, the fear of losing market share to new entrants is very real, with 54% agreeing they could lose significant market share if millennials 'needs and expectations not addressed. (Meola, 2016)

Smartphone adoption is similarly higher among younger generations, with the differences being more pronounced among age groups: 91 percent of those ages 18 to 29 and 88 percent of those ages 30 to 44 who own a mobile phone have a smartphone, while 72 percent of mobile phone owners ages 45 to 59 and 56 percent of mobile phone owners ages 60 and over have a smartphone. (Federal Reserver Board, 2016)

k. Underbanked or unbanked consumers and Financial Inclusion

Finance looks too big. Certainly, some banks are still too big to fail, but on a global scale. Right now, only 50% of people worldwide have a savings account and just 20% have access to a loan product from a financial institution. There are roughly five billion people that banks do not serve today. More than anything, today finance is poorly distributed. (Chishti & Barberis, 2016)

Accenture's report illustrates that across developing countries where banking distribution networks and depth of credit and savings are more limited, some 160 million small and micro businesses lack access to finance; another 160 million are underbanked. The report also elucidates that 70 percent of microenterprises have a bank account but only 5% have access to term loans from banks and 1% to working capital loans from banks. (Accenture, 2016d)

World Bank's report shows that, only 36 percent of Indonesians have access to banking services and merely 13 percent of them borrow from formal financial institutions. There are almost 60mn Micro, Small and Medium Enterprises MSMEs, which are providing over 100 million jobs in the country but most of them cannot get the financing from regulated financial institutions e.g. banks they need to expand. (Setiadi, 2017)

According to The World Bank, it is an estimate that two billion adults or 38 percent of the world's adult population do not have access to basic financial services. (Demirguc-Kunt, Klapper, Singer, & Oudheusden, 2015)

Every day majority of Americans swipe their credit cards for utility bills, groceries, or a night out on the town. Charges are also applied, merchants pay roughly 30 cents plus 3% of the value of the transaction and while expensive, merchants oblige because of the convenience credit cards offer to their customers. Given that most retailers have 5–10% net margins, taking credit card payments often wipes out half or more of their profits. Under the cost structure, banks rely heavily on fees and tricky penalties to make money no need to hold capital reserves to earn those. Take the overdraft, which generates \$30bn+ in fees per year. One study found that the average consumer would pay an implied (Annual Percentage Rate) APR of 3520% on a \$24 ATM overdraft. In 2007, total overdraft charges were \$17.5bn, so this line has grown at a "healthy" 9% CAGR since. (Chishti & Barberis, 2016)

The mobile money industry is one of the main areas of Fintech now largely established; bringing financial inclusion to a growing number of previously un/underbanked populations across the developing world. With mobile money services which are now available to 1.9 billion people globally, previously unbanked customers are taking benefit from the choice, convenience, security, and affordability. In Sub-Saharan Africa, there are more than half of the live mobile money services, where it has become a more popular service not only for fund transfers but also other transactions such as bill payments and airtime top-ups etc. The potential and opportunity for mobile money to contribute to economic growth and financial inclusion endures far beyond what the industry has achieved today. Recent data also illustrates that digital payments through mobile money helps to weaken the informal economy, lessens the velocity of money, and improves the economic circumstances of the poor. By empowering farmers and women, for example, mobile money has the capacity and potential to profoundly and positively strengthen social cohesion and reduce inequality (GSMA, 2016).

There are three most common and important needs of un/underbanked consumers for financial services: easy access, appropriate products and attractive to use. Because physical branching banking infrastructures are expensive to develop, alternative distribution approaches are emerging. The most powerful of these may be mobile financial services, as in many low-income countries mobile device ownership is surpassing bank account ownership particularly, which enable cost-effective transactions and product management. Available financial services also mean available at the right price and design that are affordable for low-income customers and relevant to their needs, with administrative or regulatory policies that reflect their unique circumstances. These three needs can be provided to un/underbanked consumers by using Fintech. Because Fintech has attributes like agility, attraction and easy access to everyone. So, Fintech rise is the clear evidence of the capability of Fintech.

Conclusion:

Fintech is a rapidly growing sector of financial market. Fintech started, revolutionized, developed and now emerged in a dynamic and new shape. It has witnessed different eras of development along with the different phases of industrial revolution. During Fintech 1.0, this sector has gained infrastructural development, that includes the introduction of technologies such as first trans-Atlantic cable and ATM. Fintech 1.0 was limited to analog technologies and due to this it remained non-globalized. Fintech 2.0 was the shifting from analog to digital and obviously, it was the era that pushed Fintech towards becoming more globalized. New entrants and start-ups emerged and started working in this era, but still, regulatory financial institutions hold financial services industry. Fintech 3.0 emerged after financial crisis 2008 which had a catalyzing effect on the growth of Fintech due to growing distrust of formal regulatory financial institutions, public allowed new entrants, the rise of smartphone penetration and operational cost reduction. Fintech has created a sharing economy having the potential to enhance and promote financial inclusion for underbanked populations across the world.

Findings shows that Fintech has revolutionized the whole financial services industry by using latest innovative and advanced technologies such as blockchain, big data and analytics, cloud computing, artificial intelligence (AI), IoT's, and robot advisors. By deploying these technologies Fintech promises to reshape finance by improving efficiency and quality of financial services, cutting costs, providing agility and eventually creating a global Fintech landscape.

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Public Private Partnerships in Brunei: A Feasbility Study

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Abstract:* *The objective of this paper is to study the extent of Public Private Partnerships (PPPs) implementation in Negara Brunei Darussalam (henceforth, Brunei). PPPs are a global public finance phenomenon which gained international prominence in the last three decade and the Brunei government has shown significant interest to implement this policy for its next phase of national social and economic development. Whilst developed countries have successfully managed their PPPs, many developing nations were not able to do so. Therefore the question presents; can PPPs work in a small country like Brunei? Are there attractive projects for private sectors to invest and for them to receive guaranteed returns from their investments? Is Brunei well-equipped and have the necessary macro-economic and institutional capabilities to implement a PPP project? Based on our empirical research, our findings from interviews with the relevant stakeholders found that there are still challenges that have to be overcome to successfully implement a 'Bruneian brand' of PPPs.

Keywords:* *Public Private Partnerships, Brunei Darussalam, Welfare State, Public Spending, Small State

INTRODUCTION

The World Bank (2015) defined PPP as a 'long term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance,' while Hodge and Greve (2016) only highlights infrastructure financing when they defined PPP, ignoring possibility of providing a service as part of PPP. For the purpose of this paper, the World Bank's definition will be used because PPP can involve services other than just infrastructure financing and development. PPP contract can be attractive to both sectors; for private sector, due to its purported handsome returns and shared risks with the government, while for the public sector, services can be provided in a timely manner, at the expected quality (such as newer, better design and use of latest technology) benefitting the public even if it means a possible increase in cost for providing a particular service.

The term PPP needs to be differentiated from privatisation, management contracting or contracting, where the latter traditionally known as procurement in the government sector. To a large extent, PPP connote funding deriving from the private sector and in some cases, with smaller, co-funding from the government, to implement public project. While the public sector may dictate what is to be built or which services to provide for, the government would eventually own the service after the contracting period ended. The government has the option to re-tender or leave a particular service to another private company when the earlier contract ends.

Another important factor which must be considered in a PPP contract is the projected profits. Private sector would only invest in projects with potential profits, regardless if it is to be shared. This 'marriage of convenience' between public and private sectors might not seemed normal to developing countries governments, however the idea and concept of PPPs, spinoffs from privatisation efforts in the 1980s, has gained momentum in developing countries after its promotion by developed countries and donor agencies (Bayliss and Waeyenberge, 2017), even though its successes are not always assured (Osei-Kyei and Chan, 2017). The main reasons for governments to engage in PPPs are its to free itself from raising funds directly from the public (usually in the form taxation) to build necessary infrastructures or services without initial costs. In other words, if taxes are not increased, the elected government can remain popular (in democratic countries) and the project benefits from private sector skills, expertise, innovation and ethos to ensure projects are delivered on time and at the expected costs. Therefore, both public and private sectors has the responsibility and it is within their best interest to ensure the projects are completed on time, at the expected quality and within budget.

Another advantage of PPP is to ensure the presence of a strong private sector in the economy. While such statement seemed surprising however, for a small country like Brunei, which has been dependent on the public sector due to its petroleum resources (discovered since 1929) and a small population of over 400,000 people, PPP can be a way to rejuvenate its weak and underdeveloped private sector. A different set of PPPs can be developed and implemented in the country taking into consideration of the country's unique economic characteristics. Therefore this paper contributes to existing empirical work on PPP where its findings is based on the context of a small country with a small economy and population, with the hope of harnessing the principles of PPPs for its next level of development.

LITERATURE REVIEW

The literature on PPPs in small economies is limited and internationally a PPP project is identified as projects that are valued at above US$40 million. Song, Zhang and Dong (2016) analysis of the literature between 2000 to 2015 on PPPs found that most PPP research are carried in big economies like in China, the United States, United Kingdom and Australia and most PPP projects are implemented in the transportation, water treatment, solid waste management, public housing and public health sectors.

It seemed peculiar that Brunei, ranked by Forbes Magazine as the world's fifth richest countries in 2012 (Forbes, 2012) and fourth richest in 2017 (Forbes, 2017), is seeking private sector funding to finance its physical infrastructures. To date the Brunei government is one of the few countries in the world that do not impose personal income tax to its population and gave generous subsidies to its citizens who enjoy free education, healthcare, subsidised public housing and public utilities (Mahmud, 2018). Nevertheless, petroleum prices have dropped from its high of over US$100 per barrel seen between 2007 and 2014, to the current low of US $50 per barrel, significantly affecting the national income and since 2013, Brunei has experienced negative economic growth rate. In order to stimulate the economy and diversify from petroleum resources, the government has to seek private sector participation to jumpstart the economy (Hayat, 2017a).

Brunei is not alone in seeking PPP projects. Other petroleum rich small countries such as Kuwait, United Arab Emirates and Qatar have already enacted PPP laws to accelerate infrastructure development using local and international private funding. However, similar to developed countries, the results are mixed (DLA Piper, 2016) and more research are needed on the effects of PPPs in small countries.

Previously, the term PPPs has been used rather loosely in Brunei. Any public and private events seemed to be labelled generally as 'PPPs' even though it is not PPPs as per highlighted earlier. In 2012, a representative from Department of Economic Planning and Development (DEPD), highlighted two PPPs project in Brunei that was practiced; firstly, the refurbishment of three blocks of apartment building in Ong Sum Ping for a period of twenty years, with the government receiving a guaranteed lease rentals of B$750,000 per year for 20 years and secondly a 2,000 housing community and commercial development (Anonymous, 2012). Upon consultation with relevant stakeholders, we found that the first project falls into the category of our initial definition of a PPP projects, however for the second project, we identified that this was not a PPP project.

It was only in 2014 that the Department of Economic Planning and Development (DEPD) under the Prime Minister's Office officially published the PPPs guideline and the usage of the term has been tighten to mean private finance for social and economic infrastructures of the country. Therefore since the advent of the guidelines, three years after the publication of the guidelines this paper seeks to find out what have been done in the last three year on PPPs in Brunei.

METHODOLOGY

This research uses empirical, qualitative research methods, with semi-structure interviews being conducted in the course of a month between May and June 2017. Five government departments were approached as they were identified to be important stakeholders in PPP projects in Brunei. Researchers requested at least two officers to be interviewed from each department to ensure richer data and information can be obtained from the practitioners. Out of the five formal requests for interviews that were sent, two departments declined to be interviewed. However, based on recommendations by other interviewees, researchers were directed to a different department and a state-owned company to discuss their role in the country's implementation of PPP projects.

Although only five officers actually spoke during the interviews, there were eleven officers who were in attendance in all five of the interviews conducted. The presence of the other officers in the interview were to ensure the information given by interviewed officer concerned were correct and it is in line with department's policy. All interviews were carried out for more than an hour, more than the expected time requested. The officers in government department were labelled as officers O1,O2,O3, O4 and the officer from the state-owned enterprise is labelled as O5.

FINDINGS

PPP Concept is Understood

All senior government officers interviewed understood the concept of PPP as the idea has been socialised by the government in the last few years. They believed that PPPs is not merely a public and private sectors working together, in any collaboration between two parties to host or organise certain public events in the country as the media has casually referred to during the late 2000s and early 2010s. They understood that it a specialised platform whereby the government can seek private funding, locally or internationally, for social and infrastructure development projects in the country.

Reason for PPP Implementation is Understood

The senior officers interviewed also understood that the government is championing the idea of private financing. All understood that the government financial resources are under strain because of the fall in oil prices, which made up majority of the country's export and income. The country has been under economic recession in the past four years due to failing global oil prices; therefore it becomes more pertinent that the private sector take lead to partner and to fund government projects. However, all the interviewed officers understood that the Bruneian private sector is quite small due to decades of government dominated economy that officer, O5, quipped,

"*Do you noticed in the media recently that the SMEs, are not called SMEs anymore, rather they are called MSMEs, Micro, Small and Medium Enterprises. This shows how small our private sector is*."

Furthermore, the issue of unemployment has been highlighted not only by the media but also the senior government officials, which further reiterate the importance of encouraging private sector development. According to Officer, O4, while PPP is "doable" however "it is not an easy task to do."

A National PPP Policy Is Not Ready

Although a PPP guideline was published in 2014 by the Department of Economic Planning and Development (DEPD), however, this document only served as guidelines for projects in the next 11th National Development Plan (NDP) which is expected to be published in 2018.

The plan is not a national plan per se because projects that are not under the NDP do not have to follow the guidelines listed by DEPD. If the ministries wished to propose PPP projects that are not part of the NDP projects, they have the option to do so. Officer, O1, was recently given a task to provide the ministry a workable framework of PPP implementation while another officer, O3, has already submitted his department's proposal for PPP to the DEPD for consideration (for a few years). Officer O5 shared that there are not many people who has been hired to look into the PPP policy though in general they know what it is all about. According to officer O5, those who is not involved policy drafting do not realise how difficult it is to attract investment into PPP due to Brunei's small economy.

Indeed if there is a continuum to measure Brunei's readiness in terms of PPPs, officer O5 would put

"*Brunei in 5.5 in a scale of 1 to 10, where 10 means ready to implement as all capabilities are available and in existence*."

Officer O4 noted that Brunei could probably afford PPP when the petroleum prices increased again.

A Need for a PPP Central Agency?

Senior officer, O4, suggested the establishment of a department solely focusing on PPP and suggested it to be placed under the preview of the Ministry of Finance. This ensures the country of having one sole policy on PPP and avoids multiple PPP policies from different ministries. Since PPP projects would involve financing, it is only appropriate for the Ministry of Finance personnel to oversee the project proposals as factoring the costs benefits or value for money with high public interest or benefits would be the Ministry of Finance's speciality. Furthermore, with skilled and experienced personnel in managing public funding, decision-making can be made quickly. In other countries, senior officer, O4, believed that PPP offices are located close to the central authority and power where quick decision-making can be made.

A Need to Review Other Government Policies

All officers in the interview noted that there is a need to review several government policies and laws to facilitate the implementation of PPP in the country. For example, the Land Code, National Land Use and the current procurement policy needs to reviewed to facilitate the implementation of PPP. The officer, O1, is aware that only "bankable" projects can be "sold" to the private sector to make it more attractive, hence certain sectors such as water and housing projects are believed to viable; however there are many processes it needs to go through for final approval. In other words, implementation of PPP can be further enhanced if decision is made quicker.

Ethical Consideration and Policy Differences

Wealth from petroleum resources has allowed the government to provide a welfare state to its citizens. Citizens were given free education, healthcare, old-age pension, subsidized water supplies, electricity, housing and basic food necessities such as rice and sugar. Although the rates varied though the decades, Brunei still has Southeast Asia's lowest water and electricity tariffs. The government has a 'unwritten' policy of not "burdening the public," or what officer O1 noted, being 'overprotective' of the public hence if PPP projects are implemented, it can cause 'difficulties' to citizens who are used to cheaper prices for basic utilities and services for decades. Brunei is still one of the few countries in the world that does not impose income tax to its citizens.

However, if that is the case, can PPP be effectively implemented in Brunei? One suggestion is for the private sector to be involved in sectors which do not affect the public directly in terms of the costs, such as building of infrastructure or shopping complexes. The government can provide land and an agreement with the private sector for contract leasing. Nevertheless, such agreement is probably not PPP as defined by international standards.

Small Private Sector

All officers who were interviewed believed that Brunei's small private sector is not yet able to handle PPP projects in Brunei. This is because the Brunei private sector is still dependent on the government for projects (procurement). Their track record is not encouraging according to officer, O4, therefore, if there is to be a multi-million dollar investment, the Brunei government would have to seek international private sector funding to realise its PPP projects. At this moment, Hengyi Industries from China has agreed to make a US$3.445 billion investment to build a petrochemical industrial park at Pulau Muara Besar (Xinhuanet, 2017) and the recently signed Memorandum of Understanding for China Fortune Land Development (CFLD) to possibly build an industrial city model in Jerudong area (Norjidi, 2017). There are no specifics being given out for the latter project by the local media and no information can be obtained during the interviews.

Officer, O4, also noted that '*while there will always be project, but not all projects can or should be implemented by PPP*' and the most important criteria is the viability of the projects to be undertaken and examined before it is adopted.

Transparency and Cooperation

All officers believed that there is a need to be a more transparent and clear guidelines and the public to know about any PPP projects to be carried out by the government. At this moment, stakeholders are sometimes not consulted before a sudden announcement in the media. Because of this practice, it can become confusing to other private companies which may be interested to invest in the country as there are no clear policies or main policies on this. To avoid incidences of possible corruption, collusion and nepotism, transparency is important to ensure both the public and private sectors can carry out the projects without fear or favor.

Officer, 01, highlights the need for the public sector to also talk to local private sector to seek information on their capabilities. If the government is serious in promoting the local private sector which can help improve the unemployment rate in the country, the government needs to be more pro-active and introduce policies that helps the local private sector to grow. However, the local private sector must also not be too dependent on the government for assistance to show that they are able to do the work as expected.

IMPLICATIONS

Brunei is a small absolute monarchy in Southeast Asia and citizens had enjoyed one of the world's highest living standards due to its small population and massive amount of petroleum resources. However, petroleum resources are finite resources and its prices has reduced in the last few years. For the first time its modern history, Brunei has recorded four successive negative economic growths since 2013, therefore Brunei is in effect in economic recession. Brunei needs more investments into the country in order to stimulate the economy as well as to provide employment for the people. The implications of introducing PPPs can mean higher prices to consumers of services which are typically necessary for private sector to profit from their investments. Would the government allow prices to be increased? Interviews with the government officers seemed to indicate that at this moment, the political leadership may not see this as desirable. Can 'PPPed' projects be implemented without increasing prices or implementation of user charged prices? It seemed difficult at this current climate and Bruneians must be prepared to face a reality of higher prices as cost of living may increase (for example, majority of food products are imported into Brunei), and with less revenue generated from the oil and gas exports due to declining petroleum prices, new sustainable industries must be created in order for Brunei private sector to grow. The Bruneian public would need to be exposed to services which may mean increase in prices due to private sector's involvement. The public is not immune to paying for services as seen with the privatisation of the first mobile company, Datastream Technologies (DST) in Brunei in 1995, which has the sole monopoly of Brunei's 3G and 4G broadband services. DST Group belongs to the government of Brunei.

Partnership with the local private sector seemed difficult as they do have neither the size nor the financial resources to do so. As reported in the media, Brunei's MSMEs which consisted about 90% of all companies in Brunei, lack the financial resources and because of that, they are also not able to participate in national development projects (Hayat, 2017b). If this is the case, then it seemed quite difficult for Brunei to have a successful PPP with local businesses and PPP is only viable for international partners which can bring the necessary fund into the country.

Currently there is one confirmed development project in the country being financed by funds from China, namely the Pulau Muara Besar Petrochemical Complex. According to the interviews, since the Chinese are willing to come and invest into the country, Brunei has gained a strong political ally, financially and economically. It seems that China does not interfere in Brunei's local politics; therefore Chinese investments are seen as desirable unlike some foreign donor institutions and countries that can expect changes to the local social, economic and political structures of developing countries to be made before funding is given.

PPP is an interesting concept and implementation can be difficult in a small country like Brunei. However, PPP is still possible if one does not use the international standard of US$40 million to label a project as PPP. For small countries, projects which cost a few million dollars can be a viable PPP project due to its nature of having a small number of population and small economy. What is important is the fact that most of the fund has to come from the private sector and some can be derived from the public sector. Due diligence is important to ensure the projects are completed on time and at the quality desired therefore transparency, in the early stages of project development is also crucial. The government must ensure that transparency is practiced to make PPP projects in Brunei attractive, and increase private investors' confidence in the economy and market. Brunei needs a strong enforceable structure and framework to attract investors within and outside of Brunei.

CONCLUSION

The literature on international PPP projects has shown mixed results. There are many which are successful as well as failures in implementation. Countries with larger population and bigger economies would have far better chance to implement PPPs and are seen as desirable at times by governments of the day. They can raise funding, typically though increase taxation for new developments in the country. Brunei as a small country would need to review its policies to cater the needs for an advanced economy and advanced capabilities in its human resources to ensure PPP can be effectively implemented in the country. While Brunei need not follow the definition of PPP projects to be valued at over US$40 million, as long as there are willing private partner to cooperate and fund a project or service at a profit, a Bruneian PPP can be developed.. As long as the government has an open door policy for private investments, private investments both local and abroad can be interested in PPP projects in Brunei.

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Political Institutions and Finance-Growth Nexus in Emerging Markets and Developing Countries: New Evidence from Dynamic Panel Threshold Regression

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ABSTRACT: Recent theoretical and empirical evidences suggest that political institutions are the core component of institutional matrix in emerging market and developing countries, in the sense that they set stages for other institutions (e.g. economic and legal institutions) to be devised and influence the growth process. This raises an important question whether recent cross-country study that pool poor and rich countries together in one sample to study the nonlinear effect of (economic) institutions on finance-growth nexus miss the role play by political institutions in developing countries. This study is an attempt to fill this gap. Using a dynamic panel threshold regression, this paper robustly finds that financial development only contribute to higher growth in developing countries with qualities of their political institutions reach a certain minimum level. Thus, minimizing political risks through improvement in political institutions can improve the growth dividend of financial development.

KEYWORDS: Political institutions; Dynamic panel threshold model; Financial development; Economic growth; Emerging markets; Developing countries.

1. Introduction

Conventional wisdom suggests that well-developed financial system helps increase economic efficiency in channeling scarce resources to the most efficient uses that contributes to long-term economic development (as summary in Levine, 1997). Large empirical evidences from cross-sectional, time-series and panel studies have shown that financial development is growth-promoting (Seven and Yetkiner, 2016; Samargandi et al., 2015; Law and Singh, 2014; Levine et al., 2005; among others). Moreover, recent accumulated empirical evidences emerge to show that the finance-growth nexus exhibits nonlinearity depending on the third mediating/facilitating structural factors.[1] Many recent studies show that nonlinearity of the finance-growth nexus depend on institutions (Law et al., 2013; Law and Demetriades, 2006).[2] These studies conclude that the nature of finance-growth relationship change with these structural factors, e.g. higher qualities of institutions (e.g. low corruption) translate into well-developed financial system that promote growth. However, many of these studies postulate (and empirically verifies) on the important of institutions reflecting economic institutions, a dimension of broad institutional matrix. Furthermore, these studies are based on the global sample of developed and developing countries. It is well-acknowledged that institutional quality (and financial development) in rich countries are much higher compared to the less-developed and poor countries.

Moreover, there is a recent political economy theory on the emerging and persistent of institutional arrangements that center on the political institutions. It postulates that political institutions determine the emerging and persistence of economic institutional arrangements, the so-called 'hierarchy of institutional hypothesis (HIH)' (Acemoglu et al., 2005, Acemoglu and Robinson, 2008), thus put forward the proposition that political institutions are the core dimension of the broad institutional matrix. HIH conjectures that political institutions (e.g. democracy vs. dictatorship) determine the allocation of political power and the extent of and constraints on its usage among power-holders, e.g. individuals or groups. In equilibrium, those who held dominant political power would seek to influence the outer-layer dimensions of institutional matrix, for example economic and legal institutional arrangements, according to their preference. Thus, the equilibrium outcome of economic and legal institutional arrangements depends on the balance of power allocated by political

[1] Another sources of nonlinearity (i.e. the inverted U-shape connection between finance and growth) derives from recent studies that question the predominant view of 'more finance, more growth' and show that recent financial crisis demonstrate that such view may not be correct and that the more correct proposition is 'better finance, more growth' (see for example Arcand et al., 2012; Law and Singh, 2014; Samargandi et al., 2015; among others).

[2] Others also show that finance-growth nexus depends on inflation (Huang et al., 2010), openness (Herwartz and Walle, 2014) and stages of economic development (Seven and Yetkiner, 2016).

institutions that the competing groups or individuals possess. This 'new' political economy view has been extended by few recent research which argued for the important of politics and political institutions on corporate finance, banking and securities markets (Pagano and Volpin, 2001), while other focus on the influence of interest groups (Rajan and Zingales, 2003) and democratic reforms (Huang, 2010; Bhattacharyya, 2013) on financial deepening. Recently, HIH theoretical proposition receives increasing empirical supports in the development literature. For example, few recent studies show that political institutions can affect growth indirectly through its conditional influence on the growth effects of growth drivers (e.g. investment, foreign capital inflows, and human capital) including economic institutions, corruption, and conflict-preventing institutions (Aidt et al., 2008; Flachaire et al., 2014; Slesman et al., 2015a).[3] In the finance-growth literature, beside Law et al. (2013) who focus on economic institutions within a cross-section analysis, the important of HIH with respect to the finance-growth nexus has yet to receive proper attention among researchers. Thus, the recent view on nonlinearity of finance-growth relationship and the important of political institutions as the core dimension of institutional matrix, raise an important question as to whether political institutions has a nonlinear influence on the finance-growth nexus.

The main contribution of this study is our attempt to answer this question. In that we extend cross-sectional study of Law et al. (2013) along HIH and panel data analysis using recent advanced empirical approach of dynamic panel threshold regression (DPTR) framework in our attempt to bridge the HIH and finance-growth literature focusing on a relatively homogenous panel comprising 77 emerging markets and developing countries over relatively longer period of time from 1975 to 2010 with five-year non-overlapping periods. In our case, DPTR has a main advantage in allowing the data to search (rather than impose like the case of interaction term model)[4] for nonlinear structure in finance-growth relationship that are conditional on qualities of political institutions. A recent study by Williams (2016) using linear interaction model shows that democratization monotonically lower the marginal positive effect of financial development on growth in developing countries. This finding seems to contradict recent evidences that show democratization increases the level of financial development (Huang, 2010; Bhattacharyya, 2013) and that better quality of economic institutions provide a conducive environment for the positive growth effects of financial deepening (Law et al., 2013). Our study contributes to this debate through the use of nonlinear empirical approach that can better link the matrices of political institutions and finance-growth nexus along the HIH view.

Unlike Williams (2016), our empirical finding from nonlinear model shows strong and robust evidences that financial development only enhances economic growth in emerging markets and developing countries that sufficiently attain the quality of democratic political institutions (and reform) above a certain minimum threshold level. These findings stand firm regardless of using different alternative individual as well as aggregate measures of political institutions that reflect both the qualities and extent of reforms of political institutions, and also to alternative measures of financial development indicators including banking and stock market development. These are in line with recent evidence (Law et al., 2013; Huang, 2010; Bhattacharyya, 2013) and HIH postulation that political institutions indirectly influence growth process (Acemoglu et al., 2005; Flachaire et al., 2014) which we further show that it works through financial deepening channel. Our paper implies that nonlinear empirical approach may better be able to capture the empirical relationship between political institutions and growth process compare to linear interaction model.

The remaining of this paper is as follow. Section 2 provides the discussion on the model specification, and methodology and data employed. Then, the empirical finding are reported and discussed in Section 3 follows by Section 4 to summarize and conclude the paper.

2. Model Specification, Methodology and Data

We consider the nonlinear empirical growth model (Islam, 1995; Law et al., 2013) as follow:

$$y_{it} = (1+\alpha)y_{i,t-1} + \beta_1 FIN_{it} I(PINS_{it} \le \gamma) + \delta_1 I(PINS_{it} \le \gamma) + \beta_2 FIN_{it} I(PINS_{it} > \gamma) + \theta' X_{it} + \eta_i + u_{it}$$

Eq. (1)

Or

$$y_{it} = \tilde{\beta} y_{i,t-1} + \beta_1 FIN_{it} I(PINS_{it} \le \gamma) + \delta_1 I(PINS_{it} \le \gamma) + \beta_2 FIN_{it} I(PINS_{it} > \gamma) + \theta' X_{it} + \eta_i + u_{it}$$

Eq. (2)

[3] Flachaire et al. (2014) and Slesman et al. (2015a) show PINS can indirectly affect growth through economic institutions while Aidt et al. (2008) show the effect of PINS on the corruption-grow
[4] The alternative interaction model imposes a restrict
effect of finance on growth *monotonically* increases or de[illegible] the level of institutions. If the relationship is characterized by an inverted U-shaped, then linear interaction model may not be appropriate (see, Berry et al., 2012).

Subscript i and t indicate country and time index respectively, y_{it} is the log transformation of real GDP per capita, X_{it} is a vector of other control variables hypothesized to affect output growth, η_i is a time-invariant unobserved country-specific effect term, and μ_{it} is the usual error term. As in Islam (1995), the coefficient on $y_{i,t-1}$ should be positive to indicate conditional convergence and negative if divergence (see also Slesman et al., 2015a).[5] Positive-signed coefficient on the lag dependent variable would confirm convergence hypothesis where laggard countries grow faster than, and catch-up with, advanced countries. Since growth literature provide no clear guidance on the set of control variables to be included in the growth regression, we opt for the theoretical driven ones that included the log of initial income, population growth, the investment ratio, and Barro and Lee's (2013) stock of secondary schooling to proxy for human capital. These set of control variables reflect growth model augmented human capital extended in Mankiw et al. (1992).[6] Furthermore, these controlled variables were also used as base control variables in the robust study using extreme bound analysis (EBA) (Levine and Renelt, 1992).

The focal variable of this study is FIN_{it}, the level of financial development. FIN_{it} is allowed to influence long-run economic growth depending on whether $PINS_{it}$, quality of political institutions, is below or above the estimated threshold γ as defined by indicator function $I(.)$. This indicator takes the value of 1 if $PINS_{it}$ is below γ and 0 otherwise for the low-PINS regime, and the same application is also applied for high-PINS regime. Through this specification, the effects of FIN_{it} on growth is measured through coefficient β_1 (β_1) in low-PINS (high-PINS) regimes. We also include regime intercept, δ_1, to account for regime bias in the context of panel threshold regression. The reason of doing so is that Bick (2010) shows that omitted variable biases in the panel threshold model can be severed. Failure to control for regime specific effects can severely bias the estimated coefficients.

To estimate Eq. (2), we rely on the dynamic panel threshold regression (DPTR) proposed by Kremer et al. (2013) as an extension of Hansen's (1999) non-dynamic panel threshold regression method. DPTR make use of Caner and Hansen (2004) instrumental variable threshold (IVTR) methodology to correct for endogeneity bias that is due to the included lag dependent variable in the context of dynamic growth regression. First and foremost, the application of DPTR considers two sets of regressors contain in X_{it}. The first set, X_{1it}, contain exogenous (or predetermined) variables and the other subset, X_{2it}, contain endogenous variables which correlated with μ_{it}. As in Law and Singh (2014), the lag-dependent variable, y_{it-1}, is considered to be endogenous and belong to X_{2it} while the rest of the remaining regressors belong to X_{1it}. Then, the DPTR procedure is as follow.

A fixed-effects transformation is conducted on the model to get rid of country-specific terms using Arellano and Bover's (1995) forwards orthogonal deviations transformation instead of the standard within transformation employed in Hansen (1999). This is to avoid serial correlations in the transformed error terms. Another advantage of such transformation is that the methodology developed in Caner and Hansen (2004) can be used in the context of dynamic panel specification (see Law and Singh, 2014). Next, Caner and Hansen's (2004) IVTR procedure is relied upon to estimate regression coefficients. Briefly, IVTR procedure involves three steps. First, Ordinary Least Square (OLS) estimation is used on the reduced form regression that expresses lag-dependent variable (i.e.y_{it-1}) as a function of its instruments. Following Arellano and Bover (1995) and Kremer et al. (2013), we use the lag values of y_{it-1} as instruments for y_{it-1}. Then the predicted values of the lag-dependent variable are generated and replace the one (i.e. the original lag-dependent variable) in the structural equation, Eq. (2). Then, the second step involving running the sequences of regressions using OLS on Eq. (2) in the search to compute the threshold value, $\hat{\gamma}$. The threshold value, γ, of PINS is selected when it minimizes the sum of square residuals, denoting $S(\gamma)$, i.e. $\hat{\gamma} = \text{argmin} S(\gamma)$. Then, the confidence interval for the threshold variable can be constructed as $\hat{\Gamma} = \{\gamma : LR_n(\gamma) \leq C(\alpha)\}$ where $\hat{\Gamma}$ is an asymptotic confidence region for γ; $C(\alpha)$ is the percentile asymptotic confident interval for threshold values of the asymptotic likelihood ratio. Finally, once $\hat{\gamma}$ is determined, the slope coefficients are then estimated using generalized method of moments (GMM).

We estimate Eq. (2) using DPTR on a panel of 77 developing and emerging economies over the period 1976–2010, selected based on the availability of reliable data. Appendix A provides the list of countries included in this study. In order to smooth out the business cycle fluctuations and focus on the medium- and long-term relationship between political institutions and finance-growth nexus, we use 5-year averages of the variables. The sample period is divided into seven non-overlapping five-year periods (1976–1980, 1981–1985, 1986–1990, 1991–1995, 1996–

[5] The speed of convergence λ can be derived by solving $\tilde{\beta} = 1 + \alpha = \exp(-\lambda t)$ where t is the time between current and lagged income, which is 5 in this paper.

[6] This unclear guidance from growth literature maybe due, in part, to the fact that researchers have detected that there are as many potential growth-determinants as the number of countries currently exist for the analysis (Durlauf, Johnson, and Temple, 2005)

2000, 2001–2005, 2006–2010), reducing the time dimension to seven.[7] For some countries, data are missing for some years, so we are dealing with an unbalanced panel. The sample period is chosen partly for convenience and because of data limitations for some control variables that enter the model specification. Data for the variables used in the analysis were taken from the Penn World Tables (PWT, version 7.1) and the World Bank's World Development Indicators (WDI). The dependent variable is the log of per capita real (weighted chained series) GDP (*LRGDPC*), as reported in the PWT. The regressors used in this paper are classified into stock and flow variables. Stock variables are measured at the beginning of each non-overlapping five-year period, while flow variables are measured as the average over each five-year period. Stock variables consist of logged initial income (measured in 1975, 1980 , ... , 2005, if the dependent variable is measured in 1980, 1985 , ... , 2010) and Barro and Lee's (2013) average year of secondary schooling (as a proxy for human capital) (*SCHOOL*). The flow variables are real investment shares of real GDP (*INV*) (PWT), population growth (WDI), and all measures of financial development (*FIN*) and political institutions (*PINS*). The measurements of FIN and PINS are described below.

To measure financial sector development we follow the economic literature (Alfaro et al., 2004; Azman-Saini et al., 2010) by using the banking sector compile in the extended World Bank's *Financial Structure Database* (Beck et al., 2009). Our main measure of banking sector development is private sector credit (PCR) which is equal to the value of credits issued by financial intermediaries to the private sector divided by GDP.[8] PCR has been the most preferred indicator of financial sector development as it isolates credit related to the public sector to measure directly the intensity and efficiency of private financial services (Levine et al., 2000; McCaig and Stengos, 2005). In our robust checks we also use alternative indicators to this PCR namely bank credit (BCR), commercial bank asset (CBA), and liquidity liability (LLY). BCR captures deposit money bank credits to the private sector divided by GDP, CBA is the ratio of commercial bank assets to commercial bank plus central bank assets, and LLY capture liabilities of the financial system, which is computed as currency plus demand and interest-bearing liabilities of bank and non-banks intermediaries divided by GDP. PCR, BCR, LLY and CBA reflect banking sector (or credit market) development and are highly correlated as Table 1 below shows up to 0.98. To deal with this we construct new measure of banking sector development from these four indicators using principle component factor analysis. The results reported in Appendix C shows they fit uniquely into one component indicator of financial development.[9] To further deepen our checks, we add in two alternative measures of financial development that reflect the size and liquidity of local stock markets. In that, we use ratio of market capitalization of domestic company to GDP (STMKTCAP) to capture the size of the stock market, and values of stock trading relative to GDP (STVALTRADED) to approximate stock market liquidity in an economy. Both variables are from Beck et al. (2009) and are commonly used in the literature to reflect stock market (equity market) development (see, Levine & Zervos, 1998).[10]

To measure political institutions (PINS), we employ a commonly used measure of PINS namely the Freedom House's measure of political rights (PR) which captures the extent of 'electoral democracy'[11] and the associate constraint placed on those holding power. PR has a score of 1 (highest level of political rights) to 7 (lowest level of political rights). To be consistent with existing literature and our alternative indicators of PINS, e.g. Political Constraint Index, we convert PR to stand between 0 and 10, higher score mean higher level of political rights. Furthermore, a recent research by BenYishay and Betancourt (2014) shows that quality of political institutions commonly capture through the form of electoral democracy miss another crucial dimension of democracy: 'civil liberty'. They further show that civil liberty, a more persistent component of democracy, complements political rights in influencing future level of democracy.[12] Thus, in

[7] In our sample, the missing data is only for a small number of countries. We included only countries with the minimum numbers of half-decade time dimension for all variables of at least 4, the minimum data requirement for generalized method-of-moments (GMM) panel estimator to which DPTR relies upon to estimate the regression coefficients.

[8] Although LLY usually used to measure depth of financial development, as this measure reflects the overall size of the financial intermediary sector, it, however, does not distinguish between the allocation of capital to the private sector and to various governmental and quasi-government agencies.

[9] Appendix C shows a unique factor component can be extracted from these four highly correlated variables. See Slesman et al. (2015a) for a detail application of principle component factor analysis on institutions data.

[10] The sample size is reduced substantially from 77 countries to 50 countries.

[11] Acemoglu and Robinson (2006, Chapter 3) refer electoral democracy to "the institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people's vote (p. 48)". Thus, PR reflects the extent to which citizen and the political parties participate in the political process to govern the country.

[12] Political science literature views democracy in various forms (e.g. electoral, liberal, majoritarian, participatory, deliberative and egalitarian) (see a survey by Coppedge et al., 2011). The differentiate feature of 'electoral democracy' from that of 'liberal democracy' is civil liberty. Tilly (2007, p. 13 and 45) explain 'liberal democracy'

this study we combine (i.e. average) the measures of political rights (PR) and civil liberty (CL)[13] to construct a better measures of political institutions to allow it to influence on the finance-growth nexus in emerging market and developing countries.

To robust check on our main result reported in Table 2 below, we conduct extensive checks by using alternative measures of PINS. We approach both specific single measures of PINS and multi-dimensional measures of PINS using principle component analysis. First, for specific single measures, we use six alternative measures namely Henisz's (2000) index of Political Constraints (POLCON), Polity IV measures of Executive Constraints (EXCON), and Democracy (DEMOC) (Marshall and Jaggers, 2011), indicator of Check and Balance constraints (CHECK) in the political system of Beck et al. (2001) World Bank Database of Political Institutions (DPI), Independent Judiciary of CIRI human rights dataset provided by Cingranelli and Richard (2010) and Polity IV measures of political institutions improvement (POLITY2).

POLCON captures the institutional constraints on the decision-making powers of chief executives, individually or collectively, from other independent veto powers in the political system (legislative, judiciary and sub-national/federal political entities). It reflects the degree of checks and balances mechanism within the national political structure (political system) on the complex political interactions of five veto power points (executives, lower and upper legislative chambers, judiciary and sub-federal political entities), party preferences and preference heterogeneity over a country's policy changes. POLCON takes the scores between 0 (most hazardous/lowest constraints) and 1 (strong constraints). To be consistent with our main measure, the scores are converted to 0 to 10 scale, higher score means better quality of political institutions (or strong check and balance). Furthermore, POLICON is an improved measure on CHECK. While CHECK[14] assumes a linear relationship between veto power points, relying on spatial model POLCON further takes into account the diminishing marginal returns to the subsequent additional veto power players to the overall measure. CHECK range from 1 (lowest) to 18 (highest). Apart from POLCON and CHECK, we also use EXCON and DEMOC indices of Polity IV data set as alternative measures of political institutions. EXCON ranges between 1 (unlimited authority) to 7 (executive parity or subordination) while DEMOC ranges from 0 to 10 scales, higher value means more democratic. These two measures are used in the literature for example by Acemoglu et al. (2005) and Rodrik (1999) respectively. Furthermore, to capture the degree of separation (i.e. free from control) of the judiciary from executive and legislative powers, we use Independent Judiciary indicator (JUDIND) of CIRI dataset constructed by Cingranelli and Richard (2010) to capture another dimension of political institutions matrix. JUDIND ranges from 0 (not independent) to 2 (generally independent). All these indicators are used by recent literature to reflect matrices of political institutions (see for example, Jones and Tarp, 2016). Our second approach to alternative measures of PINS in the robust checks is that we further construct a new indicator of PINS from PR, CL, POLCON, CHECK, EXCON, DEMOC, and JUDIND using principle component factor analysis. The results reported in Appendix C shows they fit uniquely into one component indicator of political institutions.

To deepen our analysis further, we also use political institutional reform index of POLITY2 to capture the political institutional reform overtime and across countries. POLITY2 differs from the above indicators because it is a combined polity scores that subtracts autocracy score (maximum score of -10 for full scale autocracy) from democracy (DEMOC) score (maximum score of +10 for full scale democracy). Thus, POLITY2 reflects the extent of reform to democratic process that guarantee universal suffrage for citizen, institutionalized constraints including checks and balance system on the exercise of power by the executives, and respects for basic political rights such as freedom of assembly, speech and the press. Using POLITY2, Huang (2010) and Bhattacharyya (2013) shows greater extent of reforms in political institutions promotes financial development in developing countries. With this robust check, we also extend Huang (2010) and Bhattacharyya (2013) to provide evidence as to what extents of reforms in the quality of political institutions provide conducive institutional environment for financial development to effect growth in the long-run. As mentioned in the introduction, Williams (2016), using linear interaction model, shows that democratic reform instead reduces the marginal growth effect of financial development in developing countries. Thus, given evidence presented in Huang (2010) and Bhattacharyya (2013), evidence on the link between political institutional reforms and finance-growth nexus seems to be contradicting. This

that "a regime is democratic to the degree that political relations between the state and its citizens feature broad, equal, protected and mutually binding consultations (p.13)" and that "...roughly speaking, political rights correspond to broad, equal, mutually binding consultations, whereas civil liberties refer especially to protection (p. 45)".

[13] Data on CL is also from freedom house. It is also converted from 1-7 to 0-10 scale in the same manner as PR.

[14] See Beck et al. (2001).

study seeks to settle the debate by employing nonlinear empirical model.

Table 1 reports the summary statistics on the variables discussed above. Furthermore, the detail definitions and sources of data on variables are provided in Appendix B.

[Table 1 Insert here]

3. Empirical Results and Discussion

Table 2a summarizes the main finding on the threshold effects of political institutions on growth effects of financial development in emerging market and developing countries. First and foremost, we notice that all control variables (log of initial income, population growth, investment ratios, and schooling) carry the expected sign, but only log of initial income and investment ratios are significant at the 1 percent level or higher. This is in line with extant growth literature (e.g. Levine and Renelt, 1992; Islam, 1995; Law and Signh, 2014, among others). Additionally, the significant and magnitudes of the coefficients of these variables appear to be fairly robust across the three specifications.

[Insert Table 2a here]

Turning to our focal variable PINS and FIN, the results show as follow. Using three main measures of political institutions (PINS), i.e. political rights (PR), civil liberty (CL), and the average of PR and CL (PRCL), as threshold variables, the results show, with 95% confidence interval, the existence of threshold effects from each of these measures of political institutions. Notice that the estimated threshold values of 7.86 with 95% confident interval [2, 8.29] for PR, 6.42 [2.86, 7.43] for CL, and 7.5 [2.86, 8] for PRCL are slightly higher than their mean values of 6, 5.87, and 5.94 respectively on the scale of 0 to 10, imply that the threshold restrictions of PINS on the finance-growth nexus are relatively high in these developing countries. In a related study on the effects of political institutions on the corruption-growth nexus in developing and developed countries, Aidt et al. (2008) also find that threshold restriction of political institutions (measure by political accountability), on the corruption-growth nexus, to be also high ranging between 0.5-0.75 on a scale of 0 to 1.

Thus, our findings clearly suggest that the nature of the effect of financial development on growth depend nonlinearly on the embedded qualities of political institutions a developing country possesses. Coefficient assessments on Table 2 show that developing countries score on the quality of political institutions (i.e. high political rights and civil liberties, or electoral and liberal democratic political institutional qualities) above threshold scores (i.e. high-PINS regime) realize a positive, robust, and statistically significant growth effect of financial development: a 1 percent increase in financial deepening (i.e. the ratio of private credit to GDP) lead to an annual growth of real income per capita between 0.12-0.14%. This magnitude effect is relatively lower than 0.93-1.57% found in cross-sectional study on developed and developing countries by Law et al. (2013) who use economic institutions as threshold variables (i.e. aggregate on three measures of International Country Risk Guide, ICRG, namely corruption, rule of law and bureaucratic quality).[15] Two possible explanations can be made. First, the magnitude effects found in Law et al. (2013) maybe driven by developed countries with sophisticated financial system and better qualities of economic and political institutions. Second, unlike Law et al. (2013) who used cross-sectional data of mixed developed and developing countries, we used panel data on emerging markets and developing countries and cover over longer period of time, 1975-2010, compared with 1980-2008. Furthermore, it may also be due to five-year non-overlapping moving average panel nature of our study that focuses on medium- to long-run growth effects. While this finding is in line with Law et al. (2013), it contradicts with Williams (2016) who shows that though financial development promotes growth at lower qualities of political institutions (measured by PR) in developing countries, their marginal growth effect turns negative when their political institutions surpass above 0.87 level of PR on the scale of 0 to 1.[16] However, it is unclear, without the computed standard errors, whether these marginal effects are statistically significant (see Table 6 in Law and Singh, 2014, p. 43; Berry et al., 2012).

In contrast to high-PINS, countries scoring on the quality of PINS below the threshold score during any haft decade (i.e. low-PINS regime) record insignificant effect of financial deepening on growth. This suggests that in low-PINS regime, financial deepening plays no conclusive role in influencing economic growth. It is interesting to emphasize that the positive coefficient $\hat{\beta}_1$, though mainly insignificant, couple with high threshold restriction of political institutions implies that countries with low-quality of political institutions would have no clear gain from the financial deepening. This finding not only supports recent study (e.g. Law et al., 2013) but importantly suggest that better quality of political institutions can play a more

[15] Slesman et al. (2015a) have shown, using principle component analysis, that above ICRG's measures reflect closely economic institutions.

[16] From Table 2 of the paper, the turning point of 0.87 is computed as PR or FH = 0.13/0.15.

indirect role in defining the conducive environment for financial deepening to yield positive influence on long-run economic growth in emerging market and developing countries. Our results support the conditional 'more finance more growth' view: more finance more growth but in good quality of political institutional environment. Good and stable political environment in emerging market and developing countries that enables individual to freely participate in the political process, for example rights to vote or stand for offices, as well as freedom of expression, association and assembly, and freedom to be protected under the rule of law and due process can both influence the policy outcomes and put constraints and checks in the political system that potentially shape the functioning of financial markets. As theoretical postulation on the 'hierarch of institutions' mentioned above implies, such environment would ensure, among others, that political elites who possess political power would be constrained and checked from introducing credit policy and regulatory arrangements that favor their own self- or group-interest. This would increase the functioning of financial system and divert financial resources from unproductive to the productive investments by minimizing the information gap between politically connected investors and average savers so that the former would not easily obtain credits for bad investment projects using political connections while the later are completely unaware of such risks (Bhattacharyya, 2013, p. 980).

3.1 Robust checks

Overall, the results using private credit (PCR) as a measure of financial development are robust to all the main measures of political institutions (PINS) used in this paper. We further conduct a large number of robust checks on the results to alternative measures of political institutions and financial development, and additional variables including policy variables and economic freedom. First, as mentioned in preceding section, we employ seven additional alternative measures of PINS as threshold variables, namely measures of political constraints (POLCON)[17], executive constraints (EXCON), democracy (DEMOC), checks and balance constraints (CHECK), independent judiciary (JUDIND), and first principle components all the measure of political institutions (PC1PINS), and POLITY2, a measures of political institutional reform. The results are reported in Table 2b.

[Insert Table 2b here]

We observe from Table 2b that the existence of threshold effects of political institutions on finance-growth relationship and the positive growth effects of FIN in high-PINS regimes are highly robust to the use of these alternative indicators. This is so even when measures of political institutional reform (POLITY2) and first principle component of all banking sector financial development indicators (PC1FIN) are used. This is highly in line with the main results reported in Table 2a and recent studies on the important of institutional reforms for financial development (Huang, 2010; Bhattacharyya, 2013) which we show further in this paper that the growth dividend of financial depending can be accrued in developing countries with quality of political institutions and their reforms reach above a minimum threshold level which varies according to different dimensions of political institutions, as can be seen in Table 2b. Furthermore, we also observe the growth effects of FIN in low-PINS regime show some positive sign and statistically significance in three out of seven cases (i.e. when EXCON, DEMOC and CHECKS are used as threshold variable) suggesting, partially in line with Williams (2016), that there exist positive effect of FIN on growth in low-quality of political institutions, albeit lower in magnitude effects compare to high-POINS regime and quite fragile as further robust check show below.

Next, as described above, we turn to our next set of robust checks by repeating the estimation in Table 2a but this time using alternative measures of FIN both alternative bank-based financial development indicators [BCR, LLY, CBA, and first principle component of PCR, BCR, LLY and CBA (PC1FIN)] and stock market development indicators (STMKTCAP and STVALTRADE). The results are reported in Table 3a and 3b.

[Insert Table 3a and 3b here]

Table 3a reports the results with PR as threshold variable which show regardless of which measures of bank-based financial development is used the main results remain intact for high-PINS regime except that when CBA and PC1FIN are used low-PINS regime realize positive and significant growth effects. This is also the case when CL, PRCL, and PC1PINS (only the case of FIN = PC1FIN) are used as threshold variables as reported in Table 3b. McCaig and Stengos (2005) found that CBA is weakest indicator of financial development and it performs poorly in growth equations (see also Baharumshah et al., 2015). Turning to stock market development indicators, however, we observe that when FIN is measured with ratio of stock market capitalization (STMKTCAP) the positive significant of FIN in high-PINS (PINS = PR, CL, and PRCL) disappears. It remains significant only when PINS is measure as

[17] We also go deeper on POLCON as threshold variable when alternative measures of FIN (BCR, LLY, CBA, STMKTCAP and STVALTRADE) are used which we look further below. The results are highly robust and are available upon request from the authors.

PC1PINS (in Table 3b). Only when FIN is measured with values of stock trading relative to GDP (STVALTRADE), the results are robust but with the growth effect of FIN in low-PINS regime now turn negative and statistically significant at 5% or 10% as reported in Table 3a and 3b. Overall, this implies that only the relationship between liquidity of the stock market (not the size) and growth are robustly affected by threshold restriction of quality of political institutions. Since STVALTRADE is well in line with stock market liquidity theory (Levine, 1991) suggesting that high-quality institutional political environment would enable highly liquid stock market to contribute to growth. It is interesting to note that the restrictions are quite low compared to banked-based financial development: 5.7, 4.6, 5.4, and -0.26 respectively for PR, CL, PRCL and PC1PINS.

[Insert Table 4 here]

Finally, we check the sensitivity of the main result along additional policy variables and economic freedom. These additional explanatory variables are trade openness, government expenditure, inflation, economic freedom (EF) and its selected components namely legal structure and security of property rights (PRORIGHTS), and regulation of credit, labor, and business (REG). Space constraint, we restrict the check only with PR as threshold variable.[18] The results are reported in Table 4. It shows that the coefficients on trade openness, government expenditure, inflation, economic freedom, carry the expected signs and four (trade openness, inflation, EF, REG) out of six are statistically significant at the 1 percent level confirming existing theories that trade promotes growth while inflation harms growth, and that higher quality of economic institutions (EF) and regulation enhance growth. Importantly, we note that although the positive magnitude effect of FIN on growth in high-PINS regime remains unchanged, an interesting finding is that threshold restrictions of PR for Model 4 (control for EF) and Model 6 (control for REG) are reduce substantially when EF and REG are statistically significant.

In summary, the finding from this paper shows that there is a clear robust, positive and significant effect of financial development on medium- to long-run economic growth in emerging market and developing countries that score their quality of political institutions above a critical optimum level. The same positive effect is not robust in low-PINS regime. All in all, the evidences provided in this study not only confirm well with recent study on the threshold effect of economic institutions on finance-growth nexus (Law et al., 2013) but also extends and synthesize them with recent research (Aidt et al., 2008; Flachaire et al., 2014; Slesman et al., 2015a) that emerge to support the so-called 'hierarchy of institutional hypothesis (HIH)' advanced by Acemoglu et al. (2005). We extend and show that PINS also influence growth process through its influence on financial system and development in emerging markets and developing countries commonly experience with wide variation in their PINS environment.

4. Conclusion

This study is motivated by recent emerging theoretical and empirical evidences that political institutions determine emerging and persistent of equilibrium economic institutions, i.e. HIH, and the growth process (Acemoglu et al., 2005; Aidt et al., 2008; Flachaire et al., 2014; Slesman et al., 2015a) and that institutions play an important contingency role in finance-growth nexus (Law et al., 2013). It incorporates HIH and extends the recent cross-sectional growth evidence on the nonlinear role that political institutions play in finance-growth nexus. Our results show that there are robust evidences that qualities of political institutions play a crucial role in emerging market and developing countries in providing conducive environment for financial markets to flourish and promote growth.

Specifically, the finding in this paper was derived from the used of nonlinear dynamic panel threshold regression (DPTR) framework on a panel of 77 emerging market and developing countries over the period 1975-2010. DPTR allows the data to search and estimate the optimum threshold levels of quality of political institutions in the finance-growth relationship. Our finding shows that developing countries having score on their quality of political institutions (i.e. high-PINS regime) have robust positive growth benefit from financial deepening compare to a rather fragile evidence recorded on the positive growth benefit for countries having score of their political institutions fall below the estimated optimum threshold level of political institutions (i.e. the low-PINS regime).

One crucial policy option to be derived is that developing countries should devise strong political institutional constraints in the political system to check and balance those possessing political powers so that credit and equity markets development yield positive growth dividend. It is well-acknowledge that political institutions reform requires political will, long-term commitments with lag benefits, i.e. it takes time to realize the benefit from reforms. Recent research argues that political institutions reform may take

[18] The results with CL, PRCL and PC1PINS as threshold variables produce similar results.

shorter lag than commonly perceived. For example Méon et al. (2009) show that improvement in institutional constraints only takes five year to yield benefits. Thus, our study provides insight into the potential growth benefit from financial deepening that can be derived from institutional reforms to upgrade qualities of political institutions.

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Table 1
Summary statistics

	y_{it}	*POP*	*INV*	*SC*	*PCR*	*BCR*	*LLY*	*CBA*	*ST1*	*ST2*	*P1*	*P2*	*P3*	*P4*	*P5*	*P6*	*P7*	*P8*	*P9*
Mean	8.19	2.08	23.10	1.56	49.53	47.42	47.66	92.76	57.72	38.87	6.0	5.87	2.34	4.19	4.35	2.57	1.11	-0.06	1.58
Minimum	5.86	-2.75	-1.53	0.06	1.63	1.63	5.21	7.10	0.11	0.002	1.42	1.42	0	0.2	0	1	0	-1.9	-10
Maximum	11.21	7.05	61.5	4.75	892.1	892.1	653.5	1000	789.9	665.8	10	10	6.87	7	10	14.4	2	1.93	10
Stan. deviation	1.10	1.12	10.03	0.99	1.63	112.6	60.15	94.93	118	118.1	2.58	2.04	1.90	2.11	3.65	1.52	0.61	1.01	6.73
Observation	499	499	499	499	499	499	485	485	261	261	499	499	499	485	485	492	441	499	492
No. Countries (N)	77	77	77	77	77	77	75	75	50	50	77	77	77	75	75	76	77	77	76
No. Periods (T)	6.48	6.48	6.48	6.48	6.48	6.48	6.47	6.47	6.47	6.47	6.48	6.48	6.48	6.47	6.47	6.47	5.72	6.48	6.47
y_{it}	1.00																		
Popu. Growth (POP)	-0.24	1.00																	
Invest. ratio (INV)	0.05	0.12	1.00																
Secon. school (SC)	0.50	-0.19	0.17	1.00															
PCR	-0.09	-0.04	-0.06	0.01	1.00														
BCR	-0.12	-0.04	-0.09	-0.01	0.98	1.00													
LLY	-0.05	-0.08	0.07	0.09	0.86	0.86	1.00												
CBA	-0.16	-0.05	-0.13	-0.07	0.88	0.92	0.74	1.00											
ST1: STMKTCAP	-0.02	-0.06	0.03	0.10	0.91	0.90	0.91	0.83	1.00										
ST2: STVALTRAD	-0.08	-0.07	-0.02	0.04	0.93	0.94	0.89	0.90	0.95	1.00									
P1: Political rights	0.31	-0.33	-0.05	0.27	-0.15	-0.17	-0.10	-0.19	-0.11	-0.12	1.00								
P2: Civil liberty	0.34	-0.42	-0.03	0.33	-0.14	-0.17	-0.09	-0.19	-0.10	-0.12	0.89	1.00							
P3: Political constr.	0.15	-0.26	-0.10	0.09	-0.12	-0.14	-0.08	-0.16	-0.12	-0.13	0.60	0.52	1.00						
P4: Executive constr.	0.18	-0.34	-0.17	0.19	-0.19	-0.20	-0.18	-0.20	-0.15	-0.17	0.83	0.75	0.62	1.00					
P5: Democracy	0.22	-0.36	-0.16	0.23	-0.14	-0.15	-0.15	-0.15	-0.11	-0.13	0.87	0.80	0.59	0.96	1.00				
P6: Checks	0.03	-0.18	-0.07	0.03	-0.09	-0.08	-0.08	-0.06	-0.06	-0.05	0.49	0.39	0.37	0.55	0.57	1.00			
P7: Judiciary indep.	0.25	-0.18	0.01	0.16	-0.16	-0.19	-0.11	-0.21	-0.11	-0.14	0.49	0.46	0.31	0.40	0.43	0.20	1.00		
P8: PC1PINS	0.25	-0.37	-0.11	0.23	-0.18	-0.19	-0.15	-0.21	-0.14	-0.16	0.93	0.86	0.72	0.92	0.94	0.64	0.53	1.00	
P9: Polity2	0.14	-0.33	-0.14	0.19	-0.13	-0.13	-0.12	-0.14	-0.09	-0.10	0.83	0.75	0.60	0.92	0.95	0.58	0.34	0.92	1.00

Notes:

Table 2a Political institutions and finance-growth nexus in developing countries

	FIN = Private credit/GDP		
	Threshold variable: Political institutions (PINS) = Political rights (PR)	Threshold variable: Political institutions (PINS) = Civil liberty (CL)	Threshold variable: Political institutions (PINS) = Average of political rights and civil liberty (PRCL)
Threshold estimates $\hat{\gamma}$	7.8571	6.4285	7.5000
95% confidence interval	[2.0000, 8.2857]	[2.8571, 7.4285]	[2.8571, 8.0000]
Financial development (FIN)			
$\hat{\beta}_1$ (PINS $\leq \gamma$)	0.0007 (0.0005)	0.0008 (0.0005)	0.0009 (0.0005)
$\hat{\beta}_2$ (PINS $> \gamma$)	0.0012 (0.0004)***	0.0014 (0.0004)***	0.0014 (0.0004)***
Covariates			
Initial income (log)	0.6949 (0.1846)***	0.6788 (0.1851)***	0.6434 (0.1967)***
Population growth	− 0.0161 (0.0181)	− 0.0163 (0.0175)	− 0.0095 (0.0182)
Investment ratio	0.0074 (0.0015)***	0.0069 (0.0015)***	0.0071 (0.0014)***
Secondary schooling	0.0707 (0.0489)	0.0636 (0.0485)	0.0504 (0.0487)
$\hat{\delta}_1$ (regime intercept)	− 0.0704 (0.0296)**	− 0.0796 (0.0247)***	− 0.0710 (0.0306)***
Time dummies	Yes	Yes	Yes
Country/Observation	77/496	77/496	77/496

Notes: As in Hansen (1999), each regime contains at least 5% of the observations. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 2b Alternative measures of political institutions (PINS)

Threshold variable: Political institutions, PINS	Financial development, FIN = Private credit/GDP							FIN = PC1FIN, First Principle Component of PCR, BCR, LLY & CBA	
	PINS = Political constraint (POLCON)	PINS = Executive constraint (EXCON)	PINS = Democracy (DEMOC)	PINS = Checks (CHECK)	PINS = Independent judiciary (JUDIND)	PINS = PC1PINS	PINS = Polity2	PINS = PC1PINS	PINS = Polity2
Threshold estimates $\hat{\gamma}$	2.9468	5.800	6.80	1.200	0.400	-0.2207	-8.400	0.8297	-8.40
95% confidence interval	[0.000, 4.1469]	[5.000, 5.800]	[5.00, 7.80]	[1.000, 3.800]	[0.000, 0.400]	[-1.4619, 0.9528]	[-9.00, 8.00]	[-1.462, 0.9528]	[-9.00, 8.00]
Financial development (FIN)									
$\hat{\beta}_1$ (PINS $\leq \gamma$)	0.0008	0.0010***	0.0011***	0.0012***	0.0006	0.0006	0.0016	0.2145***	0.1904***
	(0.0005)	(0.0003)	(0.0003)	(0.0005)	(0.0004)	(0.0004)	(0.0041)	(0.0621)	(0.0576)
$\hat{\beta}_2$ (PINS $> \gamma$)	0.0013***	0.0024***	0.0025***	0.0013***	0.0012***	0.0016***	0.0012***	0.4071**	0.2114***
	(0.0004)	(0.0009)	(0.0009)	(0.0004)	(0.0004)	(0.0004)	(0.0003)	(0.1733)	(0.0551)
Covariates									
Initial income (log)	0.6700***	0.6366***	0.6250***	0.7051***	0.7802***	0.7266***	0.7564***	0.6659***	0.6969***
	(0.1968)	(0.1882)	(0.1923)	(0.1935)	(0.1787)	(0.1847)	(0.1709)	(0.2149)	(0.1754)
Population growth	− 0.0071	− 0.0064	− 0.0060	− 0.0099	− 0.0084	− 0.0209	− 0.0087	− 0.0173	− 0.0078
	(0.0185)	(0.0206)	(0.0204)	(0.0205)	(0.0191)	(0.0180)	(0.0213)	(0.0175)	(0.0206)
Investment ratio	0.0071***	0.0053***	0.0054***	0.0072***	0.0063***	0.0067***	0.0060***	0.006***	0.0064***
	(0.0014)	(0.0014)	(0.0014)	(0.0015)	(0.0014)	(0.0016)	(0.0014)	(0.0014)	(0.0013)
Secondary schooling	0.0489	0.0461	0.0486	0.0684	0.0439	0.0482	0.0553	0.0407	0.0540
	(0.0513)	(0.0434)	(0.0440)	(0.0528)	(0.0482)	(0.0492)	(0.0480)	(0.0475)	(0.0474)
$\hat{\delta}_1$ (regime intercept)	− 0.0197	− 0.0601**	− 0.0564***	0.0483*	− 0.0493**	− 0.0587**	0.1732***	− 0.1630***	0.2642
	(0.0186)	(0.0267)	(0.0246)	(0.0256)	(0.0240)	(0.0236)	(0.0569)	(0.0475)	(0.0590)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country/Observation	77/496	75/485	75/485	76/492	77/441	77/496	75/485	77/496	75/485

Notes: As in Hansen (1999), each regime contains at least 5% of the observations. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively. PC1PINS is the first principle components of political rights, civil liberty, political constraints, executive constraints, democracy, checks, and independent judiciary. The results of principle component factor analysis for PC1PINS and PC1FIN are reported in the Appendix C.

Table 3a Alternative measures of financial development

	Threshold variable: Political institutions, PINS = Political rights (PR)					
	FIN = BCR	FIN = LLY	FIN = CBA	FIN = PC1FIN	FIN = STMKTCAP	FIN = STVALTRAD
Threshold estimates $\hat{\gamma}$	7.857	7.857	7.857	2.00	7.857	5.714
95% confidence interval	[2.00, 8.214]	[2.00, 8.214]	[7.428, 8.571]	[2.00, 8.571]	[3.714, 8.285]	[5.714, 6.666]
Financial develop. (FIN)						
$\hat{\beta}_1$ (PINS $\leq \gamma$)	0.0002	-0.0001	0.0009**	0.0608**	0.0003	-0.0017*
	(0.0005)	(0.0006)	(0.0003)	(0.0307)	(0.0007)	(0.0009)
$\hat{\beta}_2$ (PINS $> \gamma$)	0.0011***	0.0011***	0.0022***	0.2329***	0.0010	0.0023*
	(0.0004)	(0.0003)	(0.0005)	(0.0632)	(0.0008)	(0.00012)
Covariates						
Initial income (log)	0.6465***	0.6144***	0.9714***	0.5961***	0.716***	0.8626***
	(0.1964)	(0.177)	(0.1830)	(0.2053)	(0.388)	(0.3412)
Population growth	− 0.0071	− 0.0042	− 0.0241	0.0017	− 0.053	− 0.0477
	(0.0181)	(0.0195)	(0.0196)	(0.0198)	(0.031)	(0.0302)
Investment ratio	0.0075***	0.0074***	0.0063***	0.0071***	0.0085***	0.0069***
	(0.0014)	(0.0014)	(0.0015)	(0.0013)	(0.0026)	(0.0026)
Secondary schooling	0.0585	0.0779*	− 0.0192	0.0650	0.0326	0.0045
	(0.0494)	(0.0452)	(0.0508)	(0.0511)	(0.1086)	(0.1049)
$\hat{\delta}_1$ (regime intercept)	− 0.063**	−0.0441	0.0195	0.3052***	− 0.0421	0.0248
	(0.028)	(0.0287)	(0.0507)	(0.0718)	(0.0366)	(0.0374)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country/Observation	77/496	75/485	75/485	77/496	50/261	50/261

Notes: As in Hansen (1999), each regime contains at least 5% of the observations. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Table 3b Alternative measures of financial development

Threshold variable: Political institutions, PINS = Civil liberty (CL)						
	FIN = BCR	FIN = LLY	FIN = CBA	FIN = PC1FIN	FIN = STMKTCAP	FIN = STVALTRAD
Threshold estimates $\hat{\gamma}$	5.238	2.857	4.285	2.857	5.428	4.642
95% confidence interval	[2.857, 6.857]	[2.857, 7.142]	[4.285, 7.428]	[2.857, 7.428]	[4.285, 7.714]	[4.642, 6.857]
Financial develop. (FIN)						
$\hat{\beta}_1$ (PINS $\leq \gamma$)	0.0004	0.0001	0.0015***	0.2085***	0.0001	-0.0021**
	(0.0004)	(0.0005)	(0.0004)	(0.0622)	(0.0007)	(0.0009)
$\hat{\beta}_2$ (PINS $> \gamma$)	0.0015***	0.0014***	0.0031***	0.2329***	0.0018	0.0020**
	(0.0004)	(0.0003)	(0.0007)	(0.0602)	(0.0015)	(0.0009)
Threshold variable: Political institutions, PINS = Average of political rights and Civil liberty (PRCL)						
Threshold estimates $\hat{\gamma}$	7.50	6.00	7.619	3.00	7.571	5.428
95% confidence interval	[5.00, 7.619]	[2.857, 7.619]	[7.571, 8.00]	[2.571, 8.00]	[3.750, 8.00]	[5.00, 7.50]
Financial develop. (FIN)						
$\hat{\beta}_1$ (PINS $\leq \gamma$)	0.0005	− 0.0002	0.0008**	0.1288***	0.0006	-0.0015*
	(0.0005)	(0.0005)	(0.0003)	(0.0403)	(0.0009)	(0.0009)
$\hat{\beta}_2$ (PINS $> \gamma$)	0.0013***	0.0014***	0.0023***	0.2327***	0.0012	0.0025*
	(0.0004)	(0.0003)	(0.0006)	(0.0604)	(0.0010)	(0.0014)
Threshold variable: Political institutions, PINS = PC1PINS						
Threshold estimates $\hat{\gamma}$	-0.171	-0.315	0.037	0.829	-0.264	-0.264
95% confidence interval	[-1.461, -0.085]	[-0.444, -0.247]	[-0.038, 0.038]	[-1.461, 0.952]	[-0.296, -0.264]	[-0.296, -0.264]
Financial develop. (FIN)						

$\hat{\beta}_1$ (PINS $\leq\gamma$)	0.0003	0.0023	0.0032	0.2145***	-0.0016**	-0.0020**
	(0.0004)	(0.0023)	(0.0070)	(0.0621)	(0.0006)	(0.0009)
$\hat{\beta}_2$ (PINS $>\gamma$)	0.0015***	0.0013***	0.0008**	0.4071***	0.0020*	0.0025**
	(0.0005)	(0.0004)	(0.0004)	(0.1733)	(0.0011)	(0.0010)
Country/Observation for each equation.	77/496	75/485	75/485	77/496	50/261	50/261

Notes: As in Hansen (1999), each regime contains at least 5% of the observations. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively. PC1FIN is the principle component of PCR, BCR, LLY and CBA. PC1PINS is the principle component of political rights, civil liberty, political constraints, executive constraints, democracy, checks, and independent judiciary.

Table 4 Additional independent variables

	Threshold variable: Political institutions, PINS = Political rights (PR)					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Threshold estimates $\hat{\gamma}$	7.857	7.857	7.857	3.142	7.857	3.142
95% confidence interval	[2.0, 8.285]	[2.0, 8.285]	[2.00, 8.285]	[2.86, 5.43]	[2.50, 8.57]	[2.86, 7.43]
Financial dev. (FIN)						
$\hat{\beta}_1$ (PINS $\leq\gamma$)	0.0007	0.0007	0.0007	0.0009	0.0008	0.0011*
	(0.0006)	(0.0005)	(0.0005)	(0.0005)	(0.0006)	(0.0006)
$\hat{\beta}_2$ (PINS $>\gamma$)	0.0013***	0.0012***	0.0012***	0.0011***	0.0012***	0.0012**
	(0.0004)	(0.0003)	(0.0004)	(0.0005)	(0.0004)	(0.0006)
Covariates						
Initial income (log)	0.5287***	0.6394***	0.6680***	0.5161***	0.8261***	0.5247*
	(0.2037)	(0.1848)	(0.1766)	(0.2836)	(0.2031)	(0.3112)
Population growth	− 0.0073	− 0.0137	− 0.0148	− 0.0036	− 0.0240	− 0.0062
	(0.0176)	(0.0176)	(0.0178)	(0.0208)	(0.0202)	(0.0195)
Investment ratio	0.0071***	0.0076***	0.0072***	0.0050***	0.0071***	0.0059***
	(0.0015)	(0.0015)	(0.0015)	(0.0016)	(0.0017)	(0.0018)
Sec. schooling	0.0969	0.0870*	0.0748	0.0722	0.0046	0.0799
	(0.0499)	(0.0487)	(0.0473)	(0.0695)	(0.0553)	(0.0771)
Trade openness	0.0017***					
	(0.0005)					
Govt. expenditure		0.0003				
		(0.0041)				
Inflation			− 0.0071***			
			(0.0021)			
Economic freedom				0.0620***		
				(0.0177)		
Property rights protection					0.00008	
					(0.0084)	
Regulation						0.0560***
						(0.0186)
$\hat{\delta}_1$ (regime intercept)	− 0.0592	− 0.0696**	− 0.0711**	0.1650**	− 0.0624**	0.1568**
	(0.0302)	(0.0297)	(0.0286)	(0.0673)	(0.0303)	(0.0720)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country/Observation	77/496	77/496	77/496	71/456	71/456	71/456

Notes: As in Hansen (1999), each regime contains at least 5% of the observations. ***, **, * indicate statistical significance at the 1%, 5%, and 10% level respectively.

Appendix A. List of developing and emerging market countries included in the study

Albania	*Indonesia*	Sudan
Algeria	*Israel*	Swaziland
Argentina	Jamaica	Syria
Bahrain	*Jordan*	*Tanzania*
Bangladesh	Kenya	*Thailand*
Benin	*Korea, Republic*	Togo
Bolivia	Kuwait	Trinidad &Tobago
Botswana	Lesotho	*Tunisia*
Brazil	Malawi	*Turkey*
Bulgaria	*Malaysia*	Uganda
Burundi	Mali	*Uruguay*
Cameroon	Malta	*Venezuela*
Chile	*Mexico*	Zambia
Colombia	Mongolia	
Congo, Republic	*Morocco*	
Costa Rica	Mozambique	
Cote d`Ivoire	Nepal	
Cyprus	Nicaragua	
Dominican Republic	Niger	
Ecuador	*Pakistan*	
Egypt	*Panama*	
El Salvador	Papua New Guinea	
Fiji	Paraguay	
Gabon	*Peru*	
Gambia, The	*Philippines*	
Ghana	*Poland*	
Guatemala	Saudi Arabia	
Guyana	Senegal	
Haiti	Sierra Leone	
Honduras	*Singapore*	
Hungary	*South Africa*	
India	Sri Lanka	

Note: italic countries indicate emerging markets.

Appendix B. Variable, definitions and sources

Variable	Definition	Source
Real GDP per capita (y_{it})	PPP Converted GDP Per Capita (Chain Series), at 2005 constant prices.	Penn World Table Mark 7.1 (PWT)
Population growth (POP)	Annual population growth rate.	World Development Indicators (WDI)
Investment share of real GDP (INV)	Investment share of PPP converted GDP at 2005 constant prices	PWT
Secondary schooling (SCHOOL)	Average year of secondary schooling of the population age 15 years and over.	Barro and Lee (2013)
Private sector credit/GDP (PCR)	Private credit by deposit money banks and other financial institutions to GDP. It excludes credits issued by central and development banks. Furthermore, it excludes credit to the public sector and cross claims of one group of intermediaries on another.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Bank credit/GDP (BCR)	Credit by deposit money banks to the private sector as a share of GDP.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Liquidity liability/GDP (LLY)	Liquid liabilities of the financial system (currency plus demand and interest bearing liabilities of the financial intermediaries and non-blank financial intermediaries) divided by GDP.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Commercial bank asset (CBA)	Ratio of deposit money bank claims on domestic nonfinancial real sector to the sum of deposit money bank and Central Bank claims on domestic nonfinancial real sector.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Stock market capitalization/GDP (STMKTCAP)	Average value of listed domestic shares on domestic exchanges in a year as a share of GDP.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Stock market total value traded/GDP	Total shares traded on the stock market exchange to GDP.	World Bank's Financial Structure Database (Beck *et al.*, 2009)
Political rights	Survey-based measure individual's political rights: freedom that enables people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate. The index ranges from 1 (highest degree of freedom) to 7 (lowest level of freedom). It is rescaled to 0 to 10 so that higher score mean higher degree of freedom.	Freedom House
Civil liberty	Survey-based measures of civil liberties: the freedoms of expression and belief, associational and organizational rights, rule of law, and personal	Freedom House

	autonomy without interference from the state. The index ranges from 1 (highest degree of freedom) to 7 (lowest level of freedom). It is rescaled to 0 to 10 so that higher score mean higher degree of freedom.	
Political Constraints	It captures the institutional constraints on the decision-making powers of chief executives, individually or collectively, from other independent veto powers in the political system (legislative, judiciary and sub-national/federal political entities). It reflects the degree of checks and balances mechanism in the political system. POLCON is constructed from five sources of veto power points (executive, lower and upper legislative chambers, judiciary and sub-national/federal political entities). The index ranges from 0 (lowest constraint) to 1 (highest constraints). It is rescaled to 0 to 10, higher score mean higher constraint or better quality of political institutions.	Henisz (2000)
Executive constraints	Extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities. This index is range from 1-7. Higher score mean higher constraint.	Marshall et al. (2014).
Democracy	Institutionalized Democracy: Democracy is conceived as three essential, interdependent elements. One is the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders. Second is the existence of institutionalized constraints on the exercise of power by the executive. Third is the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. This index range from 0 to 10, higher means better quality.	Marshall et al. (2014). Polity IV, Centre for International Development and Conflict Managements, University of Maryland.
Checks	Reflect the numbers of veto players over political decisions, which is the number of actors whose approval is necessary for a shift in policy. It range from 1 (lowest) to 18 (highest).	Beck et al. (2001)
Judiciary independent	Extent to which judiciary is independent from the control of other branches of government such as the government or military or other sources. It ranges from 0 (not independent) to 2 (generally independent).	
Polity2	The difference between democracy and autocracy score.	Marshall et al. (2014).

Appendix C. Principle component factor analysis

Political institutions				
Principle component factor analysis				Factor loading after rotation
Eigenvalue	Difference	Proportion	Variables	Factor 1
4.840	4.000	0.692	Political rights (PR)	0.941
0.840	0.288	0.120	Civil liberty (CL)	0.903
0.552	0.162	0.078	Political constrains (POLCON)	0.805
0.390	0.131	0.055	Executive constrains (EXCON)	0.937
0.258	0.178	0.036	Democracy (DEMOC)	0.696
0.080	0.043	0.011	Checks (CHECK)	0.499
0.037	-	0.005	Judiciary independent (JUDIND)	0.936
			Observation	499
Financial development				
3.624	3.353	0.906	PCR	0.982
0.270	0.172	0.067	BCR	0.989
0.097	0.089	0.024	LLY	0.907
0.007	-	0.002	CBA	0.925
			Observation	499

Note: Factors are extracted using principle component analysis method, and rotation is performed using Varimax with Kaiser Normalization.

Does Money Have a Role in Monetary Policy under Inflation Targeting in Thailand?

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Abstract: ***This paper deploys Thai quarterly data for the study period 1999q1-2014q4 to investigate econometrically the proposition that money growth is an important, if not the sole, determinant of inflation under inflation targeting and, importantly, that the money growth-inflation relation is not conditional on the stability of the money-demand function. In the literature, instability in the money-demand function can stem from a range of sources, such as financial reforms, institutional-structural changes, and other money-demand shocks of domestic or foreign origin. From May, 2000 – almost the entire study period of this paper, Thailand ran a monetary policy of inflation targeting, with its central bank (Bank of Thailand) deploying as the policy instrument a short-term interest rate; namely, the one-day bilateral repurchase rate. The autoregressive distributed-lag (ARDL) bounds-testing results suggest that, across the same period, the Thai money stock (narrow or broad), real output, prices, interest rates and exchange rates maintained a long run equilibrium relation. The associated error-correction model of inflation confirms the cointegral relation among money (narrow or broad), real output, prices, interest rates and exchange rates and also suggests that money growth has a significant distributed-lag impact on inflation. The empirical results obtained from an SVAR (structural vector autoregressive) model provide further confirmatory evidence on the dynamic interactions among all endogenous variables in the specified model, especially among money, real output and prices as classical monetary theory suggests. The presence of this money growth-inflation relation was associated with a stable narrow money-demand function, while the broad money-demand function remained unstable. These results for the study period are consistent with the view that the causal relation between money growth and inflation holds in Thailand under inflation targeting when the Bank of Thailand deploys a short-term policy interest rate, rather than a monetary aggregate, as the instrument of monetary policy and that the relation is not conditional on stability in the money-demand function. The paper concludes that inflation targeting neither justifies nor precludes, on the ground of instability in the money-demand function, the exclusion of money from consideration in the conduct of monetary policy for price stability.***

Keywords: ARDL modelling, Inflation targeting, Money, Stability of the money demand function, Monetary policy for price stability, SVAR modelling, Thailand

1. Introduction

The debate on the role of money in monetary policy for price stability[1] is far from over, even when countries such as Thailand, whose capital markets are relatively shallow and whose financial institutions and systems are relatively less-developed, emulate the shift of more developed economies over the last few decades to deploy a short-term policy interest rate as the instrument of monetary policy[2] under inflation targeting. As a strategy of monetary policy, inflation targeting is considered an improvement over monetary targeting, which deploys a monetary aggregate as the instrument of monetary policy (Walsh, 2009; Svensson, 2011; de Mendonca and de Guimaraes e Souza, 2012). The introduction of inflation targeting in many countries since the 1990s has indeed created an impression that money

[1] Price stability is defined in this study as low and stable inflation. Price stability is important because the presence of economic and financial stability is known to promote productive investment and, in turn, economic growth (Faria and Carneiro, 2001; Fischer, 1993, 1996; Schwartz, 1995). Accordingly, best-practice monetary policy aims to keep both the mean and variance of inflation within the bounds of their 'right levels'. The recent literature also emphasises that the conditional volatility of inflation should be kept to levels that maintain the real interest rate and the real exchange rates stable. What remains to be determined is the appropriate strategy of monetary policy (exchange-rate targeting, or monetary targeting, or inflation targeting) to sustain price stability, especially in developing countries as they remain exposed to shocks of both domestic and foreign origin (Faust and Henderson, 2004; de Mendonca and de G.J. Guimaraes e Souza, 2012; Hossain, 2015).

[2] For discussion on the variants of inflation targeting and the inflationary experiences of many countries under inflation-targeting, see Svensson (2011) and the references therein.

does not matter insofar as inflation, or its control, is concerned (Svensson, 2011; Woodford, 2000). This view has, however, drawn criticism from many prominent economists because money and prices remain causally related, both in the short run and long run, irrespective of the strategy of monetary policy (Dwyer and Fisher, 2009; Lothian, 2014). Moreover, the recent literature suggests strongly that the money growth-inflation relationship is not conditional on stability of the money-demand function (Lucas, 1996; King, 2003; McCallum and Nelson, 2011)[3].

In Thailand, the role of monetary policy in price stability has increased since the East Asian financial crisis of 1997–1998. Implementating the International Monetary Fund's stabilization program, on 2nd July, 1997, Thailand stopped pegging its currency, the baht, to the U.S. dollar, replacing the peg with a system that combined a 'managed float' exchange-rate regime with some episodic controls over international capital flows[4]. The new exchange-rate system equipped the Bank of Thailand (central bank of Thailand) with some autonomy, which it could deploy to conduct a rule-based monetary policy for price stability. Operating under some form of monetary targeting from July 1997 to May 2000 the Bank was successful in stabilising the price level. It then switched its monetary policy strategy to one of 'flexible' inflation targeting targeted at keeping inflation stable without affecting output. The main reason for this shift away from monetary targeting was alleged instability in the money-demand function, owing to the financial crisis of 1997-1998 that 'arguably' loosened the causal relation between money growth and inflation[5]. Discarding the monetary aggregate, in May 2000 the Bank of Thailand began deploying a short-term policy interest rate (i.e. one-day bilateral repurchase rate) to manage aggregate demand despite continuing uncertainty in the transmission mechanisms of monetary policy due to the underdeveloped state of the Thai money and capital markets. Under these circumstances, one major outcome of inflation targeting was excessive volatility of money growth that kept the rate of inflation volatile. Inflation volatility in turn made the real interest and exchange rates volatile, adversely affecting economic growth (Hossain, 2015). This has raised the crucial question of how effectively a short-term policy interest rate can be deployed to demand management in the unstable economic environment of a country, such as Thailand, whose managed float leaves it exposed to external shocks. Moreover, the question remains as to whether, in Thailand, the real policy interest rate is adjusted using the Taylor principle, a principal theoretical requirement under a forward-looking inflation targeting strategy for price stability (Baqir, 2002; Charoenseang and Manakit, 2007; Disyatat and Vongsinsirikul, 2002). This question is paramount because, when monetary policy is not conducted in a systematic way following a simple, transparent rule, it may lead to or magnify the problems posed by domestic- and foreign-generated boom-bust cycles (Taylor, 2012).

This paper deploys quarterly data for Thailand over the period 1999q1-2014q4 to investigate econometrically the proposition that money growth remains an important, if not the sole, determinant of inflation even when a country operates under inflation targeting with a short-term policy interest rate as the instrument of monetary policy and that the money growth and inflation relation holds irrespective of whether or not the money-demand function remains stable. The paper also investigates whether the Bank of Thailand follows a rule-based, forward-looking Taylor principle to conduct monetary policy for price stability. The remainder of the paper is organized as follows. Section 2 outlines a monetary framework for establishing some testable relations, contemporaneously and dynamically, among money, output, prices, interest rates and exchange rates. Section 3 deploys the autoregressive distributed-lag (ARDL) bounds-testing approach to establish a long run equilibrium relation among money, real output, prices, interest rates and exchange rates. The associated error-correction model of inflation is then used to identify the sources of inflation and for ex-post forecasting of inflation. Section 4 outlines a structural vector autoregressive (SVAR) model for two purposes. Firstly, to investigate the dynamic interactions among money, real output, prices, interest rates and exchange rates in the presence of two external exogenous variables, namely US manufacturing output and the US Treasury bill rate[6]. Secondly, to analyse the impulse responses and forecast-error-variance decompositions of all endogenous variables in the system. Section 5 investigates the issue of instability in the money-demand function in Thailand and draws inference on whether or not the money growth-inflation relation in this country is conditional on stability of the money-demand function. Section 6 summarises the key findings, draws

[3] Although the money growth-inflation relation remains strong in high-inflation economies, the relation could be strong even in low- or moderately-high-inflation economies.

[4] This paper uses the concept of the managed float, rather than the full-float, as the better representation of the present exchange-rate regime in Thailand.

[5] 'Arguably' according to the Bank of Thailand annual reports published around this time and the Bank of Thailand (2008). Section 5 of this paper investigates the money-demand behaviour and its stability in Thailand.

[6] To represent the foreign interest rate, this paper uses alternatively, in different monetary relations, the US Treasury bill rate, the US Federal funds rate or the US government bond yield. US manufacturing output is used as a proxy for foreign real output.

policy implications and makes concluding remarks. The paper has an appendix which estimates a real-interest-rate reaction function to determine whether the Bank of Thailand follows the Taylor principle as required under a rule-based, forward-looking inflation targeting for price stability.

2. Relations among money, real output, prices, interest rates and exchange rates

Following the spirit of the classical monetary theory, this section specifies a monetary model of inflation that relates inflation and money growth. Consider the money-market equilibrium condition.

$$\frac{M}{P} = m^d\,(y, NIR) \qquad (1)$$

where M is the money stock, y is real income, P is the price level and 'NIR' is a representative nominal interest rate. This money-market equilibrium condition provides a level form relation between money, real output and prices given the presence of a long run stable money-demand relation $m_d(\ldots)$[7].

Equation (1) can be expressed in a proportional change, or a first-difference, form showing that a one-for-one relation exists between inflation and money growth adjusted for both economic growth and changes in the interest rate, such that

$$\pi = \lambda - \omega_1 g_y + \omega_2 \Delta NIR \qquad (2)$$

where π is the inflation rate; λ is the money growth rate; gy is the economic growth rate; Ꮖ1 is the income elasticity of demand for money; Ꮖ2 is the semi-interest elasticity of demand for money; and Δ is the first-difference operator. Equation (2) suggests that the inflation rate increases positively and proportionately to the money growth rate and decreases with economic growth[8].

This benchmark model of inflation can be expanded for an open economy. This requires specifying a money-demand function in an expanded form that may take the form: M/P = md(y, NIR, FIR, ER) where, as defined above, M is the money stock, y is real income, P is the price level, NIR is the nominal interest rate, FIR is the foreign interest rate and ER is the (nominal or real) exchange rate[9] When this money-demand function is inserted in the money-market equilibrium condition, a one-for-one relation can be derived between inflation and money growth, adjusted for economic growth and changes in interest rates and exchange rates, such that

$$\pi = \lambda - \omega_1 g_y + \omega_2 \Delta NIR + \omega_3 FIR + \omega_4 \Delta ER \ \ldots \ (3)$$

The next section uses the theory reviewed here to investigate econometrically the relations among money, real output, prices, interest rates and exchange rates within a cointegration- and error-correction modelling framework.

3. Cointegral relations among money, real output, prices, interest rates and exchange rates in Thailand

3.1 Specification of an ARDL model of inflation

This section applies the ARDL bounds-testing approach to investigate the long run equilibrium relation among money, real output, prices and exchange rates, which are non-stationary variables, in the presence of both domestic and foreign interest rates which are stationary variables[10] The error-correction version of the ARDL model is specified as

$$\Delta LCPI_t = \alpha_0 + \alpha_1 T + \sum_{i=0}^{l1}\beta_i \Delta L_j M_{t-i} + \sum_{i=0}^{l2}\gamma_i \Delta LRGDP_{t-i} + \sum_{i=0}^{l3}\eta_i \Delta NIR_{t-i} + \sum_{i=0}^{l4}\lambda_i \Delta FIR_{t-i} + \sum_{i=0}^{l5}\mu_i \Delta LNEER_{t-i} + \phi_1 L_j M_{t-1} + \phi_2 LRGDP_{t-1} + \phi_3 NIR_{t-1} + \phi_4 FIR_{t-1} + \phi_5 LNEER_{t-1} + \varepsilon_t \qquad (4)$$

equation (4):

where the dependent variable is specified as *LCPI* (log of the Consumer Price Index, *CPI*); *LJM* (*J* = *N*, *B*) is the log of the money stock (narrow, *N* or broad, *B*); *LRGDP* is the log of real *GDP*; *NIR* is a representative nominal interest rate (i.e. the deposit rate of interest in Thailand); *FIR* is a representative foreign interest rate (i.e. the US Treasury bill rate); and *LNEER* is the log of the nominal effective exchange rate[11]; ε is a random error term, and β ,γ ,η , λ , μ i and Øi are parameters to be estimated[12].

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7 Laidler (1990,1993) emphasizes that the relation between money and prices may rely on the long run stable money-demand function although the short run money-demand function could be unstable for various reasons including model mis-specification and other econometric reasons.

8 In a growing economy (propelled by, say, technological progress or trade openness) with an income-elasticity of money demand in excess of unity, the rate of inflation could be much lower than the growth rate of the money supply.

9 No consensus exists on whether the nominal or real exchange rate should appear in a money-demand function. This paper uses the real exchange rate in the money-demand function although the results obtained with a nominal exchange rate remain qualitatively similar.

10 Both the ADF and KPSS tests have been deployed to determine the time-series properties of variables in the price-level model. As prices, money and real output appear to have a unit root, it is possible to establish a long run equilibrium relation among them in the presence of other variables, stationary and non-stationary. To conserve space, the unit-root test results are not reported.

11 In the inflation literature, the nominal exchange rate, rather than the real exchange rate, maintains a feedback relation with the price level.

This generalized specification is based on the maintained hypothesis that the time-series properties of variables in the long run price level relation can be approximated by a log-log or log-linear k-VAR(l) form where k is the number of variables in the VAR and l is the number of lags, augmented with an intercept (α0) and a time trend (*T*) if relevant. Given this specification, the optimal number of lag terms to be deployed for estimation purposes could be chosen using the Akaike Information Criterion (AIC) or the Schwarz Bayesian Criterion (SBC) from a maximum number of lag terms set in the specification, say, 4 for quarterly data if the effects of the lagged variable are expected to be fully realized over a year[13].

3.2 Estimation and results

In the first stage of estimation, testing for the presence of a long run equilibrium relation among variables in level form requires two steps. First, the specified error-correction model of inflation of the form of equation 4 is estimated in a restricted form by excluding the level-form lagged variables. Second, a variable addition test (F-test) is applied to determine whether the lagged level variables are statistically significant at the conventional five percent level of significance. The estimated F-statistic for the restriction that the lagged level variables in the specification with LCPI as dependent variable is denoted by F(LCPI|LJM, LRGDP, LNEER; NIR, FIR), where, as defined earlier, LJM is the log of the money stock (narrow or broad); LRGDP is the log of real GDP; NIR is a representative interest rate such as the deposit rate of interest (THDRI); FIR is a representative foreign interest rate such as the US Treasury bill rate (USTBR); and LNEER is the log of the nominal effective exchange rate[14]. This testing process can be repeated sequentially, with each variable in the specification designated in turn as dependent variable[15]. The second stage of the ARDL modelling involves estimating the coefficients of the long run equilibrium relation, drawing inferences about the coefficient values and interpreting them employing economic theory, institutional knowledge and policy regimes. In general, in estimating the long run equilibrium coefficients, the ARDL technique estimates (l+1)k number of regressions to obtain the optimal lag length for each variable, where l is the maximum number of lags and k is the number of variables in the equation.

Table 1A The ARDL estimates of parameters in an inflation model, 1999q1-2014q4: *Long run equilibrium relations among LCPI, LNM/LBM, LRGDP, THDRI, USTBR and LNEER*

	Narrow Money (NM)		Broad Money (BM)	
	Specification with variables: LCPI, LNM, LRGDP, THDRI, USTBR and LNEER ARDL (1,2,0,1,2,1) (Based on SBC: max. lag = 4)		Specification with variables: LCPI, LBM, LRGDP, THDRI, USTBR and LNEER ARDL (1,0,0,1,2,1) (Based on SBC: max. lag =4)	
F-test statistic	5.33		3.49	
W-test statistic	31.97		20.93	
Critical-value bound	*F-test*	*W-test*	*F-test*	*W-test*
90%	(2.35,3.42)	(14.10, 20.51)	(2.41,3.58)	(14.47, 21.46)
95%	(2.78, 3.98)	(16.69,23.89)	(2.85, 4.17)	(17.12, 25.05)
Long run coefficients of the determinants of log CPI (LCPI)				
	Narrow Money (NM)		Broad Money (BM)	
Regressors	Long run coefficient Coefficient (t-ratio) [prob.]		Long run coefficient Coefficient (t-ratio) [prob.]	
LNM / LBM	0.40 (3.91) [0.00]		0.21 (3.47) [0.00]	
LRGDP	-0.067 (-0.35) [0.72]		0.42 (4.49) [0.00]	
THDRI	-0.01 (-1.06) [0.29]		-0.01 (-1.14) [0.26]	
USTBR	0.02 (2.52) [0.01]		0.01 (2.01) [0.05]	
LNEER	0.29 (2.03) [0.04]		0.03 (0.19) [0.85]	
Intercept	-1.53 (-1.11) [0.27]		-4.93 (-6.51([0.00]	
Seasonal dummies	not reported		not reported	
The Wald test results				
H_0: Coefficient on LNM/LBM = 0	$\chi^2_{(1)}$ = 15.29 [0.00]		$\chi^2_{(1)}$ = 12.03 [0.00]	
H_0: Coefficient on LRGDP = 0	$\chi^2_{(1)}$ = 0.12 [0.72]		$\chi^2_{(1)}$ = 20.15 [0.00]	
H_0: Coefficient on THDRI = 0	$\chi^2_{(1)}$ = 1.12 [0.29]		$\chi^2_{(1)}$ = 1.30 [0.25]	
H_0: Coefficient on USTBR = 0	$\chi^2_{(1)}$ = 6.36 [0.01]		$\chi^2_{(1)}$ = 4.07 [0.04]	
H_0: Coefficient on LNEER = 0	$\chi^2_{(1)}$ = 4.12 [0.04]		$\chi^2_{(1)}$ = 0.04 [0.85]	

Note: **With narrow money (NM)**
ecm = LCPI −0.40564*LNM +0.067384*LRGDP +0.0098565*THDRI −0.023674*USTBR −0.29886*LNEER +1.5365*INPT −0.0073505*S1 −0.11166*S2 −0.060068*S3

With broad money (BM)
ecm = LCPI −0.21524*LBM −0.42381*LRGDP +0.010045*THDRI −0.013519*USTBR −0.029094*LNEER + 4.9336*INPT −0.015485*S1 −0.074497*S2 −0.031959*S3

In the short run, this does not make much difference as the nominal and real exchange rates maintain a close relation because of short run price rigidities.

[12] The data deployed in this study are drawn from IMF's International Financial Statistics.

[13] The model can be estimated using different numbers of lag terms to check the sensitivity, robustness of results.

[14] An increase in the value of the nominal effective exchange rate represents an appreciation of the Thai baht vis-a-vis the currencies of Thailand's major trading partners.

[15] This paper does not undertake such estimation for all variables in the model.

Table 1B The ARDL estimates of parameters in an inflation model, 1999q1-2014q4: *Error-correction model of log CPI (LCPI)*

	Narrow Money (NM) Specification with variables: LCPI, LNM, LRGDP, THDRI, USTBR and LNEER ARDL (1,2,0,1,2,1) (Based on SBC: max lag =4)	Broad Money (NM) Specification with variables: LCPI, LBM, LRGDP, THDRI, USTBR and LNEER ARDL (1,0,0,1,2,1) (Based on SBC: max lag 4)
Error-correction model of LCPI associated with the long run equilibrium relation		
Regressors	Short run coefficient Coefficient (t-ratio) [prob.]	Short run coefficient Coefficient (t-ratio) [prob.]
ΔLNM/ ΔLBM	0.11 (2.68) [0.01]	0.047 (2.33) [0.02]
ΔLNM(-1)	0.08 (3.17) [0.00]	
ΔLRGDP	-0.01 (-0.35) [0.72]	0.09 (3.69) [0.00]
ΔTHDRI	0.01 (2.15) [0.03]	0.01 (1.77) [0.08]
ΔUSTBR	0.01 (2.05) [0.04]	0.01 (1.84) [0.07]
ΔUSTBR(-1)	-0.01 (-3.00) [0.00]	-0.01 (-2.71) [0.01]
ΔLNEER	-0.06 (-1.50) [0.14]	-0.07 (-1.63) [0.11]
Error-correction term, ecm(-1)	-0.18 (-314) [0.00]	-0.22 (-3.32) [0.02]
Seasonal dummies	not reported	not reported
The Wald test results		
H_0:Coefficient on ΔLNM/LBM) = 0	$\chi^2_{(1)}$ =7.20 [0.00]	$\chi^2_{(1)}$ = 5.46 [0.02]
H_0:Coefficient on ΔLNM(-1) = 0	$\chi^2_{(1)}$ = 10.08 [0.00]	
H_0:Coefficient on ΔLRGDP =0	$\chi^2_{(1)}$ = 0.12 [0.72]	$\chi^2_{(1)}$ = 13.61 [0.00]
H_0:Coefficient on ΔTHDRI = 0	$\chi^2_{(1)}$ = 4.62 [0.03]	$\chi^2_{(1)}$ = 3.15 [0.07]
H_0:Coefficient on ΔUSTBR =0	$\chi^2_{(1)}$ = 4.21 [0.04]	$\chi^2_{(1)}$ = 3.42 [0.06]
H_0:Coefficient on ΔUSTBR(-1) =0	$\chi^2_{(1)}$ = 9.02 [0.00]	$\chi^2_{(1)}$ = 7.34 [0.00]
H_0:Coefficient on ΔLNEER =0	$\chi^2_{(1)}$ = 2.27 [0.13]	$\chi^2_{(1)}$ = 2.65 [0.10]
H_0:Coefficient on ecm(-1) = 0	$\chi^2_{(1)}$ = 9.86 [0.00]	$\chi^2_{(1)}$ = 11.08 [0.00]
Diagnostic test statistics		
Adjusted R^2	0.60	0.49
Standard error of the regression	0.006	0.007
D.W statistic	2.02	2.00

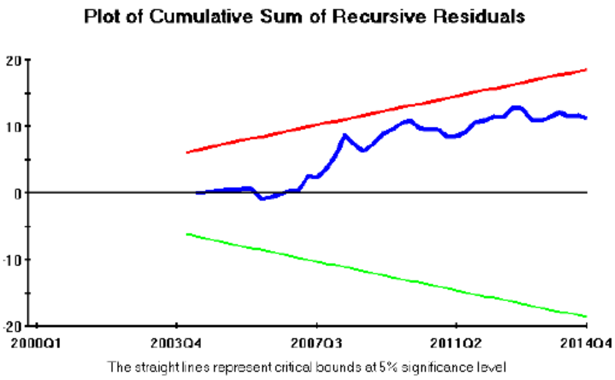
Note: **With narrow money (NM)**
ecm = LCPI −0.40564*LNM +0.067384*LRGDP +0.0098565*THDRI −0.023674*USTBR −0.29886*LNEER +1.5365*INPT −0.0073505*S1 −0.11166*S2 −0.060068*S3

With broad money (BM)
ecm = LCPI −0.21524*LBM −0.42381*LRGDP +0.010045*THDRI −0.013519*USTBR −0.029094*LNEER + 4.9336*INPT −0.015485*S1 −0.074497*S2 −0.031959*S3

Tables 1A and 1B report the F-statistic value for LCPI as dependent variable. The results obtained with the narrow money stock are found superior, theoretically and statistically, to those obtained with the broad money stock, and are used for interpretation of the results[16]. Since the estimated F(LCPI|LNM, LRGDP, LNEER; THDRI, USTBR) value of 5.33 exceeds the upper limit of the critical band of 2.78 to 3.98 at the 95 percent confidence level, the null hypothesis of no long run equilibrium relation among LCPI and its determinants is rejected[17]. In the estimated model, the long run coefficient on the narrow money stock bears a positive sign and is significant with 99 percent confidence level. The value of the coefficient (0.4) is, however, lower than one[18]. As expected, the coefficient of real income bears a negative sign. This coefficient is not, however, statistically significant. Both the US Treasury bill rate and the nominal effective exchange rate bear a positive sign and are significant with at least at 95 per cent confidence level. These results lend support to the idea that an increase in the foreign interest rate and/or an appreciation of the nominal effective exchange rate reduce the demand for real narrow-money balances and hence raise the price level. The coefficient on the domestic interest rate bears a negative sign and is not statistically significant, implying that the domestic interest rate does not have a significant impact on the price level. The overall results are consistent with the expected findings for a long run price level relation that is derived from the money-market equilibrium condition in an open-economy context, as specified in section 2.

Figure 1 The CUSUM and CUSUMSQ tests of residuals of the error-correction model of inflation, based on the error-correction model of inflation

A *Estimated with the narrow definition of money*



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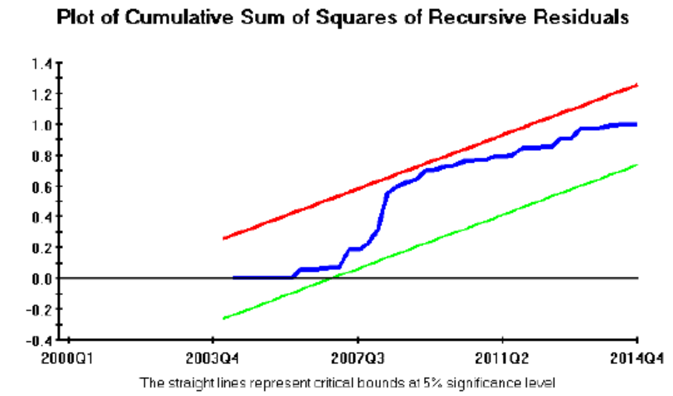
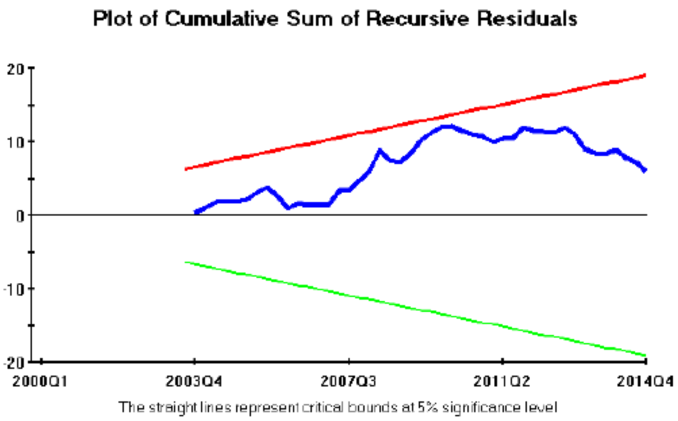
16 Unless suggested otherwise, to conserve space, the paper reports the results obtained by deploying the narrow definition of money. The results obtained by deploying the broad money stock are reported as and when needed to highlight any particular issue. Given a relatively small number of quarterly observations, the paper uses the SBC to select the optimal lag length after setting the maximum number of lag terms to four.

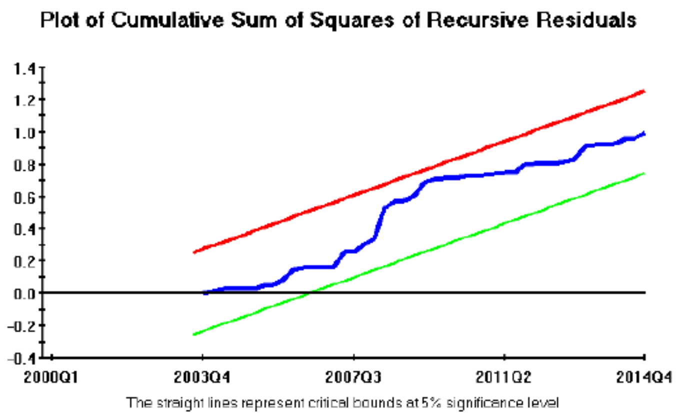
17 The model is estimated by imposing the restriction that the domestic and foreign interest rates are stationary.

18 This could be due to any one or more of many reasons including bias caused by the misspecification errors or the use of inappropriate number of lag terms in the specification.



B *Estimated with the broad definition of money*





The estimated long run price level model is associated with an error-correction model of inflation, which captures the dynamic behaviour of the price level. As expected, in the error-correction model, a one-period-lagged error-correction term bears a negative sign and is significant with 95 percent confidence level. This tends to confirm the presence of a long run equilibrium relation between the log of the consumer price index and its determinants, as specified in classical monetary theory. The error-correction coefficient measures the speed of adjustment of the price level following a disequilibrating disturbance. The coefficient value of −0.18 suggests a moderately rapid speed of convergence of the price level relation towards its equilibrium state, i.e. about 18 percent of the disequilibrating gap is eliminated within a quarter. Along with this characteristic feature of the price level relation, the model suggests a distributed-lag impact of money growth on inflation. This is reflected in the significant positive coefficients of the current and one period lag money growth terms. Other variables, namely changes in the domestic and foreign interest rates have impacts on inflation, via the money-demand channel, at the 5 percent level of significance. Overall, the error-correction model fits the data well, as reflected in the high explanatory power of the model, e.g. the adjusted R2 value is 0.6. The CUSUM and CUSUMSQ tests of residuals (Figures 1A and 1B) show no significant parameter instability in the error-correction model of inflation.

3.3 Forecasting analysis

The long run relation among money, real output, prices, interest rates and exchange rates, obtained by the ARDL cointegration approach, makes economic sense in terms of economic theory, institutional knowledge and policy regimes. Because the estimated error-correction model of inflation is parsimonious[19] and found stable in a dynamic sense, it can be deployed for forecasting of inflation. To demonstrate the forecasting ability of the model, the price level equation was re-estimated for the period 1999q1-2012q4 and then the associated error-correction model of inflation was deployed for *ex post* out-of-sample forecasting of inflation over the holdout period 2013q1-2014q4.

Table 2 reports the forecasting performance indicators, especially the root-mean-squared forecast error. They suggest that the error-correction model has the ability to forecast inflation with a forecast error of less than 5 percent over a time horizon of 2 years.

Table 2 Summary statistics of residuals and forecast errors of CPI inflation, ΔLCPI

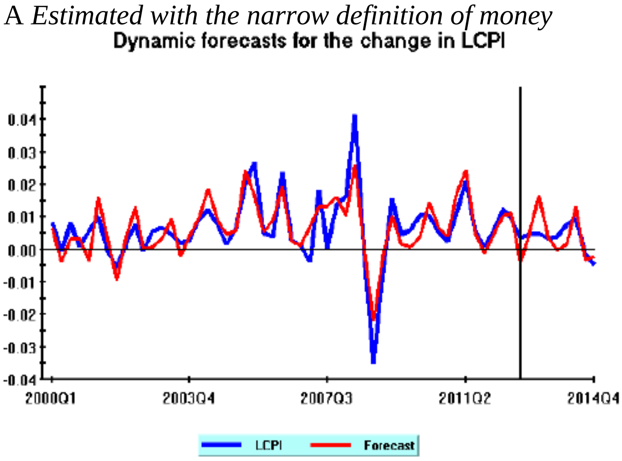
	Estimation Period (2000q1-2012q4)	Forecast Period (2013q1-2014q4)
Mean	0.000	-0.8763E-3
Mean absolute	0.0042578	0.0039468
Mean sum squares	0.2947E-4	0.2754E4
Root mean sum squares	0.005429	0.005248

[19] The model is selected based on the SBC, which selects a model with a small number of lag terms compared with models selected by other information criteria.

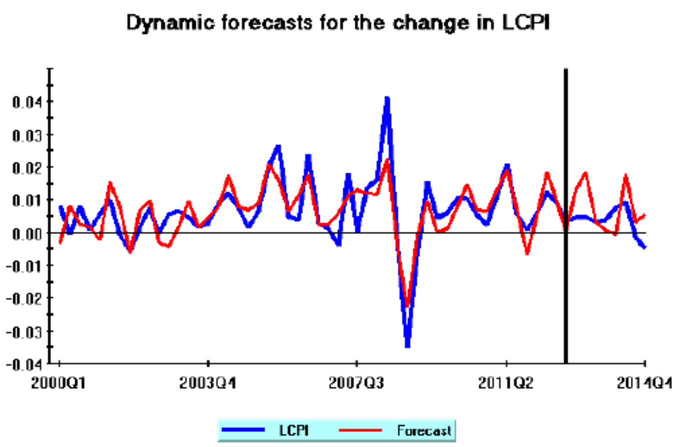
Figure 2 provides a visual representation of the actual and forecasted values of inflation over the study period. It is significant that although the forecasted values do not track the actual values perfectly, they trace the trends well especially when the estimated model deployed for forecasting is a quarterly one[20].

Figure 2 Actual and forecast values of CPI inflation (change in LCPI, ΔLCPI), based on the error-correction model

A *Estimated with the narrow definition of money*



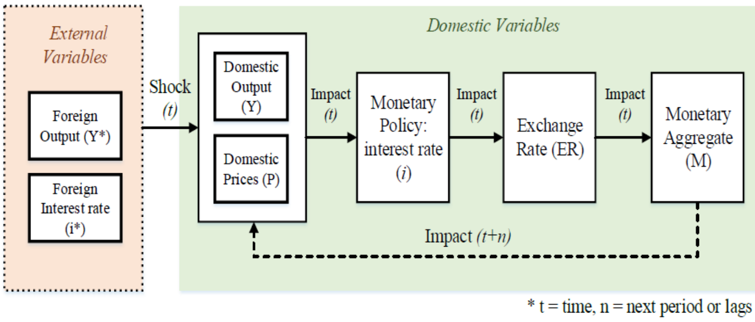
B *Estimated with the broad definition of money*



4. Interrelations among money, real output, prices, interest rates and exchange rates

Thailand is a small open economy. It operates under a managed-float-exchange-rate regime and also maintains episodic control over capital flows as and when needed. Presently, the country operates under flexible inflation targeting to stabilize prices without affecting economic growth by deploying a short-term policy rate as the instrument of monetary policy.

Figure 3 Interactions among real output, prices, interest rates, exchange rates and money with shocks originating from external sources



Following the extant literature on the conduct of monetary policy under inflation targeting, an SVAR modelling approach is considered appropriate to investigate the dynamic interactions among real output, prices, interest rates, exchange rates and money. These variables are assumed to have contemporaneous and dynamic interactions. Accordingly, a five-variable SVAR model is specified to investigate the interactions among the above defined variables under the assumption that the Thai economy remains exposed to shocks originating in two external variables (exogenous), namely the foreign interest rate and foreign output[21]. For modelling purposes, they are assumed to affect domestic variables but are not affected by them. Figure 3 provides an illustration of the linkages among the external and domestic variables that can be expected for countries such as Thailand.

4.1 An SVAR model specification, estimation and results

For illustrative purposes, the model is specified, using lower-case letters, for five endogenous variables, namely real output (y), the general price level ("prices", hereafter designated p), the nominal interest rate (i), the nominal

[20] As the short run movements of prices occur due to both monetary and non-monetary shocks, it is challenging for a model to trace short run inflationary movements.

[21] A growing body of literature analyses the monetary-policy transmission mechanisms under interest-based inflation targeting by employing SVAR models (Raghavan, Silvapulle and Athanasopoulos, 2012). The variables in an SVAR model represent a multivariate system of endogenous variables, which maintain feedback relations contemporaneously and dynamically. For identification purposes, some restrictions are imposed on the contemporaneous relations among variables in the model. The model specified here has limited purpose given the research questions addressed in the paper.

exchange rate (*e*), and the money stock (*m*). Assume that these variables can be represented in the following first-order autoregressive form, ignoring intercepts, where *t* is a time subscript, such that the model can be specified in a matrix form as follows.

$$BY_t = AY_{t-1} + E_t \qquad (5)$$

Where

$$Y = \begin{bmatrix} y_t \\ p_t \\ i_t \\ e_t \\ m_t \end{bmatrix}, B = \begin{pmatrix} 1 & \beta_1 & \beta_2 & \beta_3 & \beta_4 \\ \beta_5 & 1 & \beta_6 & \beta_7 & \beta_8 \\ \beta_9 & \beta_{10} & 1 & \beta_{11} & \beta_{12} \\ \beta_{13} & \beta_{14} & \beta_{15} & 1 & \beta_{16} \\ \beta_{17} & \beta_{18} & \beta_{19} & \beta_{20} & 1 \end{pmatrix}, A = \begin{pmatrix} \alpha_1 & \alpha_2 & \alpha_3 & \alpha_4 & \alpha_5 \\ \alpha_6 & \alpha_7 & \alpha_8 & \alpha_9 & \alpha_{10} \\ \alpha_{11} & \alpha_{12} & \alpha_{13} & \alpha_{14} & \alpha_{15} \\ \alpha_{16} & \alpha_{17} & \alpha_{18} & \alpha_{19} & \alpha_{20} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} & \alpha_{24} & \alpha_{25} \end{pmatrix} \text{ and } E_t = \begin{bmatrix} \varepsilon_t^y \\ \varepsilon_t^p \\ \varepsilon_t^i \\ \varepsilon_t^e \\ \varepsilon_t^m \end{bmatrix}$$

Pre-multiply equation (5) by the inverse of *B*, B^{-1}such that:

$$B^{-1}BY_t = B^{-1}AY_{t-1} + B^{-1}E_t \qquad (6)$$

Assume that *B* is non-singular, so that B^{-1}B = $I_{5\times5}$. Then equation (6) simplifies to:

$$Y_t = B^{-1}AY_{t-1} + B^{-1}E_t \qquad (7)$$

restrictive, the relations under investigation in the present study render the Cholesky decomposition technique appropriate. The identification procedure adopted here can be explained as follows. In the model, real output and prices are affected dynamically, but not contemporaneously, by all other variables in the system. Both output and prices are, however, affected contemporaneously by external variables (exogenous)[22], namely the US federal funds rate and US manufacturing output[23]. In response to changes in domestic output and prices due to external shocks, the Bank of Thailand manages the policy interest rate with the aim of neutralizing the impacts of external shocks on domestic variables. *Ceteris paribus*, policy-induced interest-rate movements then bring about changes in both the exchange rate and the money stock.

Following the above logical structure of the model, it is assumed that output shocks are purely structural and originate in foreign sources. Consequently, in the first row of the β-matrix, the off-diagonal elements are restricted to zero (equation 8). In the second row, the coefficient of output on the price level (β5) is non-zero. The rationale is that any change in output affects the price level contemporaneously but output is affected by the price level with a lag. The interest rate is affected contemporaneously by changes in both output and the price level. The exchange rate is affected contemporaneously by changes in the interest rate, which is influenced by both output and prices. Changes in the exchange rate affect the money stock contemporaneously. Changes in the money stock have impacts on output, prices, interest rates and exchange rates dynamically but not contemporaneously. Considering such transmission mechanisms, the recursive causal ordering of variables in the specified model is: *y*, *p*, *i*, e and *m*. Such recursive causal relation is plausible under inflation targeting, the present monetary-policy regime in Thailand.

Having identified the structural shocks following the recursive ordering of variables, the relation between the pure shocks $(\varepsilon^y, \varepsilon^p, \varepsilon^i, \varepsilon^e, \varepsilon^m)$ and reduced-form shocks $(v^y, v^p, v^i, v^e, v^m)$ can be expressed in the following form (equation 8):

$$\begin{bmatrix} \varepsilon_t^y \\ \varepsilon_t^p \\ \varepsilon_t^i \\ \varepsilon_t^e \\ \varepsilon_t^m \end{bmatrix} = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ \beta_5 & 1 & 0 & 0 & 0 \\ \beta_9 & \beta_{10} & 1 & 0 & 0 \\ \beta_{13} & \beta_{14} & \beta_{15} & 1 & 0 \\ \beta_{17} & \beta_{18} & \beta_{19} & \beta_{20} & 1 \end{pmatrix} \begin{bmatrix} v_t^y \\ v_t^p \\ v_t^i \\ v_t^e \\ v_t^m \end{bmatrix} \qquad (8)$$

4.2 Estimation and results

The five-variable SVAR model is estimated with two external exogenous variables, namely US real manufacturing output and the US Federal funds rate[24]. As specified, the five endogenous variables, as defined earlier in the paper, are organised in the following Cholesky order: LRGDP (*y*), LCPI (*p*), THCBPR (*i*), LNEER (*e*) and LNM (*m*).

Prior to estimation of the model, unit-root tests were conducted for all the variables. Although there is minor variation in the results, the ADF and KPSS tests both suggest that LRGDP, LCPI, LNEER and LNM have a unit root while THCBPR is stationary[25]. Based on these

[22] The external variables are not shown in the specified model. For estimation purposes, they are included as exogenous variables, without lags.

[23] These variables are assumed to capture the trends and movements of the global economy.

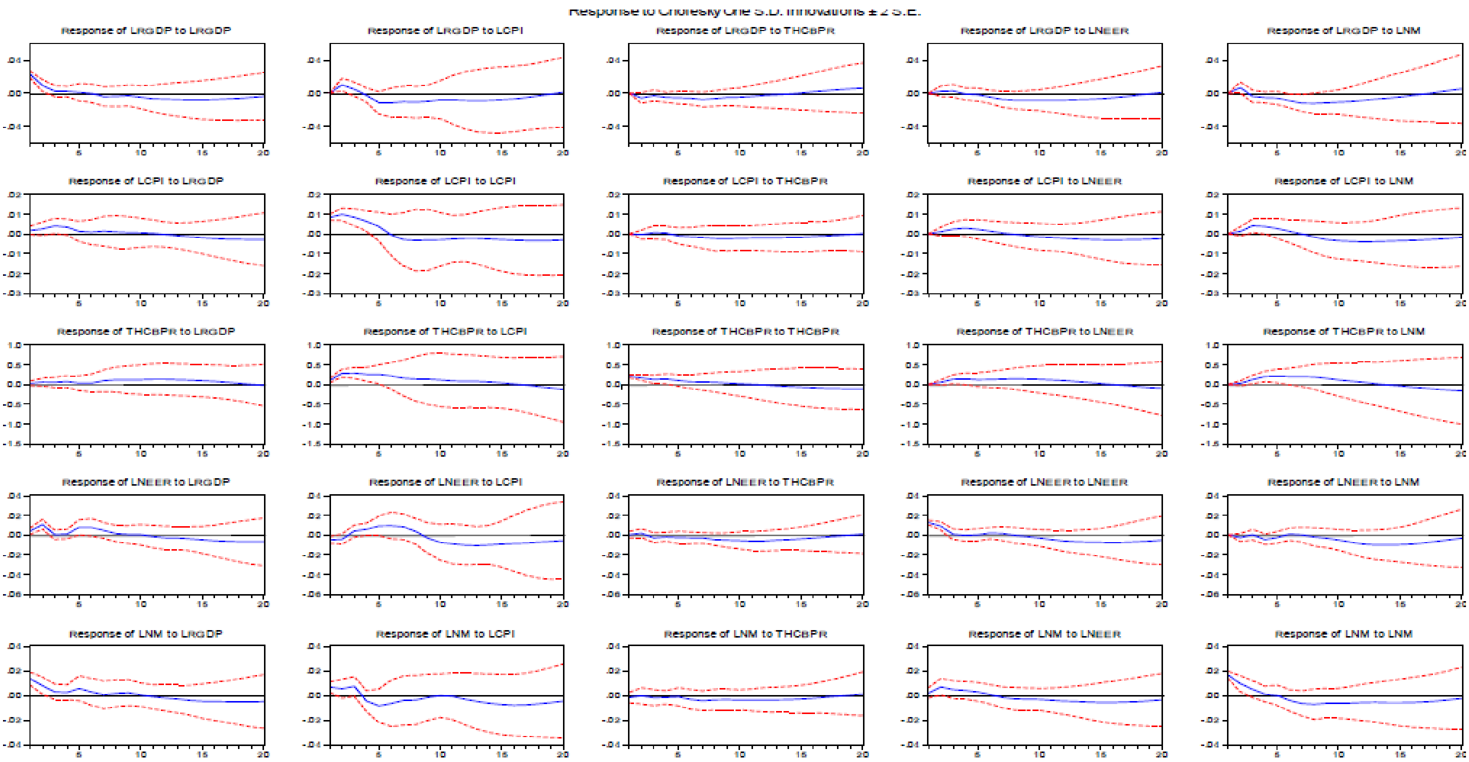
[24] These variables are not represented in the estimated coefficient matrices. To conserve space, the estimated coefficients are not reported.

[25] To conserve space, the unit-root test results are not reported. Of the two external variables, the US real output, represented by

findings, the model was estimated in two forms: (1) in level form for all variables in the system and (2) in the growth form (i.e. first-difference form) for variables which are non-stationary along with the stationary variables in the level-form specification. As the results obtained are qualitatively similar, the results obtained in level form are reported[26]. Having estimated the identified model, the impulse responses and forecast-error-variance decompositions for all five variables are generated and reported in Figure 4 and Table 3, respectively. As expected, the impulse responses show the interactions among money, real output and prices, especially the positive effect of money on real output and prices over time.

FIGURE 4 Impulse responses of variables in the identified SVAR model

A *Estimated with the narrow definition of money*



manufacturing output, has a unit root while the US Federal funds rate is stationary.

[26] The results obtained with broad money stock are similar and not reported. To improve the results, the Toda- Yamamoto technique (Toda and Yamamoto, 1995) was used for estimation of the model in level form.

B *Estimated with the broad definition of money*

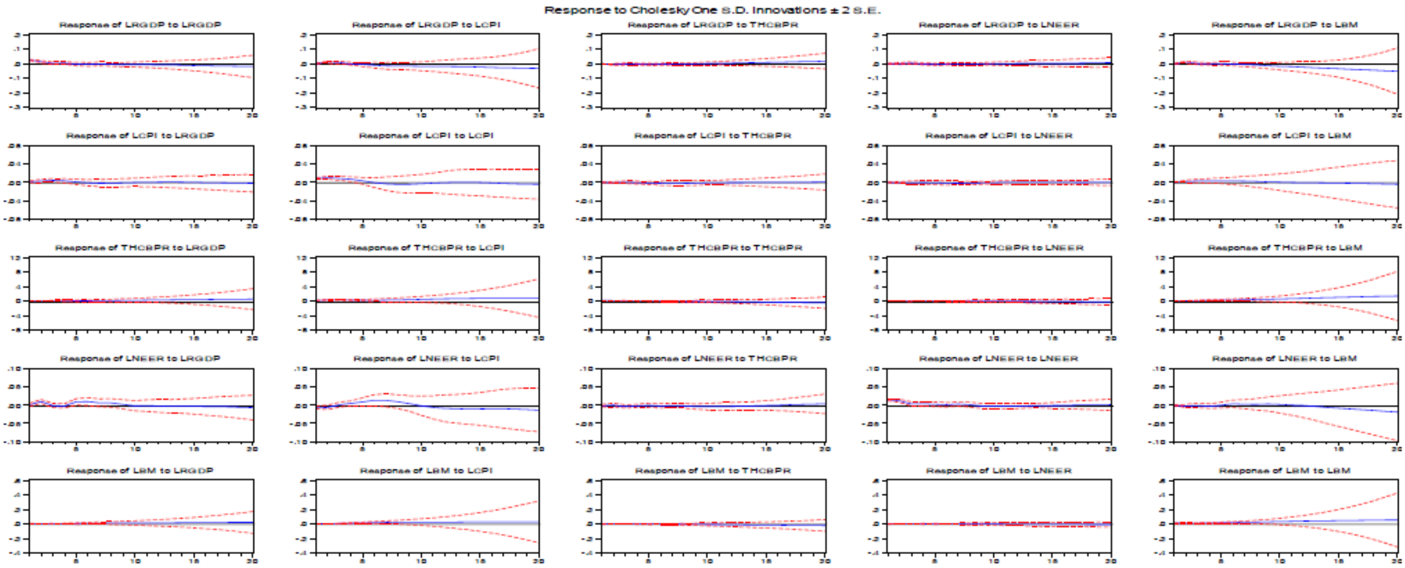


Table 3 reports the forecast-error-variance decompositions of the five endogenous variables. The results show that one major source of forecasting error for all the variables is own-innovations, to the extent of 26 percent for real output, 51 percent for the general price level, 14 percent for the central-bank policy interest rate, 20 percent for the nominal exchange rate and 34 percent for the narrow money stock over a time-horizon of 20 quarters. It is notable, that in the case of prices, the narrow money stock accounts for 21 percent of the forecast-error variance. Likewise, in the forecast-error-variance accounting of the price level, the contribution of the nominal exchange rate is about 12 percent. However, the contribution of the central-bank policy interest rate to the forecast-error variance of the price level is only 6 percent. Simultaneously, the contribution of narrow money in the forecast-error variance of output is 24 percent. In the case of the exchange rate, the

TABLE 3 Forecast-error-variance decomposition of variables in the SVAR model

		Variance Decomposition of LRGDP				
Period	S.E.	LRGDP Shock	LCPI Shock	THCBPR Shock	LNEER Shock	LNM Shock
1	0.023168	100.00	0.00	0.00	0.00	0.00
5	0.033859	55.26	23.59	8.68	1.60	10.88
10	0.053807	24.13	27.83	10.11	11.08	26.85
20	0.068619	25.52	27.05	8.81	14.80	23.81
		Variance Decomposition of LCPI				
Period	S.E.	LRGDP Shock	LCPI Shock	THCBPR Shock	LNEER Shock	LNM Shock
1	0.008608	3.86	96.14	0.00	0.00	0.00
5	0.019798	9.76	74.55	0.51	5.10	10.07
10	0.021993	8.74	68.08	4.82	5.24	13.12
20	0.028446	10.59	51.18	5.67	11.80	20.77
		Variance Decomposition of THCBPR				
Period	S.E.	LRGDP Shock	LCPI Shock	THCBPR Shock	LNEER Shock	LNM Shock
1	0.229350	1.27	20.40	78.34	0.00	0.00
5	0.762373	2.07	52.48	19.31	9.05	17.09
10	1.003539	6.27	42.29	12.32	14.16	24.96
20	1.159190	10.46	35.66	14.15	14.45	25.28
		Variance Decomposition of LNEER				
Period	S.E.	LRGDP Shock	LCPI Shock	THCBPR Shock	LNEER Shock	LNM Shock
1	0.014173	6.73	12.62	0.03	80.62	0.00
5	0.025892	28.86	26.22	3.36	36.37	5.19
10	0.033823	23.78	36.13	10.60	22.85	6.64
20	0.058705	16.09	33.80	8.09	20.73	21.29
		Variance Decomposition of LNM				
Period	S.E.	LRGDP Shock	LCPI Shock	THCBPR Shock	LNEER Shock	LNM Shock
1	0.022589	36.50	8.91	0.60	0.69	53.30
5	0.031752	29.01	21.94	1.15	9.63	38.28
10	0.037335	22.10	21.39	5.67	9.24	41.59
20	0.050144	19.56	25.97	5.94	14.71	33.83

Factorization: Structural

Table 3 reports the forecast-error-variance decompositions of the five endogenous variables. The results show that one major source of forecasting error for all the variables is own-innovations, to the extent of 26 percent for real output,

51 percent for the general price level, 14 percent for the central-bank policy interest rate, 20 percent for the nominal exchange rate and 34 percent for the narrow money stock over a time-horizon of 20 quarters. It is notable, that in the case of prices, the narrow money stock accounts for 21 percent of the forecast-error variance. Likewise, in the forecast-error-variance accounting of the price level, the contribution of the nominal exchange rate is about 12 percent. However, the contribution of the central-bank policy interest rate to the forecast-error variance of the price level is only 6 percent. Simultaneously, the contribution of narrow money in the forecast-error variance of output is 24 percent. In the case of the exchange rate, the contributions of output and the interest rate are about 24 percent.

Overall, the empirical results generated by the identified SVAR model, show that there are feedback relations among all variables in the system, especially among money, real output and prices. The results obtained are conditional on the effects of external shocks to the domestic economy. The external shocks transmit to the domestic economy through the system contemporaneously and dynamically.

5. The Money Growth-Inflation Relation and Stability of the Money-Demand Function

The empirical results reported in section 4 above suggest cointegrally-related money, real output, prices, interests and exchange rates in Thailand. These variables move together over time and their dynamic interactions are well-represented by an error-correction model of inflation. The results obtained from the identified SVAR model reported in section 4 reinforce the contemporaneous and dynamic relations among these variables. As mentioned earlier, the following two important questions are debated in the literature on inflation and money demand. First, does money growth-inflation relation sustain irrespective of the monetary policy strategy? Second, is the money growth-inflation relation conditional on a stable money-demand function? The evidence reported above supports the proposition that a money growth-inflation relation holds under inflation targeting, whether strict or flexible. This is a reflection of the causal relation that exists between inflation and money growth in the steady state, irrespective of how monetary policy is conducted for price stability (Nelson, 2008). As inflation control requires control over money growth under a flexible exchange rate system, inflation loses the monetary anchor when a short-term interest rate is deployed as the instrument of monetary policy, especially when the conduct of monetary policy is discretionary and hence not credible or effective in controlling inflation expectations.

This section assesses the stability of the Thai money-demand function in order to draw inference on whether, or to what extent, the money growth-inflation relation is conditional on money-demand stability.

5.1 Specification and estimation of an ARDL model of money demand

Following Hossain (2015), an open-economy money-demand function of the following form is specified for estimation purposes with data for Thailand[27]:

$$\mathrm{LR}_J M_t = \alpha_0 + \alpha_1 Ly_t + \alpha_2 DIR_t + \alpha_3 FIR_t + \alpha_4 LRER_t + \alpha_5 \pi_t^v + \varepsilon_t \quad (9)$$

where (J = N,B) is the log of real narrow (*LRNM*) or real broad (*LRBM*) money balances; *Ly* is the log of real income, included as a scale variable; DIR is a representative domestic interest rate acting as a proxy for the opportunity-cost of holding money relative to alternative financial assets; FIR is a representative foreign interest rate (for example, the US government bond yield) proxying for the opportunity-cost of holding money in domestic-currency-denominated financial assets instead of in foreign-currency-dominated financial assets; *LRER* is the log of a representative real exchange rate such as the real effective exchange rate, *LREER*[28]; represents inflation volatility, measured as the conditional variance, or standard deviation, of inflation[29]; and π^v is a random error term, with zero mean and a constant variance, capturing random shocks to money demand. J LR M v π

[27] A conventional long run money-demand function with real income and the nominal interest rate was adequate until the early 1970s to explain the money-demand behaviour in many countries. Since then the foreign interest rate and the exchange rate of domestic currency have become important in an open-economy money-demand function, in which wealth holders have the option to add both domestic and foreign assets in their portfolios.

[28] This paper uses a measure of the real effective exchange rate although there is no consensus whether nominal or real exchange rate should be used in the money-demand function. For detailed discussion on this issue, see Hossain (2015).

[29] An emerging literature suggests that the level of demand for real money balances could vary with changing inflation volatility around a relatively lower rate of average inflation even under a rule-based monetary policy such as inflation targeting. Inflation volatility can affect money demand in both positive and negative ways. When inflation volatility generates economic uncertainty, it raises the precautionary demand for money. In contrast, when the asset holders' portfolio requires adjustment because of changes in the risk structure of assets, inflation volatility may dampen money demand while raising the demand for inflation-hedging financial and real assets. The net effect of inflation volatility on money demand therefore remains indeterminate *a priori* (Hossain, 2015).

Following the ARDL modeling approach discussed earlier, the specified money-demand function is estimated for Thailand. Table 5 reports the estimated results, both for real narrow and for real broad-money balances. The SBC is used to select the optimal lag-length from a maximum four lags. It shows that the estimated F-statistic obtained for real narrow-money balances is 16.92 which is significantly greater than the upper-bound critical value of 5.04, suggesting that the null hypothesis of no cointegration among variables in the narrow money-demand function can be rejected at the 95 percent confidence level. The corresponding F-statistic value for real broad-money balances is 5.83, which is greater than the upper bound critical value 5.04, suggesting that the null hypothesis of no cointegration among variables in the broad-money demand function can be rejected at the 95 percent confidence level. Overall, the results suggest the presence of strong cointegration among real narrow-money balances and their determinants while the relation is somewhat weak among real broad-money balances and their determinants.

In the estimated model for real narrow-money balances, the coefficients of real income and the deposit interest rate bear their expected signs and are statistically highly significant. The coefficients of the foreign interest rate (U.S. government bond yield), the real effective exchange rate and inflation volatility bear a negative sign and are also statistically significant at the 95 percent confidence level. The coefficient on inflation volatility bears a negative sign but is significant at about the 90 percent confidence level. In the error-correction model, the coefficient of the error-correction term bears a negative sign and is highly significant[30]. This finding confirms the existence of a long run relationship among real money balances and their determinants. Overall, the results obtained are reflective of a liberalized, albeit underdeveloped, financial environment in Thailand since the financial crisis of the late 1990s. The estimated narrow money-demand model, in particular, does not suggest any major statistical problems. The CUSUM and CUSUMSQ of residuals tests suggest that the real narrow money-demand relationship remained stable over the estimation period[31].

Table 4 The ARDL estimates of long and short-run coefficients in the money-demand function

	Log of Real Narrow Money Balances Specification with variables: LRNM, LRGDP, THDRI, USGBY, LREER and INFVOL	Log of Real Broad Money Balances Specification with variables: LRBM, LRGDP, THDRI, USGBY, LREER and INFVOL
Regressor	ARDL (1,4,4,4,3,4) Coefficient (t-ratio) [prob.] (maximum lag = 4) (1999q1–2016q4)	ARDL (1,4,3,2,1,0) Coefficient (t-ratio) [prob.] (maximum lag = 4) (1999q1–2016q4)
F-statistic (CV=critical value)	16.92 CV(95%): (2.39, 5.04) CV(90%): (2.08, 3.00)	5.83 CV(95%): (2.39, 5.04) CV(90%): (2.08, 3.00)
The long-run coefficients of log of real money balances		
LRGDP	1.23 (17.76) [0.00]	-0.69 (1.00) [0.32]
THDRI	-0.017 (-2.76) [0.01]	-0.057 (-1.27) [0.20]
USGBY	-0.07 (-10.16) [0.00]	-0.12 (-2.38) [0.02]
LREER	-0.38 (-2.70) [0.01]	2.66 (2.22) [0.03]
INFVOL	-0.008 (-1.76) [0.08]	-0.04 (-1.56) [0.12]
Intercept	-5.36 (-9.44) [0.00]	9.86 (1.81) [0.07]
The coefficients of the error-correction model		
D(LRGDP)	0.42 (7.58) [0.00]	-0.018 (-0.31) [0.75]
D(LRGDP(-1))	-0.56 (-6.39) [0.00]	-0.049 (-0.75) [0.45]
D(LRGDP(-2))	-0.68 (-10.95) [0.00]	-0.24 (-4.19) [0.00]
D(LRGDP(-3))	-0.44 (-5.60) [0.00]	-0.17 (-2.78) [0.00]
D(THDRI)	-0.02 (-4.75) [0.20]	-0.011 (-2.22) [0.03]
D(THDRI(-1))	0.01 (2.17) [0.04]	0.015 (2.84) [0.00]
D(THDRI(-2))	0.01 (1.55) [0.12]	0.015 (3.06) [0.00]
D(THDRI(-3))	0.014 (2.68) [0.01]	
D(USGBY)	-0.03 (-4.75) [0.00]	-0.019 (-3.57) [0.00]
D(USGBY-1))	0.04 (5.51) [0.00]	0.008 (1.45) [0.15]
D(USGBY-2))	0.02 (3.25) [0.00]	
D(USTBR(-3))	0.03 (4.75) [0.00]	
D(LREER)	-0.03 (-0.33) [0.74]	0.059 (0.66) [0.51]
D(LREER(-1))	0.35 (3.82) [0.00]	
D(LREER(-2))	0.16 (1.68) [0.10]	
D(INFVOL)	-0.02 (-6.79) [0.00]	-0.004 (-1.53) [0.13]
D(INFVOL(-1))	-0.01 (-4.69) [0.00]	
D(INFVOL(-2)	-0.02 (-5.16) [0.00]	
D(INFVOL(-3))	-0.01 (-2.94) [0.01]	
ecm(-1)	-0.81 (-13.86) [0.00]	-0.08 (-6.82) [0.00]
Diagnostic tests		
Adjusted R^2	0.99	0.99
DW-statistic	2.14	2.03
Standard error of the regression	0.017	0.015
LM test for serial correlation	F(4,37) = 2.54 [0.06]	F(4,46) = 1.62 [0.18]
Ramsey's RESET test for misspecification	F(1,40) = 0.03 [0.85]	F(1,49) = 3.67 [0.06]
Normality test	CHSQ(2) = 0.43 [0.80]	CHSQ(2) = 7.72 [0.02]
Test for heteroscedasticity	F(25,41) = 0.79 [0.72]	F(16,50) = 0.79 [0.69]

Notes: 1. The numbers inside the brackets [ ] denote the probability value.

1. Definitions of variables: LRNM/LRBM = real narrow/broad money balances; LRGDP = log of real GDP; THDRI = deposit rate of interest in Thailand, representing the domestic interest rate; USGBY = U.S. government bond yield, representing the foreign interest rate; LREER = log of the real effective exchange rate; and INFVOL = inflation volatility, measured by the GARCH-based conditional standard deviation of inflation.

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[30] The estimated speed of convergence is 0.81 in the real narrow money demand model, which suggests that about 81 percent of disequilibrium in the relation for real narrow-money balances is adjusted within a quarter. This coefficient seems somewhat upwardly biased. This could possibly be due to the presence of outliers, arising from, say, shocks to money-demand that can create excessive sensitivity of the estimated coefficient value. To avoid criticism of stabilizing the estimate, no shock dummy was used.

[31] The remainder of the paper investigates the problem of instability in the money-demand function by deploying several techniques and approaches. The results reveal that the narrow money-demand function suffered at least one structural break following the global financial crisis while the broad money-demand function suffered multiple structural breaks.

5.2 Anatomy of instability in the money-demand function in Thailand

Having established a long run equilibrium relation among real narrow- and broad-money balances and their determinants, it is important to investigate whether the narrow or the broad money-demand function, or both of these functions, has undergone structural changes over time, i.e. whether the coefficients of all or some of the determinants of money demand exhibited instability over time. As indicated earlier, the main reason for the abandonment of money in the conduct of monetary policy in Thailand was, and is, alleged instability in the money-demand function. This section investigates the nature of instability in the money-demand function using four techniques and approaches[32]. First, a stepwise regression analysis is made to determine the relative importance of each of the key determinants of money-demand, as specified in equation 9. Second, the specified model is estimated using the recursive regression technique to examine the evolution of the coefficients of money demand over time as increasing numbers of observations become available. Third, the specified model is estimated using least-squares-with-breaks technique to identify one or more structural breaks in the money-demand relation. Finally, the error-correction model, associated with a long run money-demand relation, is used to determine the model's ability to *ex post* forecast of real money balances.

5.2.1 Stepwise regression analysis

In general, the parameter values in a monetary relation are unlikely to remain constant over time. Among many reasons, the parameter values may change under different monetary-policy regimes, exchange rate arrangements, restrictions over trade and capital flows, and other economic and non-economic shocks of both domestic and foreign origin. Moreover, as the economy opens up and progresses, some variables considered core determinants in a money-demand function may become unimportant; or variables considered unimportant during one period may assert importance in another. In the long run money-demand model for Thailand, the five determinants of money demand in the ARDL model are real income, the domestic interest rate, the foreign interest rate, the real exchange rate and inflation volatility. Among these variables, real income and the domestic interest rate are considered the core variables in a conventional money-demand function. The remaining three variables appear as secondary variables in the sense that they may gain or lose importance depending on institutional arrangements, policy regimes and episodic shocks to money demand of both domestic and foreign origin.

To determine the relative importance of each of these variables, the specified money-demand function is estimated by deploying a stepwise regression technique[33]. The regression results (not reported) suggest that, in addition to the two core determinants of money demand, the three secondary variables can be ordered in terms of importance as follows: (1) the US government bond yield as a proxy for the foreign interest rate; (2) inflation volatility; and (3) the real effective exchange rate. It appears that these variables have episodic or transitory impacts on money demand, especially for the broad money-demand function. Therefore, it is essential to, in some way, include these variables in an expanded model of money demand to cast light on the question of whether any instability in the money-demand function could be due to misspecification errors, caused by the inclusion of some irrelevant or the exclusion of some relevant variables, given the variable influence on the demand for money of these secondary explanators. The three secondary variables found important in the present specification may seem superfluous when the model is estimated over a shorter sample period. However, their exclusion can cause mis-specification errors, and that may lead to a perception of instability in the money-demand function which, in reality, is stable when properly specified.

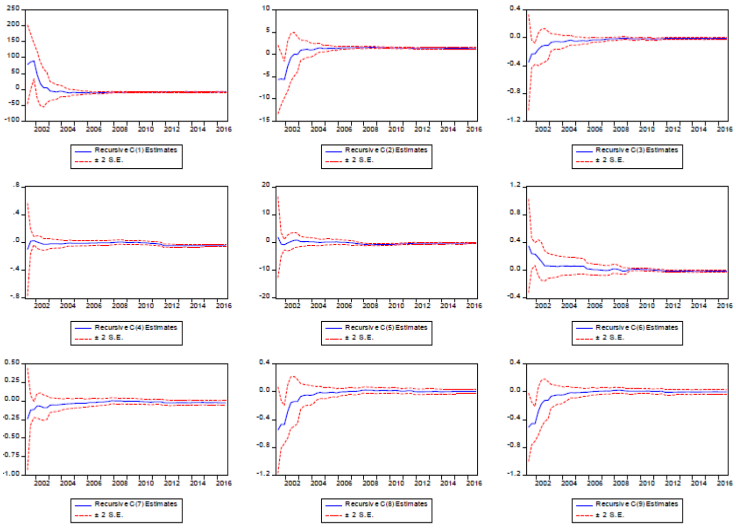
[32] These techniques and approaches are complementary and could be sufficient to determine the extent of instability in the money-demand function. The results obtained then could be used to explain the linkage between money growth and inflation irrespective of the strategy of monetary policy adopted for price stability, including inflation targeting.

[33] In the present quarterly model, seasonal dummies are used in all specifications.

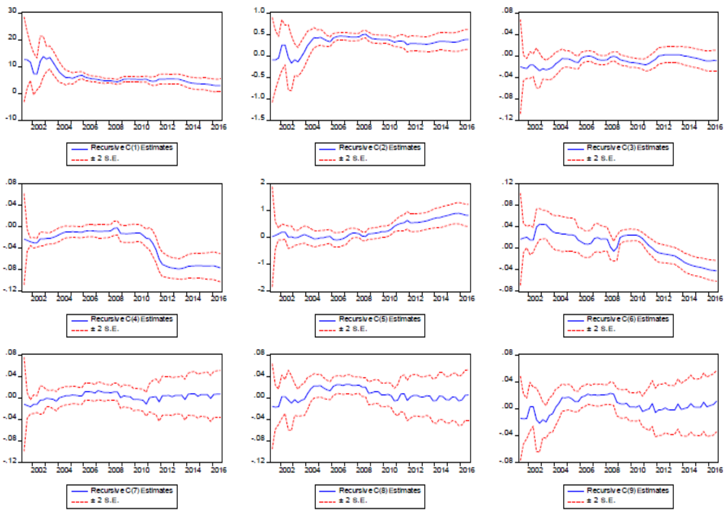
5.2.2 Recursive regression analysis

Figure 5 The recursive regression coefficients of the determinants of real narrow and broad-money balances

A *Estimates of the coefficients of log of real narrow money-demand function*



B Estimates of the coefficients of log of real broad money-demand function



To determine whether the coefficient values of both the core and secondary variables in the money-demand function remained stable over time, the model is estimated using the recursive regression 18 technique[34]. The recursive estimates (Figure 5) suggest that the coefficient values of all the variables in the narrow money-demand function remained stable while the parameter values for most variables in the broad money-demand function underwent significant structural change

2.3 Structural breaks

Table 5 Regression results, using Least Squares with breaks, for log of real money balances

A *Log of real narrow money balances, LRNM*

	Log of real narrow money balances	
Regressor	*Coefficient (t-ratio) [prob.]* 1999q1-2009q1	*Coefficient (t-ratio) [prob.]* 2009q2-2014q4
LRGDP	1.50 (19.56) [0.00]	0.93 (5.37([0.00]
THDRI	-0.02 (-1.93) [0.06]	-0.01 (-0.96) [0.34]
USGBY	-0.01 (-0.03) [0.98]	-0.03 (-1.83) [0.07]
LREER	-0.70 (-4.29) [0.00]	-0.16 (-0.07) [0.49]
INFVOL	0.01 (1.12) [0.27]	-0.04 (2.32) [0.02]
Intercept	-8.41 (-10.65) [0.00]	-2.57 (-1.3) [0.26]
Seasonals (non-breaking variables	(not reported)	(not reported)
The diagnostic tests		
Adjusted R^2	0.99	
DW-statistic	1.97	
Standard error of regression	0.04	
LM test for serial correlation	F(4,48) = 0.03 [0.99]	
Test for heteroscedasticity	F(11,52) = 0.94 [0.51]	

B *Log of real broad money balances, LRBM*

	Log of real broad money balances			
	1999q1-2007q4	2008q1-2010q3	2010q4-2013q1	2013q2-2016q3
Regressor	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]
LRGDP	0.41 (8.58) [0.00]	0.53 (3.49) [0.00]	0.27 (1.77) [0.08]	0.60 (3.83) [0.00]
THDRI	-0.01 (-1.91) [0.06]	-0.05 (-5.21) [0.00]	-0.02 (-0.55) [0.58]	-0.01 (-0.99) [0.32]
USGBY	-0.01 (-1.42) [0.16]	-0.08 (-5.18) [0.00]	-0.05 (-3.32) [0.00]	-0.04 (-2.56) [0.01]
LREER	0.22 (2.31) [0.03]	-0.48 (-1.69) [0.10]	0.15 (0.86) [0.39]	-0.43 (-1.82) [0.08]
INFVOL	0.02 (1.24) [0.22]	-0.01 (-0.57) [0.57]	-0.10 (-2.23) [0.03]	0.07 (1.79) [0.08]
Intercept	4.81 (10.15) [0.00]	6.69 (3.04) [0.00]	7.58 (3.85) [0.00]	5.61 (2.31) [0.03]
Seasonals (non-breaking variables	Not reported	Not reported	Not reported	Not reported
The diagnostic tests				
Adjusted R2	0.99			
DW-statistic	1.54			
SER	0.017			
LM test for serial correlation	F(4,43) = 1.30 [0.28]			
Test for heteroscedasticity	F(23,47) = 1.21 [0.28]			

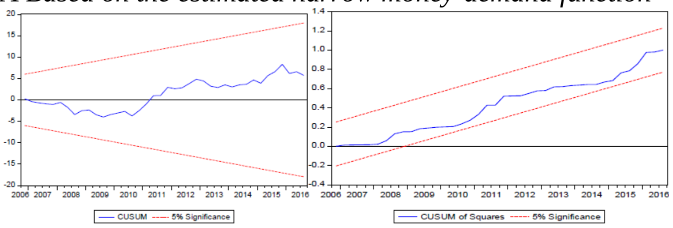
Enders (2010) emphasizes that parameter instability in an economic relation such as the money-demand function does not necessarily originate in a single event or at a particular point in time. Structural changes can be traced in an evolutionary sense from one or more events, such as

[34] The results obtained by the rolling regression technique are consistent with those obtained by the recursive regression technique. To conserve space, they are not reported.

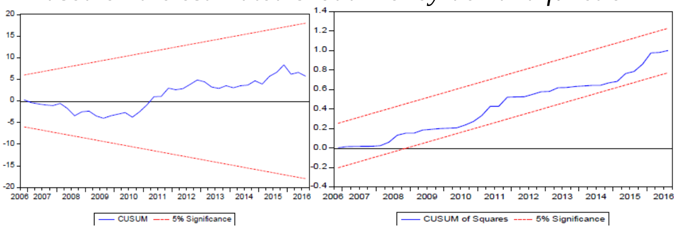
economic shocks or policy and institutional changes. To identify such structural breaks, the specified money-demand model is estimated using the least-squares with-breaks technique, and the results displayed in Table 5. They suggest one structural break point in the narrow-money-demand relation in the first quarter of 2009q1. This date is associated with the global financial crisis. With this break in the relation recognized, the results of the CUSUM and CUSUMSQ tests of residuals, displayed in Figure 6, suggest that the model remained otherwise stable in the post-Asian crisis period. This sample period encompasses an unaltered rule-based monetary-policy regime (monetary targeting or inflation targeting) and a low-inflation environment in Thailand. In contrast, there were three breaks in the broad money-demand relation. These results suggest that although the narrow money-demand relation in Thailand remains less prone to instability, the broad money-demand relation is fragile in a deregulated economic environment. This could be due to flexible, and hence less credible, nature of Thai monetary policy. Less-credible monetary policy is thought to increase the instability of inflation and interest rates, which, by definition, both have greater impact on broad money than on narrow money. They destabilize asset returns, increasing their unpredictability. This then feeds through to volatilize the money-demand relation.

Figure 6 The CUSUM and CUSMSQ tests of residuals of the ARDL models of real narrow and broad money-demand functions

A *Based on the estimated narrow money-demand function*



B *Based on the estimated broad money-demand function*



5.2.4 Error-correction model for forecasting analysis

This sub-section examines the forecasting ability of an error-correction model of money demand, associated with the estimated long run ARDL model of money demand over the study period[35]. For undertaking forecasting analysis, the narrow money-demand model is estimated for a shorter period 1999q1-2012q4. This estimation period includes two economic events - the Asian financial crisis and the global financial crisis. The maintained hypothesis is that an expanded narrow money-demand model that includes both the core and secondary variables would be able to forecast money demand better than a conventional model that includes only income and the interest rate. The forecasting results in Figure 7 and Table 6 show that the estimated narrow money-demand function in Thailand for the period 1999q1-2012q4 passes this test. The actual and forecasted values of real narrow-money balances remained close over the ex post forecasting period 2013q1-2014q4. The estimated root-mean sum squares error is about 5 percent, which is similar to the error estimate for the estimation period 1991q1-2012q4.

Figure 7 Actual and forecast values of the log of real narrow money balances (LRNM)

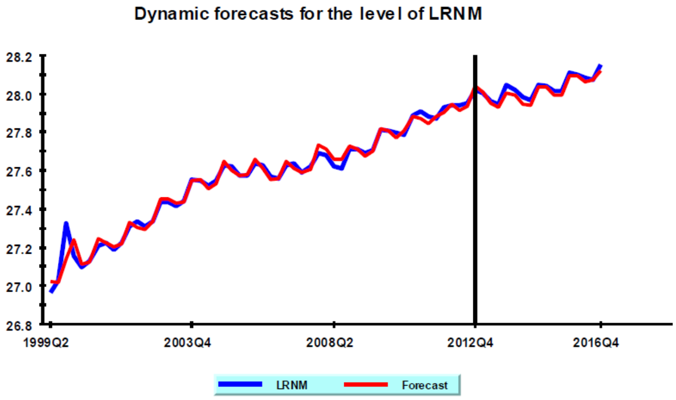


Table 6 Summary statistics for residuals and forecast errors of log of real narrow money balances

	Estimation Period (1999q2-2012q4)	Forecast Period (2013q1-2016q4)
Mean	0.1082E-9	0.0173070.0039468
Mean absolute	0.021484	0.017960
Mean sum squares	0.0012078	0.4532E-3
Root mean sum squares	0.034754	0.021288

[35] Money-demand studies involving the cointegration approach mostly focus on hypothesis testing. Forecasting of money demand generally receives lower priority because the long run relations among cointegrating variables in the money-demand function are considered the logical outcomes of theoretical models. Nevertheless, for forecasting purposes, the deployment of an error-correction model of money demand, which imposes cointegration restrictions, is considered superior to the deployment of any level form relation (Duy and Thoma, 1998). This study considers forecasting a genuine test for stability of the money-demand function.

In summing up, this section has investigated the issue of instability in the money-demand function in Thailand. The empirical results obtained by various techniques and approaches for identifying the key determinants of money demand and their impacts on money demand over time suggest that the apparent instability in the money-demand function largely represents mis-specification errors when such variables as the foreign interest rate and the exchange rate are excluded from a money-demand function. This finding is consistent with the view that: (1) while a stable money-demand function may not be necessary for establishing a *causal* relation between money growth: and (2) inflation and that a stable money-demand function does not guarantee a relation between money growth and inflation; nevertheless, a money-demand function that includes 'a fairly small number of variables' and remains 'reasonably stable' can be useful in the conduct of a rule-based monetary policy for price stability within the monetary macroeconomic framework that classical monetary theory postulates (Beyer, 1998; Burdekin and Siklos, 2008). Coenen and Vega, 2001; Duca and VanHoose, 2004; Friedman, 1966).

6. Summary findings, policy implications and concluding remarks

This paper has deployed quarterly data for Thailand over the period 1999q1-2014q4 to investigate econometrically the proposition that money growth remains an important, if not the sole, determinant of inflation under (flexible) inflation targeting and that the money-growth/inflation relation is not conditional on stability of the money-demand function. The ARDL bounds-testing results suggest that the money stock (narrow or broad), real output, prices, interest rates and exchange rates maintained a long run relation in Thailand over the study period when the country operated under inflation targeting and its central bank deployed a short-term policy interest rate as the instrument of monetary policy. The associated error-correction model of inflation confirms that money, real output, prices, interest rates and exchange rates are cointegrated, and shows a significant distributed-lag impact of money growth on inflation. The forecasting ability of an error-correction model of inflation is satisfactory. The dynamic interactions among these variables are investigated by estimating a five-variable SVAR model in the presence of two external variables, US manufacturing output and the US federal funds rate. The impulse responses and forecast-error-variance decomposition results suggest significant feedback relations among the five variables in the model. The presence of this money growth-inflation 21 relation is associated with a stable narrow-money-demand function, while the broad-money-demand function remains unstable over the study period.

The results obtained in the paper are consistent with the view that the causal relation between money growth and inflation obtains in Thailand under inflation targeting when the Bank of Thailand deploys a short-term policy interest rate, rather than a monetary aggregate, as the instrument of monetary policy and that this relation is not conditional on the presence of a stable money-demand function. The main conclusion that can be drawn from the results is that inflation targeting does not necessarily justify the exclusion of money in the conduct of monetary policy for price stability on the ground of instability in the money-demand function. A detailed investigation of the issue of instability in the money-demand function suggests that the demand for narrow money in Thailand can be specified as a function of a 'fairly small number of variables' and that it remains stable in the face of shocks of both domestic and foreign origin. The causal relation between money growth and inflation can thus be reconciled within a monetary framework that uses a long run money-demand function to postulate casual relations among money, real output, prices and exchange rates while accepting that the money-demand function may undergo structural change over time and exhibit some episodic or transitional instability. Therefore, insofar as inflation control is concerned in countries such as Thailand, money does matter irrespective of whether the money-demand function remains stable or not. The concern is that in the absence of a stable money-demand function, the short run linkage between money growth and inflation could be viewed as temporary or episodic. This may provide justification for ignoring monetary aggregates as a determinant of prices at least in the short run; however, if policy-makers' ignorance of monetary developments is extended to the long run, then the danger of inflationary pressures developing 'under the radar' is created. The dysfunctional consequence is a reduction in the level of the public good perhaps most essential to maximizing the rate of investment, economic certainty. This occurs through higher-than-necessary volatility of inflation, as authorities run a permanent short run monetary policy that is, for the very reason that policy ignores the long run, permanently attempting to hose down developing "unexpected" inflationary pressures sourced in long run policy failure.

Although the paper did not investigate the relative benefits of alternative strategies of monetary policy, from a broader perspective, it is possible to argue that inflation targeting is not necessarily an improvement over money-based monetary policy that considers price stability as the dominant, if not the sole, objective of monetary policy. The abandonment of money in the conduct of monetary policy is not without costs to an economy. The deployment of a short-term policy interest rate as the monetary-policy instrument remains problematic. In particular, it raises inflation volatility, originating from money growth volatility, especially when the policy interest rate is not managed predictably as the Taylor rule suggests (Hossain, 2015)[36]. Inflation volatility also has upward impact on the inflation rate (Cukierman and Meltzer, 1986; Kim and Lin, 2012). An appendix to this paper reports estimates of a real policy interest rate reaction function. They suggest that the Bank of Thailand does not conduct rule-based, forward-looking inflation targeting. The outcome could be excess volatility of the real interest rate and the real exchange rate, which may amplify the volatilities, both of inflation and of real output. When monetary policy is not credible, inflation targeting cannot anchor inflationary expectations and therefore it fails to achieve price stability. This indicates that the Bank of Thailand has the option to deploy an appropriately-defined monetary aggregate as the instrument of monetary policy under a more flexible exchange rate system[37]. This is important as the policy interest rate has become less effective in a low-inflationary environment while an economy such as Thailand remains exposed to both real and monetary shocks. Taylor (2000) long ago recommended the deployment of a monetary aggregate as the instrument of monetary policy when the policy interest rate becomes ineffective for various reasons, including the presence of underdeveloped money and capital markets; and the recommendation remains valid at time of writing. The Japanese experience shows that a massive expansion of the money supply remains the effective instrument to pull an economy out of recession (Krugman, Obstfeld and Melitz, 2015)[38].

[36] High inflation volatility makes the real interest rate and the real exchange rate volatile. These high volatilities affect saving, investment, and trade and capital flows. They may affect productivity and economic growth, especially in developing countries which operate under repressed financial systems.

[37] Although central banks control very short term policy interest rates, they cannot control long term interest rates without controlling the growth rate of the money supply.

[38] As Friedman's constant-money-growth rule is viewed as too restrictive, the McCallum money-growth rule could be considered for conducting a money-based monetary policy because the latter rule incorporates instability in the velocity of money. In the context of debate on the choice between a money aggregate and an interest rate as the instrument of monetary policy, money can act as a convenient or sufficient statistic for returns on bonds and others assets. This indicates that, although monetary policy exerts its influence through interest rates, it does not contradict the role that money can play as a criterion for monetary-policy stance than the interest rates (Friedman, 1967a,1967b).

APPENDIX

Does the Bank of Thailand Conduct Rule-based, Forward-looking Monetary Policy under Flexible Inflation Targeting?

This appendix specifies and estimates a real-interest-rate response function as implied by the theory of rule-based, forward-looking inflation targeting under a flexible exchange rate system. The estimates are used to draw inference on whether the Bank of Thailand remains committed to use the policy interest rate to stabilise prices, or output, or both.

A1. The interest rate response function under Taylor's rule

For estimation purposes, the policy interest rate response function can be expressed in the following simplified form:

$$NIR_t^p = \pi_t^e + RIR^n + \alpha(\pi_t^e - \pi_T) + \beta(y_t^e - y^n) + u_t \quad \text{(A1)}$$

where NIR^p is the policy interest rate, RIR^n is the "long term or natural" real interest rate (assumed constant), π_t^e is the expected rate of inflation at period $t + 1$ given information available at time t, π_T is the pre-set inflation target, y^e is expected real output and y^n is real output at the natural level, u is a random error term with zero mean and a constant variance, andandare positive parameters. In this specification, $(\pi_t^e - \pi_T)$ is the expected inflation gap and $(y_t^e - y^n)$ is the expected output gap.

The Taylor rule suggests that the coefficienton the inflation gap bears a positive sign, with a size of about 0.5. This implies that when the expected rate of inflation rises above the inflation target, the central bank would raise the policy interest rate more than proportionately to the expected rise in inflation. That is, to dampen aggregate demand (and hence inflation), the central bank would engineer an increase in the real interest rate as expected inflation rises. This yields a positive relation between the real policy interest rate (RIRp), defined approximately as the nominal interest (NIRp) adjusted for the rate of inflation (π), and the expected rate of inflation. The positive relation between the real policy interest rate and the expected rate of inflation is known as the Taylor monetary-policy curve. A relation of the following form can then be specified to examine whether the central bank satisfies the Taylor principle in setting the real policy interest rate:

$$RIP_t^p = \lambda_0 + \lambda_1(\pi_t^e - \pi_T) + \lambda_2(y_t^e - y^n) + \nu_t \quad \text{(A2)}$$

where λ_0 is the long term (or natural) real interest rate, v is a random error term, and λ_1 and λ_2 , are the real-interest-rate response parameters with respect to the expected inflation gap and expected output gap, respectively[39].

The Taylor rule requires λ1 to bear a positive sign. When the expected rate of inflation exceeds the inflation target, a price-stabilizing central bank would raise the real policy interest rate to subdue aggregate demand. Side by side, the inclusion of the expected output gap in the Taylor rule shows the importance that a central bank may attribute to output stability. As the expected output gap is considered a lead indicator of future inflation, a price-stabilizing central bank may include the output gap in the loss function for the conduct of monetary policy. A positive output gap represents an overheated economy operating above its potential level (*yn*). Consequently, an output-stabilizing central bank would raise the real policy interest rate to dampen the inflationary pressure created by a booming economy, in which the fast-growing demand exerts capacity pressure on the available productive resources. The coefficient on the output gap λ2 is expected to bear a positive sign.

Finally, central banks are believed to smooth changes in the policy interest rate. When this happens, equation (A2) can be estimated in a dynamic form with a one-period-lagged real interest rate. The real-interest-rate response function can then be specified in the following estimable form:

$$RIR_t^p = \alpha_0 + \alpha_1 \pi_{t+1} + \alpha_2 y_t^c + \alpha_3 RIR_{t-1}^p + \xi_t \quad \text{(A3)}$$

where the expected rate of inflation at period *t*+1 is approximated by $\pi_t^e = \pi_{t+1} + \varsigma_{t+1}$, with ς_{t+1}representing the random forecast error with zero mean and a constant variance, represents the output gap, obtained by detrending real output with a Hodrick-Prescott filter, $\xi = v_t + \zeta_{t+1}$, $\alpha_0 = \lambda_0 + \lambda_1 \pi_T$ and the αs are parameters to be estimated. The error term ξ is assumed to be normally-distributed with zero mean and a constant variance under perfect forecasting or rational expectations. The specified model indicates that the intercept term (α0) would shift when a central bank changes its inflation target. Frequent changes of the inflation target may then create a high degree of inflation persistence, bordering on a near-unit-root condition. High inflation persistence becomes especially problematic when inflation remains high and volatile, and the central bank's credibility in controlling inflation is limited because output stabilization remains in the objective function of monetary policy. The inclusion of the one-period-lagged real interest rate indicates that the central bank follows an interest-rate-smoothing scheme over time to avoid any sharp reversals that may undermine its policy credibility (Enders, 2010). The value of coefficient α3 measures the degree of interest-rate smoothing. Slow adjustment of the real interest rate is desirable because it mitigates the credibility loss from sudden and large policy reversals. Consequently, this may deliver effective control and stability of inflation and output (Leu and Sheen, 2006).

A2. Estimation and results

Table A1 reports the estimates of the real-interest-rate response to the inflation and output gaps for Thailand over the period 2000q3-2016q3. The model is estimated using the generalized method of moments (GMM). The GMM is used because the model has a simultaneity problem. A rise in the expected rate of inflation induces an increase in the policy interest rate. A rise in the policy interest rate in turn is expected to lower the rate of expected inflation. In the estimable model, the expected rate of inflation is approximated by the one-period-lead rate of inflation. The estimated results with the real policy interest rate suggest that the coefficient of the one-period-lead rate of inflation bears a negative sign and that the coefficient is significant at the conventional five percent level of significance. The coefficient of the output gap is not statistically significant. Therefore, the results are not consistent with rule-based, forward-looking inflation targeting for price stability. As discussed above, a forward-looking, rule-based monetary policy requires the central bank to raise the real policy interest rate in response to an expected rise in inflation given the target rate of inflation, the output gap, or both, depending on its objective function. The negative coefficient of the real interest rate on the one-period-lead rate of inflation implies that the central bank does not fully adjust the policy interest rate in response to an expected rise in inflation. The outcome is a decrease in the real policy interest rate that counterproductively augments any excess demand present in the economy, accelerates the rate of inflation and raises its volatility. The results suggest that the central bank does not, however, behave as if it remains unresponsive to any inflation shocks. The model is estimated alternatively with the current and the one-period-lagged rate of inflation. The empirical results show that the

[39] This specification can be expanded by including a real exchange rate to determine whether the real exchange rate movement influences the authority's decision to change the real interest rate. Exchange rate stabilization is considered useful to sustain stable trade and capital flows. "Fear of floating" could be another reason for the continuation of managed-float exchange-rate regimes, although inflation targeting requires free float exchange rate regime.

coefficient on the one-period-lagged rate of inflation bears a positive sign. The coefficient is also statistically significant at the five percent level. An interpretation of this is that the central bank adjusts the policy interest rate to a rise in inflation with one-period lag. This delayed response of the real policy interest rate indicates that the central bank raises the real interest rate with a lag to avoid 24 Creating heavy financial repression as such a condition would induce capital flight and lead to other adverse consequences on the economy[40].

TABLE A1 The General Method of Moments (GMM) estimates of coefficients of the real interest rate response function in Thailand:

Real central bank policy interest rate in Thailand (RTHCBPR); Estimation period: 2000q3-2016q3	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]
Intercept	0.94 (2.76) [0.01]	0.55 (1.07) [0.29]	0.24 (0.49) [0.62]	0.14 (0.26) [0.79]
y^c	-0.07 (-0.64) [0.52]	-0.31 (-1.92) [0.06]	-0.30(2.46) [0.02]	-0.30 (-2.43) [0.02]
CPI inflation (+1)	-0.32 (-2.16) [0.04]			
CPI Inflation		0.13 (0.60) [0.55]		
CPI inflation (-1)			0.25 (2.37) [0.02]	0.28 (2.08) [0.04]
RTHCBPR(-1)	0.61 (6.05) [0.00]	0.91 (4.35) [0.00]	1.02 (10.79) [0.00]	1.04 (8.87) [0.00]
ΔLREER				-3.71 (-0.31) [0.76]
Seasonals (not reported)				
J-statistic [prob.]	0.13	0.14	0.33	0.30
Adjusted R^2	0.76	0.39	0.53	0.51
Real lending interest rate in Thailand (RTHLIR); Estimation period: 1999q2-2016q3	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]
Intercept	0.15 (0.87) [0.39]	0.00 (0.02) [0.96]	0.04 (0.29) [0.77]	-0.04 (0.43) [0.67]
y^c	0.00 (0.28) [0.78]	-0.01 (-1.05) [0.30]	-0.01 (-0.69) [0.49]	-0.00 (-1.85) [0.07]
CPI inflation (+1)	0.01 (0.78) [0.44]			
CPI Inflation		0.01 (2.40) [0.02]		
CPI inflation (-1)			0.01 (3.06) [0.00]	0.01 (3.69) [0.00]
LMPS(-1)	0.97 (26.16) [0.00]	0.99 (28.12) [0.00]	0.99 (34.36) [0.00]	1.00 (52.40) [0.00]
ΔLREER				0.58 (2.13) [0.04]
Seasonals (not reported)				
J-statistic [prob.]	0.05	0.14	0.53	0.18
	0.91	90	92	97
Intercept	3.06 (7.53) [0.00]	3.72 (2.85) [0.00]	-2.46 (-2.38) [0.02]	-1.93 (-1.31) [0.20]
y^c	0.12 (0.91) [0.36]	-0.08 (-0.45) [0.66]	-0.41 (-3.38) [0.00]	-0.32 (-1.96) [0.06]
CPI inflation (+1)	-0.62 (-5.48) [0.00]			
CPI Inflation		-0.48 (-1.78) [0.08]		
CPI inflation (-1)			0.72 (4.19) [0.00]	-0.62 (2.72) [0.01]
RTHLIR(-1)	0.56 (9.55) [0.00]	0.47 (2.03) [0.05]	-1.39 (10.52) [0.00]	1.26 (5.38) [0.00]
ΔLREER				-14.63(-0.41) [0.68]
Seasonals (not reported)				
J-statistic [prob.]	0.11	0.03	0.20	0.20
Adjusted R^2	0.87	0.87	0.70	0.68
Bank of Thailand's Monetary Policy Stance (MPS), LMPS=log(RCBPR+REER); Estimation period:2000q3-2016q3	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]	Coefficient (t-ratio) [prob.]

Notes: 1. Monetary policy stance (MPS) is measured as log of (RTHCBPR + REER) where REER is the real effective exchange rate of the Thai baht. A rise in the value represents a contractionary demand management policy in Thailand.

2.Instruments used for estimation purposes: Constant, RGDPc(-1) or yc(-1), CPI inflation (-1), RTHCBPR(-1), or RTHLIR(-1), or MPS(-1), seasonals; and three external exogenous variables, namely foreign oil prices, US federal funds rate and US real output

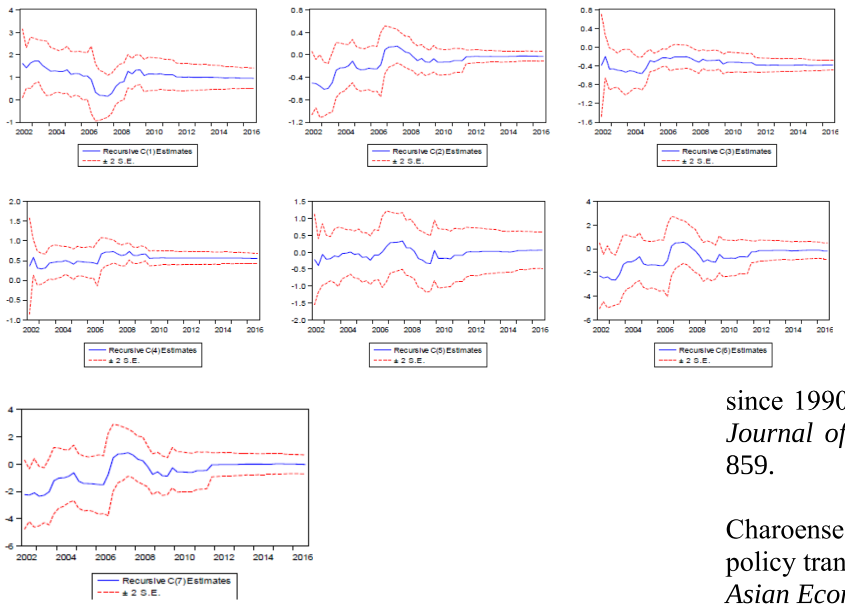
The overall results suggest that the Bank of Thailand does not follow a Taylor-type rule to manage aggregate demand as required by the theory of rule-based, forward-looking inflation targeting. To examine the sensitivity of results, the model is augmented using changes in the real effective exchange rate. This variable is included in the interest-rate response function because many central banks attempt to keep the real exchange rate stable to facilitate trade and capital flows. The presumption is that an appreciated real exchange rate induces a central bank to lower the real interest rate and conversely, a depreciation of the real exchange rate induces a central bank to raise the real interest rate. The estimated results are not statistically significant in the case of the real policy interest rate or real lending rate. The sum of the real policy interest rate and the real effective exchange rate is viewed as an indicator of monetary-policy stance. The empirical results with this variable show that a rise in the one-period-lead rate of inflation induces a mild contractionary stance of monetary policy. As the coefficient of the output gap in the real-interest-rate response function is not significant, it is not clear whether or not the Bank of Thailand deploys the real interest rate to stabilize output although output-stabilization is present in the objective function under flexible inflation targeting. Based on the empirical results found herein, it is safe to conclude that the *ad hoc*, discretionary nature of the stance of monetary policy, instead of stabilizing output or prices or both, is likely to make them more unstable (volatile).

The residual graph of the real-interest-rate response function (not reported) shows that the fitted values of the real policy interest rate traces the actual real policy interest rate. The autoregressive nature of the relationship implies a high degree of persistence of the real policy interest rate. This indicates that the Bank of Thailand

[40] The results obtained with the lending rate of interest are similar.

follows an interest-rate-smoothing process. The recursive estimates (Figure A1) show that the coefficients on one-period lead rate of inflation remained negative, stable over the later part of the study period. This suggests that the Bank of Thailand demonstrated consistent behaviour with respect to setting the real policy interest rate.

FIGURE A1 The recursive estimates of the real-policy-interest-rate function in Thailand, 2000q3- 2016q3



Notes: ● Estimation technique: Ordinary least squares (OLS).
● The estimated coefficients are as follows:
C(2) = estimated coefficient on the cyclical output or output gap;
C(3) = estimated coefficient on one-period lead rate of inflation;
C(4) = estimated coefficient on one-period lagged real-policy-interest-rate; and
C(1), C(4), C(5) and C(6) = estimated intercept and the coefficients on seasonal dummies.

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