ERIA

調査報告書 13－03

Wages and Worker Quality in Foreign Multinationals and Local Manufacturing Plants in Indonesia and Malaysia

平成 **26**（**2014**）年 **3** 月

公益財団法人　国際東アジア研究センター

Wages and Worker Quality in Foreign Multinationals and Local Manufacturing Plants in Indonesia and Malaysia[1]

Introduction and Summary

This report is the first from a multi-year project examining how multinational enterprises (MNEs) affect wages and human resource development in Asia's large developing economies. This report focuses on Indonesia and Malaysia because detailed information on the educational background of workers and export propensities (the share of exports in sales) in manufacturing plants allows relatively rigorous comparisons of MNEs and local plants.[2] Because data on worker education are available, the most sophisticated, previous studies of wage differentials between MNEs and local plants examined medium-large (20 or more workers) foreign multinational enterprises (MNEs) and local, private plants in Indonesian manufacturing in 1996.

Chapter 1 reexamines these results and compares them to analysis of 2006. Mean, unconditional differentials were quite large in the 17 sample industries combined, and declined from 144 to 69 percent for production workers and from 201 to 84 percent for non-production workers. Conditional differentials that account for the tendency of MNEs to hire relatively educated workers, use relatively large amounts of energy and material inputs per worker, and be relatively large, were still positive and significant, but much smaller, falling

[1] This report is one output of the research project "Multinationals, Wages, and Human Resources in Asia's Large Developing Economies", which was funded by the International Centre for the Study of East Asian Development (ICSEAD) in fiscal year 2013 (beginning in April). I thank ICSEAD for financial support and ICSEAD staff for logistic assistance. I am also grateful to the Asia Pacific Institute of Research (APIR) for support of related research. I thank Dionisius Narjoko for co-authoring Chapter 1 as well as providing numerous helpful suggestions on the other chapters. I also thank Shigeyuki Abe, Kenta Goto, Niny Khor Akihiro Kubo, Yoko Ueda, Ganeshan Wignaraja, as well as other participants in an *Asian Development Review* Conference (Manila 1-2 August 2013), an Asian Development Bank Institute seminar (Tokyo 25 October 2013), and an ICSEAD staff seminar (Kitakyushu 14 January 2014) for comments on related research. Responsibility for all opinions expressed and any remaining errors or omissions is the author's alone.

[2] I understand educational information is also available for Vietnamese firms in some recent years and the Thai census of manufacturing plants contains some information on skills of production workers. I am presently working with collaborators to perform similar analysis of these countries. I had also hoped to do similar analysis of Chinese firms, but there is little information on worker quality in the available data.

from 26 to 3.5 percent for production workers and from 34 to 15 percent for non-production workers. Industry-level, conditional differentials were also often positive in 10-11 industries in 1996, but tended to decline but most become insignificant by 2006. Both aggregate and industry-level results also suggest that differentials were relatively large for non-production workers, but the industry-level results were relatively weak for 2006. Finally, MNE-private differentials did not usually depend significantly on the extent of foreign ownership.

Chapter 1 and subsequent chapters emphasize how aggregate analysis of all sample plants combined often paints a very different picture than industry-level analysis. This contrast is starkest for Indonesia in 2006, when the aggregate results suggest that MNE-local differentials were positive and highly significant, but similar results were found for only three of 17 industries for production workers and four industries for non-production workers. Although results differ somewhat from those in the previous literature for technical reasons, these and previous results all 1996 results suggest a strong tendency for MNEs to pay higher wages than local plants, both in large samples and at the industry level.

Chapter 2 uses Malaysia industrial census data for 2000, and smaller sets of survey data for 2001-2004, to examine wage differentials between medium-large foreign multinational enterprises (MNEs) and local plants in manufacturing industries. On average, wages in sample MNEs were higher than in local plants by two-fifths or more. Malaysian data are extremely valuable because they contain information on worker occupation, in addition to worker education, allowing for a better measurement of worker quality. As the literature suggests, MNEs hired higher shares of workers in highly paid occupations and with moderate or high education. MNEs were also more capital intensive and larger than local plants. Results from large samples of 17 manufacturing industries combined suggest that statistically significant, conditional MNE-local differentials of 5-9 percent persisted after accounting for

differences in worker occupation, education, and sex, plant capital intensity and size, as well as the influences of yearly fluctuations, industry affiliation, and plant location on constants.

When MNE-local differentials and other slopes are allowed to vary among the 17 industries, positive and significant differentials were observed in all estimates for six industries: food and beverages, chemicals, rubber, general machinery, electrical machinery, and furniture. Positive and significant differentials were also observed in most estimates for another five industries. However, the size and significance of these differentials often varied depending on the industry and sample examined, as well as the estimation technique used. As in Indonesia, there are important differences between analyses of large samples of 17 industries combined and separate analysis of the 17 industries individually, but aggregate and industry-level results are relatively consistent for Malaysia.

Chapter 3 extends the analysis in Chapters 1 and 2 by asking whether MNE-local wage differentials depend on whether a plant exports or not. Mean, unconditional, MNE-local wage differentials tended to be somewhat smaller for exporters than for non-exporters in large samples of 11 manufacturing industries of Malaysia in 2000-2004 (31 vs. 44 percent) and Indonesia in 2006 (58 vs. 74 percent), and particularly in 1996 (89 vs. 220 percent). Conditional MNE-local wage differentials that account for the influences of worker education and sex, as well as plant size and capital or energy intensity, on plant-level wages, were smaller but positive and highly significant statistically. Conditional differentials were also smaller for exporters Indonesia in 1996 (24 vs. 32 percent), but larger for exporters in Indonesia in 2006 (12 vs. 5.7 percent) and Malaysia in 2000-2004 (8.8-9.2 vs. 6.2-7.5 percent in pooled OLS estimates and 7.2-7.8 vs. 4.7-6.7 percent in random effects estimates). However, at the industry level, conditional differentials and were often insignificant, especially for Indonesia in 2006, and not clearly related to export status.

Contents

Chapter 2: Wage Differentials between Foreign Multinationals and Local Plants and Worker Quality in Malaysian Manufacturing

Chapter 3: Exporting, Education, and Wage Differentials between Foreign Multinationals and Local Plants in Indonesian and Malaysian Manufacturing

Chapter 1: Wage Differentials between Foreign Multinationals and Local Plants and Worker Education in Indonesian Manufacturing

Co-author: Dionisius Narjoko
Economic Research Institute for ASEAN and East Asia, Jakarta

1.1. Introduction

Lipsey and Sjöholm's (2004a) study of manufacturing plants in Indonesia in 1996 is one of the most sophisticated studies of wage differentials between foreign multinational enterprises (MNEs) and local plants, and the relationship of the differentials to labor quality, for host, developing economies.[1] They estimate Mincer-type equations at the plant level for white- and blue-collar workers and account for the influence of worker educational background, the share of female workers, as well as other as energy per worker, material inputs per worker, and size in sample plants. They found that that MNEs paid significantly higher wages than local plants even after accounting for the educational background of the plant's work force and these other plant-level characteristics, and that these conditional wage differentials were larger for white-collar workers than for blue-collar workers (22 versus 12 percent).

This paper's first contribution is to update this analysis to 2006, the next year for which similarly detailed data are available. This update is potentially important because Indonesia went through a wrenching economic crisis beginning in late 1997, with per capita GDP only recovering to 1996 levels in 2004 if measured in constant rupiah or current U.S. dollars, for example (World Bank 2014). The manufacturing sector also experienced a marked increase in the share of activity accounted for by MNEs, particularly heavily-foreign MNEs with foreign ownership shares of 90 percent or more. Increased MNE shares were a direct result of the crisis in many cases, partially because precipitous declines in Indonesian asset prices and the

[1] These authors also examined other aspects of wage differentials and how they change over time in Lipsey and Sjöholm (2004b, 2005, 2006) and Sjöholm and Lipsey (2006).

value of the rupiah created a fire sale, which MNEs were better able to take advantage of than local capitalists, many of whom faced severe financial constraints or bankruptcy. Accelerated implementation of policy reforms instituted in the mid-1990s made it easier for MNEs to own large shares in Indonesian manufacturing plants. Privatization of state-owned enterprises (SOEs) and the transfer of SOE ownership from the central government to provincial authorities also changed important aspects of competition in some manufacturing industries. Correspondingly, the economic and policy environment was substantially different in 2006 than in 1996 for both MNEs and local manufacturing plants. It is thus of interest to examine how MNE-local wage differentials changed during this decade.

Lipsey and Sjöholm (2004a) estimated equations for all manufacturing plants combined. They allowed intercepts to differ among industries, but assumed that the slope coefficients in their equations, including the conditional MNE-local wage differential (the coefficient on a dummy variable identifying MNEs), were uniform across industries. However, studies of MNE-local wage differentials in Malaysia (Ramstetter 2012a, 2013), Thailand (Movshuk and Matsuoka-Movshuk 2006; Ramstetter 2004), and Vietnam (Ramstetter and Phan 2007) provide strong evidence than many slope coefficients, including the MNE-local wage differential, also differ among industries. Studies of productivity also indicate that MNE-local differentials and other slope coefficients in the production function also differ among industries in Indonesia (Takii 2004; Takii and Ramstetter 2005), Thailand (Ramstetter 2004), and Vietnam (Ramstetter and Phan 2013). The second contribution of this study is thus to relax the assumption of slope coefficient uniformity among industries by estimating equations for 17 manufacturing industries separately, as well as for all plants combined. As might be expected, relaxing the assumption of slope coefficient uniformity reveals that MNE-local wage differentials were small or insignificant in several industries but large and significant in others.

The third contribution is to test whether MNE-local wage differentials differ among types of MNEs, that is if they differ for heavily-foreign MNEs, majority-foreign MNEs (foreign shares of 50-89 percent), and minority-foreign MNEs (foreign shares of 33-49 percent). The primary reason for this investigation is that MNE parents are often thought to be less reluctant to share their firm-specific assets related to production technology and marketing, for example, with affiliates they do not control tightly. As a result some observers (e.g., Moran 2001) expect affiliates that are tightly controlled to be more closely integrated with the MNE's network and more efficient as a result. In some contrast, previous results for Indonesia suggest that heavily- or majority-foreign plants are actually less productive than minority-foreign plants in several industries, but that they tend to export relatively large portions of their output (Takii 2004; Takii and Ramstetter 2005; Ramstetter and Takii 2006).

The paper briefly reviews the existing literature in Section 2, and describes the data used and patterns revealed by key descriptive statistics, including unconditional MNE-private (local) differentials in wages and worker education, in Section 3. Section 4 then reviews the evidence emerging from estimates of earnings equations, focusing on patterns of conditional MNE-private wage differentials. Finally, Section 5 concludes and offers suggestions for further research.

1.2. Literature Review and Methodology

As described in the introduction, Lipsey and Sjöholm (2004a) studied large samples of plants in 1996, finding that MNEs paid higher wages than local plants and that statistically significant wage differentials persisted after accounting for the educational background of the plant's work force as well as plant size, material inputs per employee, energy per employee, and the female share of a plant's work force. Recent studies of Malaysian manufacturing plants in 2000-2004 by Ramstetter (2012a, 2013) also accounted for worker occupation, in

addition to educational background, female shares, as well as plant size and capital intensity, again finding that significant MNE-local differentials remained in samples of all plants and in most of the industry-level samples examined.[2] Ramstetter and Phan (2007) also found positive wage differentials between MNEs and local, private firms in Vietnam in 2000, 2002, and 2004, after accounting for firm's size, factor intensity, shares of technical workers, and female shares, both in the aggregate and in most industry group samples. In contrast, results from Lee and Nagaraj's (1995) sample of workers in the Klang Valley of Malaysia in 1991 suggest that foreign ownership of a plant had no significant effects on wages of either male or female workers, after several aspects of labor quality (education, experience, occupation, training) and numerous other worker- and plant-level variables were accounted for.[3]

Other studies of Malaysia (Lim 1977), Thailand (Movshuk and Matsuoka-Movshuk 2006, Ramstetter 2004), and Venezuela and Mexico (Aitken et al 1996) have found that MNE-local wage differentials tended to persist after accounting for similar plant- or firm-level characteristics, but were unable to account for the influences of labor force quality. There are also numerous studies of individuals that reveal significant returns to human capital, when measured by worker education, training, and experience, for example.[4] Still other studies focus on the gender wage gap, usually finding that females earn less than males, even after accounting for education, experience, and other determinants of earnings.[5]

[2] The use of material inputs per worker and/or energy per worker is a common proxy for capital intensity in analyses of Indonesian manufacturing plants because the coverage of the capital data is often poor. For example, Ramstetter and Narjoko (2012) report that 28-33 percent of sample plants in 12 large energy consuming industries (accounting for 75 percent of total employment and 80-82 percent of output) did not have data on fixed assets in 1996 and 43-48 percent lacked these data for 2006.

[3] These variables were union membership, marital status, migration status, total hours worked, plant size, and plant export-orientation.

[4] See Purnastuti, et al (2013) and Sohn (2013) for recent evidence on Indonesia.

[5] In addition to the study of plant-level data from Lipsey and Sjöholm (2004a), studies of individuals also provide evidence of a substantial gender pay gap in Indonesia (Feridhanusetyawan et al. 2001; Pirmana 2006).

There is thus substantial previous evidence that both plant ownership and worker quality have important influences on worker earnings. It is clear that relatively well educated, experienced, and well-trained workers generally expect relatively high returns to their work efforts. Firms or plants hiring high-quality workers usually expect relatively high productivity and offer commensurate compensation. Correspondingly, the primary reason that MNEs pay higher wages than local plants is probably the well documented tendency for MNEs to be relatively technology- or skill-intensive compared to non-MNEs (Caves 2007; Dunning 1993; Markusen 2002). However, even relatively sophisticated studies like Lipsey and Sjöholm (2004a) fail to fully account for MNE-local differences in labor quality. For example, in addition to differences in worker education, there may be important differences in worker occupation, training, background, and experience, which are often accounted for in studies of wage determination among individuals, but are not measured in plant-level data. In this study of Indonesia, for example, it is possible to account for differences in worker education and sex, but the available data do not contain information on worker background (e.g., race, nationality), occupation, experience, or training.

Other reasons for MNE-local differentials are perhaps less clear, but there are at least three important possibilities. First, there is substantial evidence that MNEs often find it difficult to identify and retain suitably qualified workers. For example, in 1998, securing adequate quantity and quality of labor was the third most common of 27 possible problems for Japanese affiliates operating in the ASEAN-4 (the four largest developing economies in the Association of Southeast Asian Nations: Indonesia, Malaysia, the Philippines, and Thailand), this problem being cited by 8.5 percent of these MNEs (Japan, Ministry of Economy, Trade and Investment 2001, pp. 536-537).[6] Other surveys also indicated that securing labor supply was the third most frequently cited of 14 investment motives of Japanese affiliates in

[6] The most commonly cited problems were (1) competition for local product markets (11.2 percent and (2) political instability (8.6 percent).

Indonesia, being cited by 16 percent of replying firms in 1996 and 13 percent in 2006 (Toyo Keizai, various years).[7] Correspondingly, many of the aforementioned studies suggest that MNEs may pay relatively high wages to secure or retain labor in economies like Indonesia.

Second, workers in host economies are often relatively familiar with management practices in local firms and may therefore be relatively reluctant to work for MNEs that often use less familiar management styles. This may lead them to demand a premium for working in the relatively unfamiliar MNE environment. There is relatively little empirical evidence on this point, though many of the studies reviewed above mention it, but there have been well-documented cases where prominent MNEs from Japan (Guerin 2002) and Korea (Hwan 2011), for example, have been accused of labor rights violations in Indonesia. This creates the impression that related bad press may have made some Indonesian workers reluctant to work for MNEs.

Third, MNEs are often hypothesized to have important firm-specific assets in relatively large amounts compared to non-MNEs.[8] These firm-specific assets are generally intangible, and many of them are related worker quality. However, even when an MNE's intangible assets are not directly related to worker skills, they may facilitate higher worker productivity by improving a firm's marketing and management, for example. In other words, the MNE's possession of firm-specific assets has the potential to make workers more productive in MNEs than in non-MNEs, even if labor quality is identical in MNEs and non-MNEs. In such

[7] The most commonly cited motives were (1) development of local markets (25 percent of replying affiliates in 1996 and 24 percent in 2006) and (2) strengthening of international competitiveness (19 percent in 1996 and 34 percent in 2006).

[8] Some theorists (especially Dunning) view the possession of firm-specific assets or ownership advantages as a key necessary condition for a firm to become an MNE (in addition to internalization and location advantages). Other theorists (Buckley and Casson 1992; Casson 1987; Rugman 1980, 1985) dispute this view, choosing instead to emphasize the role of internalization as the key distinguishing characteristic between MNEs compared to non-MNEs. However, the important point is that all agree that MNCs tend to possess these kinds of firm-specific assets in relatively large amounts.

cases, MNEs may find it profitable to pay relatively high wages to compensate for their relatively high productivity, especially when the ability to utilize firm-specific assets is related to workers' firm-specific experience or motivation, for example.

Partially reflecting differences in firm-specific assets, MNE-local wage differentials are thought to result from differences in other plant-level characteristics that might affect labor productivity and/or wages. For example, much of the literature reviewed above suggests that firms or plants which are relatively large or capital- (or input-) intensive often pay relatively high wages and have relatively high labor productivity. In addition, location and industry affiliation are found to have important influences on the wage levels in firms or plants. Thus, this paper will follow the Lipsey and Sjöholm (2004a) and estimate earnings equations that account for the influences of worker quality and sex, plant size, material inputs and energy per worker, location, and industry affiliation, as well as ownership (MNE vs. local owners). The industry dimension will also be carefully considered by the use of industry dummies in samples of all plants in 17 industries combined and by estimating separate equations for each industry (thereby allowing both intercepts and slopes to vary across industries).

1.3. Data, Unconditional Wage Differentials, and Differences in Worker Education

Plant-level data underlying the industrial censuses of medium-large plants (those with 20 or more employees) for 1996 and 2006 are used in the analysis because they are comprehensive and contain detail on worker educational background which is excluded from annual surveys. Because a number of plants are jointly owned by MNEs, SOEs, and/or private firms, joint ventures with foreign shares of 33% or more are classified as MNEs and non-MNE joint ventures with state shares of 33% or more are classified as SOEs. This cutoff is somewhat higher than the standard one for defining MNEs (foreign shares of 10% or more), but we know of no similar standard for defining SOEs and need to avoid ambiguity. As noted in

Table 1, plants with fewer than 20 paid workers and low values of output per worker or value added per worker (suggesting large, negative profits and/or wage levels well below the minimum wage) were dropped from the samples.[9] The exclusion of these plants removes most outliers and simplifies the interpretation of MNE-local differentials because MNEs were generally large, whereas excluded plants were predominately small, local, private plants.[10]

The left column of Table 1 shows the number of paid workers in sample plants for total manufacturing, the 17 sample industries that this paper focuses on, and five excluded industries.[11] We exclude four industries (tobacco, leather, printing and publishing, oil and coal) because they had fewer than 10 MNEs in one or both years and another industry (miscellaneous manufacturing) because it is relatively small and heterogeneously defined. In order to insure sufficient sample size and to include competing plants in the same industry, industries are generally defined at the 2-digit level of revision 3 of Indonesia's Standard Industrial Classification (ISIC), but four industries are 3-digit categories (footwear, rubber, plastics, furniture) and one is combination of four related 2-digit categories (electronics-related machinery). However, industry definitions for 1996 are based on revision 2 of ISIC and sometimes differ substantially from 2006 definitions. Thus, caution is necessary when interpreting trends over time at the industry level.[12]

[9] The value added per worker cutoff was 7.9 percent of the estimated national average (including small plants; Asian Development Bank 2013) but only 4.5 percent of the published average for all medium-large plants (BPS-Statistics various years) in 1996. In 2006 these ratios were 6.5 percent and 4.5 percent, respectively, but excluded plants accounted for a larger share of the overall total in 2006 (19 percent) than in 1996 (15 percent). In other words, the exclusion criteria were slightly laxer in 2006 than in 1996, but the percentage of plants excluded was larger in 2006.

[10] 98 percent of excluded plants were private in both 1996 and 2006. In contrast, private plants accounted for only 91 percent of sample plants in 1996 and 89 percent in 2006 (authors' calculations).

[11] Paid workers were 99.7 percent of total employment (including unpaid workers; Appendix Table 1d) in both manufacturing and the 17 sample industries, in both 1996 and 2006.

[12] It is impossible to construct a precise correspondence between the two revisions, because several detailed categories (i.e., at the 5- or 4-digit level) in one classification are split among

Plants in the 17 sample industries employed 4.0 million paid workers in 1996 and 4.3 million in 2006, or 92 and 90 percent, respectively, of all paid workers in plants meeting the sample criteria (Table 1). MNEs employed 19 percent of paid workers in the 17 sample industries in 1996 and 26 percent in 2006, slightly higher shares than in total manufacturing. There was a conspicuously large increase in the share of heavily-foreign MNEs from 6.2 to over 16 percent during this period, while shares of minority- and majority-foreign MNEs declined. As mentioned above, the increase in the share of heavily-foreign MNEs was closely related to the fire sale created by the financial crisis in the late 1990s and to changes in the policy environment. Conversely, the share of SOEs declined some, largely as a result of privatization.

In 1996, MNE shares were 25 percent or more only four of the 17 sample industries (electronics-related machinery, footwear, motor vehicles, and metal products) but by 2006 MNE shares exceeded this threshold in eight industries and were above 33 percent in five of them (electronics-related machinery, motor vehicles, non-electric machinery, footwear, and other transportation machinery). Thus, over this decade, MNEs have become more dominant in the four machinery categories (including motor vehicles) they often dominate in other Asian economies (Ramstetter 2012b), and remained relatively large in footwear. The dominance of MNEs in machinery is related to large shares of intangible asset costs (i.e., in technology and marketing) in these industries, because it is relatively easy (cheap) to share intangible assets among different geographical locations (Markusen 2002).

Table 2 shows unconditional wage differentials between MNEs and SOEs on the one hand, and private plants on the other, for both production and non-production workers.[13] In both

---

detailed categories in the other classification; see Appendix Table 7 for the detailed definitions used in this paper.

[13] Wage are defined to include all compensation paid to workers including wages/salaries, overtime, gifts & bonuses, and social security, whether paid in cash or in kind.

years, the mean MNE-private differential in the 17 sample industries combined was larger for non-production workers (201 and 84 percent, in 1996 and 2006, respectively) than for production workers (144 and 69 percent, respectively).[14] SOE-private differentials also declined for production workers (from 96 to 62 percent) but increased, and were relatively small for non-production workers (9 and 31 percent, respectively). At the industry level, MNE-private differentials of more than 50 percent were common in 1996 (13 of 17 industries for production workers, 16 of 17 for non-production workers), but rarer in 2006 (5 of 17 industries for production workers and 10 of 17 for non-production workers). However, the tendency for MNE-private wage differentials to be larger for non-production workers and to decline for both types of workers is clear in the industry-level data as well as the aggregate. There was only one negative MNE-local differential for non-production workers in basic metals in 2006; the corresponding differential was positive but very small in 1996 (2 percent).

When MNE ownership groups are distinguished, MNE-private differentials for production workers tended to be largest for minority-foreign plants (188 percent in 1996 and 97 percent in 2006) and smallest for heavily foreign plants (98 and 64 percent, respectively, Table 2). The pattern is also observed at the industry level. Differentials exceeding 50 percent were observed in 13 and eight industries, respectively, for minority-foreign MNEs and in eight and five industries, respectively, for heavily foreign MNEs. For non-production workers the pattern of MNE-private differentials was less consistent. In 1996, majority-foreign MNEs had the largest mean differentials when all 17 industries were combined, while differentials exceeded 50 percent in 14 industries and 100 percent in 11-12 industries for all ownership

[14] The 1996 differentials reported here are much larger than those reported by Lipsey and Sjöholm (2004a, p. 417). The major cause is probably our exclusion of plants with extremely low labor productivity and fewer than 20 paid employees (see above). In addition, Table 2 shows the difference between unweighted mean wages in sample MNEs and private plants, whereas Lipsey and Sjöholm's calculate average wages for different ownership groups at the three-digit level of ISIC revision 2, and aggregate up to two- and single-digit levels using shares of total blue-collar and white-collar employees as weights.

groups. In 2006, minority-foreign MNEs had the largest mean differentials, but majority-foreign-private differentials exceeded 50 percent in 12 industries, while minority-foreign-private differentials exceeded this threshold in only 10 industries.

Table 3 shows shares of paid workers with tertiary education. When all sample plants are combined, tertiary shares of production workers were 3.9 times larger in MNEs than in private plants in 1996 (3.7 vs. 0.95 percent), but this differential fell to 2.6 times in 2006 (4.6 vs. 1.7 percent). Not surprisingly, tertiary shares of non-production workers were substantially larger than shares of production workers. However, MNE-private differentials were smaller for non-production workers and declined less, from 2.2-fold (21 vs. 11 percent) in 1996 to 2.0-fold (36 vs. 18 percent) in 2006. Tertiary shares of non-production workers ranked consistently high (7^{th} or higher) for both MNEs and private plants in four industries (chemicals, non-electric machinery, electronics-related machinery, and motor vehicles) and consistently low (11^{th} or lower) in five industries (food and beverages, textiles, wood, rubber, and non-metallic mineral products). For production workers, ranks were consistently high in only two industries (chemicals and electronics-related machinery) and consistently low in four (textiles, apparel, footwear, and furniture). The correlation between MNE-local wage differentials and corresponding tertiary share differentials was strong (0.72-0.77) for production workers in 2006 and non-production workers in 1996, but much weaker (0.30-0.37) for production workers in 1996 and non-production workers in 2006.

Share of workers with secondary education were much larger than shares of workers with tertiary education, averaging over half of all paid workers for both production and non-production workers in MNEs in both years (Table 4). For production workers, mean shares in all sample plants were much larger than for private plants, but the difference narrowed over the decade (from 55 vs. 23 percent in 1996 to 67 vs. 37 percent in 2006). The correlation of percentage differences in these shares to MNE-private wage differentials was quite high in

2006 (0.81) but somewhat lower in 1996 (0.56). For non-production workers, mean secondary shares in the 17 sample industries were actually a few percentage points lower in MNEs (53 percent in 1996, 52 percent in 2006) than in private plants (56 percent in both years). Nonetheless, the correlation of MNE-private differences in secondary shares to corresponding wage differentials was reasonably strong in 2006 (0.65). On the other hand, this correlation was weaker and negative in 1996 (-0.40).

1.4. Conditional Wage Differentials from Estimates of Earnings Equations

The discussion above illustrates substantial, unconditional MNE-private wage differentials, and that these wage differentials often appear related to the tendency for MNEs often tend to hire relatively large shares of educated workers and correlated with other plant-level characteristics. Correspondingly, we follow the specification of Lipsey and Sjöholm (2004a) and estimate mean earnings at the plant level as a function of the educational background of workers, worker sex, energy per worker, material inputs per worker, and plant size.

$$LCE = a0 + a1(LEE) + a2(LME) + a3(LO) + a4(S5) + a5(S4) + a6(S3) + a7(S1) + a8(SF) + a9(DS) + a10(DF) \quad (1)$$

where
LCE=log of compensation per employee (rupiah)
LEE=log of energy per employee (rupiah)
LME=log of materials (including parts) per employee (rupiah)
LO=plant size, measured as the log of output (rupiah)
S5=share of paid workers with tertiary education (percent)
S4=share of paid workers who completed secondary (high school) education (percent)
S3=share of paid workers who completed junior high school education (percent)
S1=share of paid workers who did not complete primary school education (percent)
SF=share of paid workers that are female (percent)
DS=dummy variable identifying SOE plants (=1 if MNE, 0 otherwise)
DF=dummy variable identifying MNE plants (=1 if MNE, 0 otherwise)

Because plants that are energy and material input intensive, large, and skilled-worker intensive are expected to pay relatively high mean wages, the signs of *a1*, *a2*, *a3*, *a4*, *a5*, and *a6* are expected to be positive and *a7* negative. The sign of *a8* is also expected to be negative

because females generally receive less education and training than men, are often more willing to accept lower wages than men in exchange for time off to care for family members, and are frequently discriminated against in the work place. If the MNE-private differential *a10* is significantly positive, MNEs pay relatively high wages after accounting for plant-level variation in energy and material input intensity, size, and workforce educational background. Equation (1) is estimated by OLS with robust standard errors for both production and non-production workers in 1996 and 2006. Estimates also include region and industry dummies to account for industry- and region-specific factors affecting mean wages at the plant level.[15] A second equation is then estimated to see if MNE-private wage differentials depend on the extent of foreign ownership.

$$LCE = a0 + a1(LEE) + a2(LME) + a3(LO) + a4(S5) + a5(S4) + a6(S3) + a7(S1) + a8(SF) + a9(DS) + a10(DF1) + a11(DF5) + a11(DF9) \quad (2)$$

where
DF1=dummy variable identifying minority-foreign MNE plants (=1 if minority, 0 otherwise)
DF5=dummy variable identifying majority-foreign MNE plants (=1 if majority, 0 otherwise)
DF9=dummy variable identifying heavily-foreign MNE plants (=1 if heavy, 0 otherwise)

Estimates are performed for sample plants in all 17 industries combined (Table 5), as well as for each of the 17 industries separately to allow all parameters, including wage differentials, to differ among industries (Table 6). In large samples of all 17 industries, estimates of equations (1) and (2) performed more or less as expected. Coefficients on energy and material input intensity, size, and shares of workers with junior high or higher education were positive and significant, while the coefficient on the female share was negative in all estimates. The coefficient on the share of workers not completing primary education was negative and

[15] Industry dummies are defined at the 4-digit level of ISIC revision 2 for 1996 and revision 3 for 2006; this results in a larger number of dummies in 2006. Industry dummies are omitted from industry-level estimates when the industry is defined at the 4-digit level (footwear in 2006, plastics in both years, motor vehicles in 1996, furniture in 2006). Please see Appendix Tables 6a-6q for the exact number of industry dummies in each equation. Regional dummies identify plants in Sumatra, West Java, Central Java (including Yogyakarta), East Java, and East Indonesia (including Nusa Tenggara, Kalimantan, Sulawesi, Maluku, and Irian Jaya), using Jakarta as the reference region.

significant for production workers in 1996, but surprisingly, it became significantly positive in 2006. However, this coefficient was not significant for non-production workers. R^2 was 0.33 or higher in all estimates, indicating that these equations explained the variation of wages among plants relatively well in these cross sections. When estimated at the industry level, correlations were weaker in some industries and years (Appendix Tables 6a-6q). For example, equation (1)'s R^2 was as low as 0.14-0.19 for production wages in furniture in 1996 and rubber in 2006 and for non-production wages in wood in 2006. Again focusing on equation (1), coefficients were usually significant with the expected sign for plant size (55 of 68 estimates), shares of workers with tertiary and secondary education (41 estimates each), and energy per worker (40 estimates). However, less than half of the industry-level estimates of coefficients on material inputs per worker and the shares of workers with junior high education or those not completing primary education were significant with expected signs.

Estimates of equation (1) for all industries combined yielded positive and significant MNE-private wage differentials for both production and non-production workers in both 1996 and 2006 (Table 5). These conditional differentials were all substantially smaller than the unconditional differentials in Table 2 and declined over the decade, from 26 to 3.4 percent for production workers and from 34 to 15 percent for non-production workers. In contrast, SOE-private differentials remained relatively constant for production workers (19 and 16 percent, respectively) and increased for non-production workers (from 6.3 [significant at 9 percent] to 13 percent, respectively). Estimates of equation (2) indicated that MNE-private differentials did not differ significantly among MNE ownership groups if a standard 5 percent level is used.

The 1996 estimates of MNE-private differentials are substantially larger than the 12 and 22 percent, respectively, estimated by Lipsey and Sjöholm (2004a, p. 421), probably because we excluded plants with exceedingly low labor productivity from the samples and because of

differences in the definitions of industry- and region dummies.[16] Nonetheless, the key qualitative patterns were similar in both sets of results; there were positive and significant MNE-private wage differentials that were relatively large for non-production workers. Results also indicated that this pattern persisted in 2006, but that both differentials declined substantially. These trends and patterns are also consistent with those observed in unconditional differentials (Table 2) and with the view that Indonesia's labor and manufacturing markets have become more competitive over this decade.

When equation (1) is estimated at the industry level, MNE-private wage differentials are found to vary greatly among industries (Table 6). For example, textiles was only industry in which wage differentials for both production and non-production workers were positive and significant (at the standard 5 percent level) in both years. Positive and significant differentials were also observed in both years for production workers in plastics, and for non-production workers in wood and rubber. On the other hand, MNE-private differentials were never significant at standard levels for production workers in six industries (footwear, wood, paper, basic metals, non-electric machinery, and motor vehicles) or non-production workers in five others (footwear, paper, basic metals, motor vehicles, and other transportation machinery). It is tempting to speculate about why differentials were consistently significant or insignificant in certain industries, but these industry groups are heterogeneous and there is no clear reason for distinguishing among them.

In 1996, positive and significant differentials were observed in 10 of the 17 industries for both production and non-production workers (Table 6). By 2006, positive and significant

[16] In Table 5, samples were 1,079 plants (5.8 percent) smaller for production workers and 347 (2.4 percent) smaller for non-production workers than in Lipsey and Sjöholm (2004a). As indicated above, we defined industry dummies at the 4-digit level and used only 6 regional dummies, whereas Lipsey and Sjöholm used 3-digit level industry definitions and a full set of provincial dummies. Our estimates of SOE-private differentials were also relatively large (19 vs. 6 percent for production workers and 6 vs. -13 percent for non-production workers).

differentials were only observed in four industries for production workers and five industries for non-production workers. There was a single negative and significant differential for production workers in electronics-related machinery in 2006, which contrasts with the positive differential in 1996. In other words, the industry level results suggest that positive and significant MNE-private wage differentials declined or became insignificant in 1996-2006 for production workers in 10 industries and non-production workers in 11 industries. The tendency for MNE-private differentials to decline or become insignificant is consistent with results for the large samples of 17 industries combined, but the industry-level results also suggest that MNE-private differentials were not pervasive, especially in 2006.

This is illustrated by substantial variation in the size of differentials among industries (Table 6). For production workers in 1996, positive and significant differentials were relatively large (30 percent or more) in chemicals, plastics, non-metallic mineral products, metal products, and other transportation machinery, but relatively small (17 percent or less) in textiles, wood, electronics-related machinery and furniture. By 2006, all positive and significant differentials were of similar magnitude (14-18 percent), suggesting that the positive and significant differential estimated when all plants were combined (3.5 percent) was driven by plants in the relatively few industries with significant differentials.

For non-production workers, the variation of differentials among industries was more pronounced in both years (Table 6). In 1996, positive and significant differentials were relatively large (40 percent or more) in seven industries (wood, chemicals, rubber, plastics, metal products, non-electric machinery, and electronics-related machinery) and relatively small (27 percent or less) in only two (textiles and apparel). In 2006, these differentials remained relatively large in rubber and became relatively large in non-metallic mineral products. The other three positive and significant differentials were also larger than the estimate for all plants combined (23-28 percent vs. 15 percent). Thus, as with production

workers, the relatively low differential observed for all industries are combined again suggests that the aggregate result reflects the combined influence of large positive differentials in a few industries and insignificant differentials in most industries. Because most differentials were insignificant, significantly positive wage differentials were larger for non-production workers in only five industries in 2006, compared to nine industries in 1996.

Tests of the hypothesis that conditional MNE-private wage differentials varied among foreign ownership groups were not rejected at the standard 5 percent level in about three fourths of the 17 industries in both years (Table 6). And when differentials varied among ownership groups, patterns varied greatly over time and among industries. For production workers in 1996, significant differentials were observed in four industries (wood, paper, non-metallic mineral products, and furniture). In the first three industries, differentials were relatively large for minority-foreign plants and insignificant for heavily-foreign plants, while this pattern was reversed in furniture, but only if a 10 percent significance level is used. In 2006, there were significant differences among MNE ownership groups in five industries. Three of these results involved negative differentials for majority-foreign (footwear) or minority-foreign (motor vehicles, other transportation machinery) MNEs. The other two involved positive differentials for heavily foreign MNEs (rubber, plastics).

For non-production workers in 1996, there were significant positive differentials involving minority-foreign MNEs in furniture, majority-foreign MNEs in wood, rubber, and non-metallic mineral products, as well as heavily-foreign MNEs in rubber. There was also a significantly negative differential for heavily foreign MNEs in wood. By 2006, there were only two significant differential coefficients, for minority-foreign MNEs in chemicals and majority-foreign MNEs in non-electric machinery. The Wald test of coefficient equality also indicated significant differences among ownership groups in plastics, but none of the

individual coefficients were significant at the standard level. Thus, these results suggest that MNE-private wage differentials were not strongly related to the foreign ownership share.

1.5. Conclusions and Future Research

This paper has extended research on wage differentials between MNEs and private plants in Indonesian manufacturing in three important respects. First, it added analysis of 2006 to 1996, finding that unconditional and conditional wage differentials in most industries appear to have declined during 1996-2006, but that wage differentials tended to be larger for non-production workers than for production workers in both periods. If all sample plants are combined, unconditional wage differentials fell from an average of 144 to 69 percent for production workers and from 201 to 84 percent for non-production workers. Conditional differentials that account for the influences or worker education and sex, as well as plant size, energy per worker, and material inputs per worker, were much smaller but revealed similar trends and patterns, falling from 26 to 3.5 percent for production workers and from 34 to 15 percent for non-production workers. These aggregate results suggest somewhat larger differentials than previous 1996 results in Lipsey and Sjöholm (2004a), mainly because several plants reporting unrealistically low labor productivity and a few small industries were excluded from the samples used in this study. However, both studies observe significantly positive, conditional differentials which were larger for non-production workers than for production workers.

Second, in addition to examining aggregate wage differentials, this study extended the analysis to cover 17 industries separately. This extension is probably the paper's most important contribution and indicates that significant, conditional wage differentials were not that pervasive among industries, especially for 2006. Even in 1996, industry-level differentials were not significant at standard levels in about two-fifths of the industries for both production and non-production workers. By 2006, insignificant differentials

predominated, with positive and significant differentials observed for just under one-fifth of the industries for production workers and one fourth for non-production workers. Similarly, wage differentials were larger for non-production workers than for production workers in only five industries in 2006, compared to nine in 1996. On the other hand, the industry-level analysis was consistent with the aggregate analysis in suggesting a tendency for MNE-private differentials to decline in most industries.

Third, the paper asked whether MNE-private differentials depended on the extent of foreign ownership in MNEs. The answer to this question was generally no. And in the few cases when there were significant differences in wage differentials among MNE ownership groups, the emerging patterns were not consistent among ownership groups, industries, or years. In other words, the distinction of MNE ownership groups does not appear particularly meaningful when analyzing MNE-private wage differentials in Indonesia.

As reported for other years in Lipsey and Sjöholm (2004b, 2005, 2006) and Sjöholm and Lipsey (2006), there are several related but equally important topics that should be examined in future research. For example, one can investigate how takeovers or changes in ownership affect both wages and employment, or the effect of MNE presence on wages in local plants (i.e., wage spillovers). All of these analyses require some degree of data panelization, which is particularly difficult after the 1998 crisis mainly because of large variations in sample coverage and the increased share of sample plants reporting unreasonable data. Long panels spanning the crisis are also likely to be misleading because of large changes in economic activity, as well as data collection. Nevertheless, it should be possible to create shorter panels combining the census year data on worker education with census and annual survey data for other variables in surrounding years, which can help address the issues mentioned above. In addition, the panel dimension could be used to account for potential simultaneity bias that is not easily accounted for in cross sections because of the lack of good instruments.

Unfortunately, however, as in Lipsey and Sjöholm (2004a), a potentially important omitted variable bias may remain because of the inability to account for aspects of worker quality not related to education such as experience, occupation, and training.

References:

Aitken, Brian, Ann. Harrison and Robert E. Lipsey (1996) "Wages and Foreign Ownership: A Comparative study of Mexico, Venezuela, and the United States", *Journal of International Economics*, 40(3-4), 345-371.

BPS-Statistics (various years), *Statistik Industri* (*Industrial Statistics*), various volumes and underlying plant-level data, 1990-2009 issues. Jakarta: Badan Pusat Statistik.

Buckley, Peter J. and Mark Casson (1992), *The Future of the Multinational Enterprise*, 2nd Edition. London: Macmillan.

Casson, Mark (1987), *The Firm and the Market: Studies on the Multinational and the Scope of the Firm*, Cambridge, MA: MIT Press.

Caves, Richard E. (2007), *Multinational Enterprise and Economic Analysis*, 3rd edition, London: Cambridge University Press.

Dunning, John H. (1993), *Multinational Enterprises and the Global Economy*. Workingham, U.K.: Addison-Wesley Publishing Co.

Feridhanusetyawan, Tubagus, Haryo Aswicahyono and Ari A Perdana (2001), "The Male-Female Wage Differentials in Indonesia", Economics Working Paper Series 059, Jakarta: Centre for Strategic and International Studies.

Guerin, Bill (2002), "Sony pullout plan rocks Indonesia", *Asia Times*, 7 December, http://www.atimes.com/atimes/Southeast_Asia/DL07Ae01.html.

Hwan, Shin Yoon (2011), Labor Relations in Korean Companies in Indonesia: Focusing on the Early Period", Kyoto Review of Southeast Asia (11), http://kyotoreview.org/issue-11/labor-relations-in-korean-companies-in-indonesia-focusing-on-the-early-period/

Lee, Kiong-Hock and Shyamala Nagaraj (1995), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", *Journal of Development Studies*, 31(3), 467-480.

Lim, David (1977), "Do Foreign Companies Pay Higher Wages than Their Local Counterparts in Malaysian Manufacturing", *Journal of Development Economics*, 4(1), 55-66.

Lipsey, Robert E., and Fredrik Sjöholm (2004a), "Foreign Direct Investment, Education, and Wages in Indonesian Manufacturing", *Journal of Development Economics*, 73(1), 415-22.

Lipsey, Robert E., and Fredrik Sjöholm (2004b), "FDI and Wage Spillovers in Indonesian Manufacturing," *Review of World Economics*, 40(2), 321-32.

Lipsey, Robert E. and Fredrik Sjöholm (2005), “Host Country Impacts of Inward FDI: Why Such Different Answers?” in Theodore H. Moran, Edward M. Graham, and Magnus Blomstrom, eds., *Does Foreign Direct Investment Promote Development?*, Washington D.C.: Institute for International Economics, pp. 23-43.

Lipsey, Robert E. and Fredrik Sjöholm (2006), “Foreign Multinationals and Wages in Indonesia” in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 35-53.

Markusen, James R. (2002), *Multinational Firms and the Theory of International Trade*. Cambridge, MA: M.I.T. Press.

Moran, Theodore H. (2001) *Parental Supervision: The New Paradigm for Foreign Direct Investment and Development*. Washington, D.C.: Institute for International Economics.

Movshuk, Oleksandr and Atsuko Matsuoka-Movshuk (2006), “Multinationals and Wages in Thai Manufacturing”, in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 54-81.

Pirmana, Viktor (2006), “Earnings Differential between Male-Female in Indonesia: Evidence from Sakernas Data”, Working Paper in Economics and Development Studies 2006-08, Bandung: Padjadjaran University.

Purnastuti, Losina, Paul W. Miller, and Ruhul Salim (2013), "Declining rates of return to education, evidence for Indonesia", *Bulletin of Indonesian Economic Studies*, 49(2), 213-236.

Ramstetter, Eric D. (2004) "Labor productivity, wages, nationality, and foreign ownership shares in Thai manufacturing, 1996-2000", *Journal of Asian Economics*, 14(6), 861-884.

Ramstetter, Eric D. (2012a), “Do Multinationals Pay High Wages in Malaysian Manufacturing?”, Working Paper 2012-05, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2012b), “Foreign Multinationals in East Asia’s Large Developing Economies”, Working Paper 2012-06, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2013), “Wage Differentials between Foreign Multinationals and Local Plants and Worker Quality in Malaysian Manufacturing”, Working Paper 2013-22, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Dionsius Narjoko (2012), “Ownership and Energy Efficiency in Indonesia’s Manufacturing Plants”, Working Paper 2012-14, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Phan Minh Ngoc (2007), “Employee Compensation, Ownership, and Producer Concentration in Vietnam's Manufacturing Industries", Working Paper 2012-07, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Sadayuki Takii, (2006), “Exporting and Foreign Ownership in Indonesian Manufacturing”, *Economics and Finance in Indonesia* 54(3), 317–345.

Rugman, Alan M., (1980) "Internalization as a General Theory of Foreign Direct Investment: A Re-Appraisal of the Literature," *Weltwirtschaftliches Archiv*, 116(2), 365-379.

Rugman, Alan M. (1985) "Internalization is Still a General Theory of Foreign Direct Investment," *Weltwirtschaftliches Archiv*, 121(3), 570-575.

Sjöholm, Fredrik and Robert E. Lipsey (2006), "Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data", *Economic Development and Cultural Change*, 55(1), 201-221.

Sohn, Katie (2013), "Monetary and Nonmonetary Returns to Education in Indonesia", *The Developing Economies*, 51(1), 34-59.

Takii, Sadayuki (2004), "Productivity Differentials between Local and Foreign Plants in Indonesian Manufacturing, 1995," *World Development*, 32(11), 1957-1969.

Takii, Sadayuki and Eric D. Ramstetter (2005) "Multinational Presence and Labor Productivity Differentials in Indonesian Manufacturing 1975-2001", *Bulletin of Indonesian Economic Studies*, 41(2), 221-242.

Toyo Keizai (various years), *Kaigai Shinshutsu Kigyou Souran: Kaisha Betsu Hen [A Comprehensive Survey of Firms Overseas: Compiled by Company]*, 1997 and 2007 issues. Tokyo: Toyo Keizai.

World Bank (2014), *World Development Indicators*, data downloaded 21 January. http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators#.

Table 1: Total paid workers (production & non-production) in sample plants (all plants in 1000s; SOE & MNE shares in % of industry subtotals)

	1996						2006					
	All	SOE	MNE-	MNEs by foreign share			All	SOE	MNE-	MNEs by foreign share		
Industry	plants	shares	shares	33-49	50-89	90+	plants	shares	shares	33-49	50-89	90+
Manufacturing	3,955	7.0	18.2	3.4	8.7	6.1	4,258	5.5	25.1	2.4	7.0	15.6
17 sample industries	3,620	7.3	18.9	3.6	9.1	6.2	3,835	5.8	26.1	2.0	7.7	16.4
Food & beverages	525	22.6	9.9	3.2	4.7	2.1	665	11.2	17.5	2.1	6.2	9.3
Textiles	596	3.1	13.3	1.4	7.8	4.1	529	2.1	17.3	0.7	8.9	7.8
Apparel	373	1.0	23.2	4.8	6.8	11.7	500	3.1	30.6	2.8	2.8	25.0
Footwear	300	0.6	44.9	6.7	24.8	13.4	198	0.6	44.7	0.2	18.3	26.2
Wood products	396	1.2	9.2	3.1	3.7	2.4	279	0.7	13.0	1.1	3.8	8.0
Paper products	91	6.4	18.7	7.0	7.0	4.7	124	17.1	18.3	5.1	6.7	6.5
Chemicals	182	12.4	19.0	3.3	11.9	3.9	200	9.0	21.5	2.2	7.8	11.5
Rubber products	116	23.7	15.9	1.2	8.9	5.8	136	13.9	28.9	0.4	19.8	8.6
Plastic products	163	0.2	9.0	0.9	5.0	3.1	185	4.1	17.6	1.3	4.7	11.5
Non-metallic mineral products	169	6.9	12.0	6.8	5.0	0.2	161	8.0	22.0	7.8	8.8	5.4
Basic metals	50	14.5	20.7	1.8	14.5	4.5	65	4.7	20.5	2.9	7.8	9.8
Metal products	159	1.6	24.8	6.2	14.4	4.2	109	3.7	27.1	2.6	6.9	17.7
Non-electric machinery	43	19.0	20.6	1.9	14.3	4.4	105	4.4	49.1	0.4	11.4	37.3
Electronics-related machinery	178	1.9	51.4	1.8	19.8	29.8	232	1.4	65.6	1.5	5.5	58.6
Motor vehicles	61	0.5	29.0	15.9	11.7	1.4	85	-	54.8	5.1	20.8	28.9
Other transportation machinery	70	38.7	19.5	7.0	8.0	4.5	71	24.1	33.0	0.8	21.1	11.1
Furniture	149	0.3	6.6	0.3	3.0	3.3	191	4.1	12.8	0.4	1.2	11.2
5 excluded industries	335	3.2	10.4	0.6	4.9	5.0	423	3.2	16.0	6.3	1.2	8.5
Tobacco	172	0.7	1.6	-	0.4	1.2	241	2.5	12.4	10.8	0.1	1.6
Leather	25	2.3	14.6	1.2	7.9	5.5	25	0.5	36.2	1.0	3.2	31.9
Printing & publishing	69	12.0	4.4	0.9	3.6	-	62	7.5	1.8	0.9	0.7	0.3
Oil & coal products	3	16.0	22.0	3.5	-	18.5	6	4.8	8.5	0.6	0.4	7.5
Miscellaneous manufacturing	66	0.1	37.3	1.5	16.8	19.0	90	2.7	30.5	-	3.9	26.6

Notes and Sources: - = no plants in the category; samples exclude plants with less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Table 2: SOE-private and MNE-private wage differentials for paid workers by type in sample plants (percentage differences)

	1996					2006				
	SOE-	MNE-	MNE-private by share			SOE-	MNE-	MNE-private by share		
Industry	private	private	33-49	50-89	90+	private	private	33-49	50-89	90+
Production workers, manufacturing	95	137	182	159	93	63	66	95	73	61
17 sample industries	96	144	188	166	98	62	69	97	75	64
Food & beverages	122	154	157	181	112	88	93	122	94	89
Textiles	15	72	75	99	40	22	55	36	48	61
Apparel	-15	41	30	56	33	14	45	38	32	47
Footwear	14	40	49	34	48	14	24	646	7	8
Wood products	14	68	109	93	12	102	25	80	31	20
Paper products	142	107	224	39	186	35	44	-4	139	29
Chemicals	129	225	180	252	183	36	57	81	53	55
Rubber products	52	64	-3	100	36	19	24	54	-8	47
Plastic products	69	121	101	126	121	22	52	134	14	59
Non-metallic mineral products	162	247	575	172	14	109	106	245	94	78
Basic metals	191	42	120	64	-7	60	15	29	28	5
Metal products	54	135	198	153	76	9	48	55	53	45
Non-electric machinery	67	100	138	97	73	194	29	-13	37	28
Electronics-related machinery	204	73	95	45	94	62	17	5	23	16
Motor vehicles	129	87	133	74	38	-	28	-15	25	36
Other transportation machinery	97	171	141	169	222	62	30	-49	47	30
Furniture	5	24	7	44	17	29	8	24	28	6

Table 2 (continued)

	1996					2006				
	SOE-	MNE-	MNE-private by share			SOE-	MNE-	MNE-private by share		
Industry	private	private	33-49	50-89	90+	private	private	33-49	50-89	90+
Non-production workers, manufacturing	11	194	179	222	161	30	82	114	90	76
17 sample industries	9	201	190	230	166	31	84	117	92	78
Food & beverages	26	225	158	293	157	33	106	155	110	97
Textiles	14	144	46	215	82	-1	106	311	102	95
Apparel	-26	188	120	224	179	69	52	69	90	45
Footwear	68	82	11	82	104	43	95	-43	96	101
Wood products	-5	205	90	285	146	32	37	16	23	43
Paper products	19	66	111	42	87	28	28	18	55	23
Chemicals	-3	198	222	198	181	40	46	90	61	30
Rubber products	16	160	-30	222	126	51	91	23	95	93
Plastic products	-33	183	146	140	228	13	33	87	-11	43
Non-metallic mineral products	51	156	148	207	-14	80	162	198	143	170
Basic metals	-0	2	80	-5	-15	46	-13	7	-11	-18
Metal products	-38	218	185	291	92	9	66	71	77	63
Non-electric machinery	18	170	332	131	118	-36	56	27	83	47
Electronics-related machinery	89	107	80	84	132	-64	36	8	17	40
Motor vehicles	-22	171	170	148	270	-	72	80	68	72
Other transportation machinery	46	168	191	176	101	11	32	60	43	27
Furniture	-37	60	455	35	42	42	64	104	138	54

Notes and Sources: see Table 1.

Table 3: Shares of paid workers with tertiary education in sample plants (percent)

	1996			2006		
Industry	Private	SOEs	MNEs	Private	SOEs	MNEs
Production workers, manufacturing	1.015	2.407	3.656	2.045	3.572	4.533
17 sample industries	0.946	2.310	3.737	1.670	3.257	4.607
Food & beverages	0.786	1.976	3.043	1.508	3.054	5.274
Textiles	0.641	0.837	1.827	0.952	1.235	2.232
Apparel	0.449	0.694	2.176	0.659	0.592	1.706
Footwear	0.713	1.006	1.462	1.016	1.149	2.256
Wood products	0.594	0.331	1.906	1.339	2.042	3.839
Paper products	1.300	2.918	6.717	2.745	4.167	6.224
Chemicals	2.646	4.844	9.301	5.604	8.136	10.862
Rubber products	0.984	0.915	0.891	2.048	1.376	1.240
Plastic products	0.909	1.222	3.729	1.266	1.644	2.683
Non-metallic mineral products	0.713	2.234	2.401	1.188	4.016	4.731
Basic metals	2.337	5.476	2.846	4.576	7.494	5.084
Metal products	1.324	3.348	2.482	2.492	3.049	4.434
Non-electric machinery	2.225	1.564	3.617	3.788	7.005	3.799
Electronics-related machinery	2.763	14.690	4.406	4.606	1.120	6.109
Motor vehicles	1.757	0.000	6.394	2.927	-	3.200
Other transportation machinery	1.806	9.259	3.897	3.201	11.311	3.919
Furniture	0.537	0.600	0.692	1.007	0.623	1.937
Non-production workers, manufacturing	12.185	10.323	26.182	18.256	19.403	35.640
17 sample industries	11.853	9.606	26.191	17.740	18.452	35.990
Food & beverages	7.377	6.497	20.645	11.509	12.128	25.698
Textiles	10.996	10.459	21.176	16.594	17.102	36.624
Apparel	12.304	5.727	25.953	11.879	17.829	29.280
Footwear	13.438	15.914	21.946	20.402	32.594	37.321
Wood products	10.217	9.590	19.536	15.814	28.650	26.873
Paper products	16.492	27.867	20.732	23.887	23.842	36.659
Chemicals	17.493	15.102	31.760	29.731	26.735	40.143
Rubber products	10.039	5.195	11.884	18.046	11.544	20.201
Plastic products	13.184	14.565	25.908	21.666	18.155	39.101
Non-metallic mineral products	8.785	13.592	21.099	15.203	21.562	28.162
Basic metals	22.051	27.145	21.314	30.961	22.249	35.050
Metal products	16.429	9.331	32.231	23.352	31.343	38.064
Non-electric machinery	16.823	21.851	34.795	30.619	24.039	38.773
Electronics-related machinery	22.522	33.399	34.244	31.916	44.827	45.068
Motor vehicles	18.573	0.000	32.312	30.217	-	39.183
Other transportation machinery	14.533	19.038	27.225	23.745	26.941	42.016
Furniture	12.799	15.364	21.446	20.814	18.848	41.729

Notes and Sources: see Table 1.

Table 4: Shares of paid workers with secondary education in sample plants (percent)

	1996			2006		
Industry	Private	SOEs	MNEs	Private	SOEs	MNEs
Production workers, manufacturing	23.37	33.49	54.53	37.42	48.96	66.72
17 sample industries	22.85	32.03	55.12	37.35	48.55	67.11
Food & beverages	14.44	28.14	43.30	26.06	41.86	56.78
Textiles	22.15	24.59	41.37	35.71	53.44	63.02
Apparel	17.49	39.77	42.70	29.60	46.28	46.65
Footwear	24.22	62.65	46.64	37.48	45.09	58.78
Wood products	26.60	32.86	46.50	37.01	51.00	57.56
Paper products	35.77	62.77	54.08	56.77	56.77	74.29
Chemicals	33.00	45.17	55.98	51.01	53.35	62.87
Rubber products	23.99	17.15	23.21	44.77	35.02	57.20
Plastic products	24.47	38.80	64.32	51.43	61.16	75.79
Non-metallic mineral products	12.40	36.91	52.11	27.30	50.54	64.74
Basic metals	47.65	57.07	58.79	67.69	77.69	75.59
Metal products	33.32	36.74	70.36	53.02	67.53	73.28
Non-electric machinery	48.31	64.87	79.26	69.77	72.33	74.61
Electronics-related machinery	50.11	49.64	78.53	73.46	82.85	87.16
Motor vehicles	49.03	76.51	80.49	67.39	-	82.71
Other transportation machinery	33.63	57.19	61.89	61.63	50.97	79.59
Furniture	21.25	25.80	41.84	35.55	44.17	52.61
Non-production workers, manufacturing	56.54	44.07	53.00	55.85	53.48	52.38
17 sample industries	56.41	43.12	52.72	56.17	53.84	52.13
Food & beverages	47.47	39.00	47.89	49.52	52.47	55.65
Textiles	56.68	45.39	54.46	60.62	59.18	52.14
Apparel	60.91	74.80	55.58	65.27	57.90	53.12
Footwear	65.36	76.27	61.21	60.37	57.47	50.25
Wood products	60.17	53.81	51.98	57.88	46.57	53.62
Paper products	60.31	45.83	61.00	61.31	56.20	55.02
Chemicals	58.82	44.59	47.22	54.15	56.91	46.45
Rubber products	58.63	31.42	41.94	51.42	39.08	53.98
Plastic products	60.23	34.72	53.75	61.68	58.83	51.80
Non-metallic mineral products	48.23	51.88	56.73	45.21	45.76	58.22
Basic metals	57.05	59.81	57.29	58.08	68.49	53.88
Metal products	62.79	60.83	52.62	60.87	57.25	53.20
Non-electric machinery	66.39	46.06	55.05	58.86	64.34	53.55
Electronics-related machinery	58.97	47.87	52.20	56.62	50.97	49.33
Motor vehicles	63.28	78.74	56.01	59.88	-	54.93
Other transportation machinery	60.74	57.95	52.80	63.36	62.04	53.44
Furniture	60.71	63.73	62.42	55.56	57.25	47.94

Notes and Sources: see Table 1.

Table 5: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; 17 sample industries combined

Independent	Production workers		Non-production workers	
variable, indicator	1996	2006	1996	2006
Equation (1)				
LEE	0.0567 a	0.0481 a	0.0969 a	0.0807 a
LME	0.0348 a	0.0294 a	0.0265 a	0.0371 a
LO	0.0841 a	0.0764 a	0.1410 a	0.1073 a
S5	0.0101 a	0.0068 a	0.0079 a	0.0085 a
S4	0.0015 a	0.0035 a	0.0035 a	0.0062 a
S3	0.0005 a	0.0027 a	0.0020 a	0.0053 a
S1	-0.0006 a	0.0009 b	-0.0006	-0.0004
SF	-0.0028 a	-0.0023 a	-0.0019 a	-0.0017 a
DS	0.1916 a	0.1653 a	0.0625 c	0.1255 a
DF	0.2586 a	0.0348 b	0.3364 a	0.1464 a
Observations	17,376	20,451	14,264	16,600
R^2	0.44	0.41	0.42	0.34
Equation (2)				
LEE	0.0567 a	0.0481 a	0.0969 a	0.0779 a
LME	0.0348 a	0.0295 a	0.0265 a	0.0371 a
LO	0.0838 a	0.0764 a	0.1409 a	0.1090 a
S5	0.0101 a	0.0068 a	0.0079 a	0.0089 a
S4	0.0015 a	0.0035 a	0.0035 a	0.0064 a
S3	0.0005 a	0.0027 a	0.0020 a	0.0053 a
S1	-0.0006 a	0.0009 b	-0.0006	-0.0006
SF	-0.0028 a	-0.0023 a	-0.0019 a	-0.0016 a
DS	0.1923 a	0.1651 a	0.0629 c	0.1032 b
DF1	0.3231 a	0.0865	0.3215 a	0.2363 a
DF5	0.2741 a	-0.0067	0.3633 a	0.1739 a
DF9	0.2142 a	0.0460 b	0.3053 a	0.1292 a
TestDFs	2.44 c	1.34	0.54	1.28
Observations	17,376	20,451	14,264	16,600
R^2	0.42	0.40	0.42	0.33

Note: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies and 91 (1996) or 102 (2006) industry dummies (see the text for definitions); full results including the constant and all dummy coefficients are available from the authors.

Table 6: OLS Estimates of MNE-Private Compensation Differentials from Equations (1) and (2); all p-values based on robust standard errors; industry-level estimates

	Production workers		Non-production workers	
Industry, variable, statistic	1996	2006	1996	2006
Equation (1)				
17 sample indusries combined	0.2586 a	0.0348 b	0.3364 a	0.1464 a
Food & beverages	0.2812 a	0.0255	0.2694 a	0.1232
Textiles	0.1648 a	0.1432 a	0.3488 a	0.2826 a
Apparel	0.0511	0.1725 a	0.1839 b	0.0135
Footwear	0.1093	-0.0698	0.1400	0.2013
Wood products	0.1244 c	-0.0304	0.4247 a	0.2493 b
Paper products	0.0582	-0.1286	0.1711	0.1147
Chemicals	0.4210 a	-0.0101	0.4491 a	0.0389
Rubber products	0.2314 a	0.0170	0.5269 a	0.4073 a
Plastic products	0.4215 a	0.1829 b	0.6451 a	0.0775
Non-metallic mineral products	0.3111 a	-0.0452	0.1537	0.4390 a
Basic metals	0.0302	0.1632 c	-0.0629	-0.0384
Metal products	0.3221 a	0.0850 c	0.3962 a	0.0981
Non-electric machinery	0.1347	0.0675	0.4137 a	0.1802 c
Electronics-related machinery	0.1730 a	-0.1480 a	0.3976 a	-0.0702
Motor vehicles	0.1376	-0.0396	0.1565	0.1234
Other transportation machinery	0.4106 a	-0.0877	0.1516	-0.1477
Furniture	0.1426 b	-0.0305	0.0272	0.2306 a
Equation (2); coefficients shown if at TestDFs was significant at 5% or better				
17 industries, TestDFs	2.44 c	1.34	0.54	1.28
Food & Beverages, Test DFs	1.49	0.83	2.46 c	0.80
Textiles, TestDFs	0.43	1.00	1.00	0.50
Apparel, TestDFs	0.27	1.51	0.97	0.27
Footwear, *DF1*	-	-	-	-
DF5	-	-0.2471 b	-	-
DF9	-	-0.0934	-	-
TestDFs	0.20	3.25 b	1.15	1.30
Wood products, *DF1*	0.3333 b	-	-0.1225	-
DF5	0.2058 c	-	0.5555 a	-
DF9	-0.1061	-	0.4934 a	-
TestDFs	5.67 a	0.32	3.74 b	0.42
Paper products, *DF1*	0.5344 a	-	-	-
DF5	0.0048	-	-	-
DF9	-0.1301	-	-	-
TestDFs	5.92 a	0.82	0.53	0.29
Chemicals, *DF1*	-	-	-	0.4312 b
DF5	-	-	-	0.1134
DF9	-	-	-	-0.0642
TestDFs	0.17	1.56	0.56	3.34 b

Table 6 (continued)

	Production workers		Non-production workers	
Industry, variable, statistic	1996	2006	1996	2006
Equation (2) continued				
Rubber products, *DF1*	-0.1099	0.0869	-0.0716	-
DF5	0.2741 b	-0.3747 c	0.6802 a	-
DF9	0.2994 a	0.2856 a	0.5024 a	-
TestDFs	2.55 c	5.28 a	6.40 a	0.24
Plastics, *DF1*	-	0.6122 b	-	0.3082
DF5	-	0.0159	-	-0.2344 c
DF9	-	0.2238 b	-	0.1897 c
TestDFs	0.42	3.05 b	1.28	3.28 b
Non-metallic mineral prod., *DF1*	0.6440 a	-	-0.3195	-
DF5	0.2254 b	-	0.3834 b	-
DF9	0.1649	-	0.0525	-
TestDFs	3.08 b	0.47	3.56 b	0.56
Basic metals, Test DFs	0.17	0.08	1.16	0.14
Metal products, TestDFs	1.64	0.49	0.85	0.33
Non-electric machinery, *DF1*	-	-	-	0.3155 c
DF5	-	-	-	0.4913 a
DF9	-	-	-	0.0390
TestDFs	0.88	0.29	0.31	3.41 b
Electronics-related mach., TestDFs	1.30	0.59	0.23	0.11
Motor vehicles, *DF1*	-	-0.3187 b	-	-
DF5	-	-0.2317	-	-
DF9	-	0.0947	-	-
TestDFs	0.53	5.84 a	0.51	0.32
Other transportation machinery	-	-0.9923 a	-	-
DF5	-	0.0282	-	-
DF9	-	-0.0767	-	-
TestDFs	0.81	10.85 a	0.05	0.03
Furniture, *DF1*	-0.0795	-	1.1484 b	-
DF5	0.1480	-	-0.2757	-
DF9	0.1577 c	-	0.0548	-
TestDFs	3.25 b	0.16	3.16 b	0.42

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; see Appendix Tables A6a-A6q for other slope coefficients and indicators; full results including all coefficients and equation details are available from the authors.

Appendix Table 1a: Paid workers in sample plants (thousands)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	2,959.7	275.07	720.01	133.48	345.88	240.65	2,954.5	235.80	1,067.8	101.98	299.84	665.99
17 sample industries	2,669.9	264.49	685.20	131.54	329.60	224.06	2,612.4	222.39	999.95	75.15	294.96	629.84
Food & beverages	353.74	118.67	52.19	16.67	24.70	10.82	474.45	74.15	116.42	13.83	41.07	61.53
Textiles	498.32	18.68	79.00	8.11	46.70	24.20	426.70	11.13	91.49	3.48	46.85	41.16
Apparel	282.47	3.56	86.53	17.84	25.28	43.41	331.64	15.49	153.35	14.09	13.99	125.27
Footwear	163.36	1.86	134.60	20.18	74.30	40.12	108.19	1.22	88.45	0.31	36.22	51.93
Wood products	354.85	4.61	36.59	12.40	14.84	9.35	240.37	2.05	36.16	3.20	10.65	22.31
Paper products	67.97	5.82	16.95	6.32	6.33	4.30	80.33	21.29	22.81	6.37	8.38	8.06
Chemicals	125.08	22.63	34.71	5.94	21.67	7.09	138.74	18.00	43.03	4.36	15.61	23.06
Rubber products	69.87	27.51	18.47	1.41	10.36	6.70	77.65	18.78	39.11	0.55	26.88	11.69
Plastic products	147.63	0.33	14.65	1.41	8.20	5.05	145.03	7.51	32.52	2.38	8.77	21.37
Non-metallic mineral products	137.31	11.59	20.25	11.48	8.52	0.26	112.73	12.82	35.43	12.51	14.21	8.70
Basic metals	32.47	7.25	10.37	0.89	7.24	2.24	48.55	3.05	13.30	1.89	5.08	6.34
Metal products	116.62	2.57	39.41	9.82	22.91	6.69	75.11	4.07	29.46	2.79	7.47	19.20
Non-electric machinery	26.28	8.25	8.94	0.83	6.20	1.91	48.92	4.67	51.65	0.40	12.04	39.20
Electronics-related machinery	83.34	3.30	91.50	3.23	35.20	53.07	76.69	3.26	152.52	3.39	12.86	136.27
Motor vehicles	42.65	0.29	17.58	9.64	7.09	0.84	38.27	-	46.34	4.28	17.58	24.48
Other transportation machinery	29.24	27.10	13.66	4.92	5.58	3.17	30.47	17.15	23.48	0.58	15.03	7.88
Furniture	138.71	0.47	9.80	0.44	4.52	4.85	158.52	7.75	24.44	0.76	2.28	21.39
5 excluded industries	289.79	10.58	34.81	1.94	16.27	16.59	342.11	13.42	67.85	26.82	4.88	36.15
Tobacco	168.08	1.24	2.82	-	0.68	2.14	205.24	5.94	29.98	26.00	0.12	3.86
Leather	20.91	0.58	3.66	0.29	2.00	1.37	15.58	0.12	8.90	0.25	0.79	7.86
Printing & publishing	57.74	8.27	3.05	0.59	2.46	-	56.44	4.65	1.13	0.54	0.42	0.17
Oil & coal products	1.60	0.41	0.57	0.09	-	0.48	5.00	0.28	0.49	0.04	0.03	0.43
Miscellaneous manufacturing	41.47	0.08	24.71	0.97	11.14	12.60	59.86	2.43	27.35	-	3.52	23.83

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1b: Paid production workers in sample plants (thousands)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	2,494.4	165.06	610.23	105.84	290.33	214.07	2,482.4	176.19	900.40	77.17	247.64	575.59
17 sample industries	2,245.2	157.85	579.59	104.20	276.51	198.88	2,178.4	165.10	847.74	61.47	243.45	542.82
Food & beverages	277.50	65.73	37.93	13.04	17.90	6.99	372.30	51.97	96.41	10.84	34.80	50.77
Textiles	427.07	15.12	68.85	7.04	39.59	22.23	374.29	9.16	80.10	3.20	40.51	36.40
Apparel	253.78	3.28	77.74	13.60	23.52	40.61	300.27	14.41	142.00	13.67	13.06	115.27
Footwear	150.54	1.67	126.26	18.50	69.99	37.77	92.62	1.06	77.74	0.24	33.59	43.90
Wood products	301.96	3.66	31.61	11.26	12.24	8.11	205.62	1.82	31.38	2.92	8.91	19.55
Paper products	52.17	2.91	13.40	4.26	5.58	3.56	63.64	16.22	14.46	4.65	4.35	5.46
Chemicals	93.07	10.90	21.34	3.64	13.16	4.55	93.97	10.21	28.08	3.30	9.74	15.04
Rubber products	54.48	15.66	14.11	0.80	7.87	5.45	61.90	15.19	33.04	0.33	22.98	9.73
Plastic products	127.71	0.25	11.84	1.04	6.45	4.35	124.19	5.99	27.50	1.93	7.09	18.48
Non-metallic mineral products	111.79	8.01	15.76	8.31	7.21	0.23	92.42	9.65	26.75	8.73	10.05	7.97
Basic metals	25.84	5.14	7.99	0.67	5.42	1.89	38.92	2.19	10.38	1.49	3.81	5.09
Metal products	97.11	1.65	33.30	8.26	19.46	5.58	61.99	2.97	25.04	2.50	6.51	16.03
Non-electric machinery	21.40	5.04	6.22	0.44	4.34	1.44	39.83	3.53	42.80	0.35	9.62	32.83
Electronics-related machinery	68.36	1.13	80.07	2.41	29.57	48.09	62.69	0.41	133.51	2.69	10.42	120.40
Motor vehicles	34.24	0.19	13.16	6.79	5.61	0.76	30.63	-	38.18	3.63	13.79	20.76
Other transportation machinery	24.40	17.14	11.37	3.76	4.61	3.00	25.20	13.08	18.90	0.38	12.17	6.35
Furniture	123.78	0.38	8.66	0.39	3.99	4.28	137.92	7.25	21.49	0.64	2.05	18.80
5 excluded industries	249.21	7.21	30.65	1.64	13.82	15.19	303.96	11.09	52.66	15.70	4.19	32.77
Tobacco	147.87	1.16	2.20	-	0.50	1.70	191.09	5.68	18.51	15.00	0.09	3.42
Leather	18.32	0.52	3.40	0.26	1.85	1.30	13.40	0.09	8.14	0.22	0.66	7.27
Printing & publishing	44.67	5.30	2.37	0.54	1.83	-	43.41	3.20	0.93	0.46	0.32	0.14
Oil & coal products	1.19	0.17	0.48	0.05	-	0.44	3.73	0.12	0.27	0.02	0.02	0.24
Miscellaneous manufacturing	37.16	0.07	22.19	0.79	9.64	11.76	52.32	2.00	24.81	-	3.11	21.70

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1c: Paid non-production workers in sample plants (thousands)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	465.29	110.01	109.77	27.64	55.55	26.59	472.11	59.61	167.41	24.81	52.20	90.41
17 sample industries	424.70	106.64	105.61	27.33	53.09	25.18	433.95	57.29	152.21	13.68	51.51	87.02
Food & beverages	76.24	52.94	14.26	3.63	6.80	3.83	102.15	22.18	20.01	2.99	6.27	10.75
Textiles	71.25	3.57	10.16	1.07	7.11	1.98	52.41	1.96	11.40	0.28	6.35	4.77
Apparel	28.69	0.29	8.79	4.24	1.76	2.80	31.37	1.08	11.35	0.42	0.92	10.01
Footwear	12.82	0.19	8.33	1.67	4.31	2.35	15.57	0.16	10.71	0.07	2.62	8.03
Wood products	52.89	0.95	4.98	1.14	2.60	1.24	34.75	0.23	4.78	0.28	1.74	2.76
Paper products	15.80	2.92	3.55	2.07	0.75	0.74	16.69	5.07	8.35	1.73	4.03	2.60
Chemicals	32.02	11.72	13.37	2.31	8.51	2.55	44.77	7.79	14.95	1.05	5.87	8.02
Rubber products	15.39	11.86	4.36	0.62	2.49	1.26	15.74	3.59	6.07	0.21	3.90	1.96
Plastic products	19.92	0.08	2.81	0.37	1.74	0.70	20.84	1.52	5.02	0.45	1.68	2.88
Non-metallic mineral products	25.52	3.58	4.49	3.17	1.30	0.03	20.31	3.17	8.68	3.78	4.16	0.74
Basic metals	6.63	2.11	2.39	0.23	1.82	0.34	9.63	0.87	2.92	0.40	1.27	1.26
Metal products	19.51	0.93	6.12	1.56	3.44	1.11	13.12	1.11	4.42	0.29	0.96	3.17
Non-electric machinery	4.88	3.21	2.72	0.38	1.87	0.47	9.09	1.14	8.85	0.05	2.42	6.37
Electronics-related machinery	14.98	2.16	11.43	0.82	5.63	4.98	14.00	2.85	19.02	0.70	2.45	15.87
Motor vehicles	8.41	0.09	4.42	2.86	1.48	0.09	7.64	-	8.16	0.65	3.79	3.72
Other transportation machinery	4.84	9.97	2.30	1.16	0.97	0.17	5.28	4.07	4.58	0.20	2.85	1.53
Furniture	14.93	0.08	1.14	0.05	0.52	0.57	20.60	0.50	2.95	0.13	0.23	2.60
5 excluded industries	40.59	3.37	4.16	0.31	2.46	1.40	38.16	2.32	15.20	11.13	0.69	3.38
Tobacco	20.21	0.08	0.62	-	0.17	0.45	14.15	0.27	11.48	11.00	0.03	0.44
Leather	2.59	0.06	0.26	0.03	0.15	0.08	2.18	0.03	0.76	0.03	0.13	0.59
Printing & publishing	13.06	2.98	0.68	0.05	0.63	-	13.03	1.44	0.20	0.07	0.10	0.03
Oil & coal products	0.41	0.24	0.08	0.04	-	0.04	1.27	0.15	0.22	0.02	0.01	0.19
Miscellaneous manufacturing	4.32	0.01	2.53	0.19	1.50	0.84	7.54	0.43	2.54	-	0.41	2.13

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1d: Total (paid and non-paid) workers in sample plants (thousands)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	2,972.3	275.14	720.12	133.49	345.94	240.69	2,966.0	235.98	1,067.9	101.98	299.85	666.05
17 sample industries	2,681.6	264.55	685.30	131.55	329.66	224.10	2,622.8	222.44	1,000.0	75.16	294.96	629.90
Food & beverages	357.35	118.70	52.25	16.68	24.75	10.83	478.21	74.18	116.43	13.83	41.07	61.54
Textiles	499.59	18.69	79.02	8.11	46.70	24.21	427.92	11.13	91.50	3.48	46.85	41.16
Apparel	284.08	3.57	86.53	17.84	25.28	43.41	333.67	15.49	153.36	14.09	13.99	125.29
Footwear	163.55	1.86	134.60	20.18	74.30	40.12	108.37	1.22	88.45	0.31	36.22	51.93
Wood products	355.64	4.61	36.59	12.40	14.84	9.35	240.92	2.05	36.16	3.20	10.65	22.32
Paper products	68.05	5.82	16.95	6.32	6.33	4.30	80.42	21.29	22.81	6.37	8.38	8.06
Chemicals	125.38	22.63	34.71	5.95	21.67	7.10	138.94	18.00	43.03	4.36	15.61	23.07
Rubber products	69.96	27.51	18.47	1.41	10.36	6.70	77.69	18.78	39.11	0.55	26.88	11.69
Plastic products	148.09	0.33	14.65	1.41	8.20	5.05	145.23	7.52	32.52	2.38	8.77	21.37
Non-metallic mineral products	138.64	11.59	20.25	11.48	8.52	0.26	113.33	12.82	35.43	12.52	14.21	8.70
Basic metals	32.50	7.25	10.37	0.89	7.24	2.24	48.58	3.05	13.30	1.89	5.08	6.34
Metal products	117.17	2.58	39.42	9.82	22.91	6.69	75.39	4.07	29.46	2.79	7.48	19.20
Non-electric machinery	26.47	8.25	8.94	0.83	6.20	1.91	48.97	4.67	51.65	0.40	12.04	39.20
Electronics-related machinery	83.45	3.30	91.50	3.23	35.20	53.07	76.73	3.26	152.53	3.39	12.86	136.28
Motor vehicles	42.73	0.29	17.58	9.64	7.09	0.84	38.32	-	46.34	4.28	17.58	24.48
Other transportation machinery	29.40	27.10	13.66	4.92	5.58	3.17	30.53	17.17	23.48	0.58	15.03	7.88
Furniture	139.59	0.47	9.81	0.44	4.52	4.85	159.58	7.75	24.45	0.76	2.28	21.41
5 excluded industries	290.71	10.59	34.82	1.94	16.28	16.59	343.20	13.54	67.86	26.82	4.89	36.15
Tobacco	168.26	1.24	2.82	-	0.68	2.14	205.62	5.95	29.98	26.00	0.12	3.86
Leather	21.09	0.58	3.66	0.29	2.00	1.38	15.67	0.12	8.90	0.25	0.79	7.86
Printing & publishing	58.01	8.27	3.05	0.59	2.46	-	56.61	4.65	1.13	0.54	0.42	0.17
Oil & coal products	1.61	0.41	0.57	0.09	-	0.48	5.00	0.28	0.49	0.04	0.03	0.43
Miscellaneous manufacturing	41.74	0.08	24.72	0.97	11.15	12.60	60.30	2.54	27.35	-	3.52	23.83

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1e: Output in sample plants (billion rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	155,413	21,599	65,980	12,801	36,970	16,210	740,353	83,243	459,562	43,170	156,309	260,083
17 sample industries	138,097	20,352	64,023	12,668	35,801	15,554	659,138	80,401	437,607	29,231	155,518	252,858
Food & beverages	24,213	3,388	5,957	1,010	3,664	1,284	167,402	18,796	74,954	3,584	20,047	51,323
Textiles	21,823	695	5,636	684	4,007	945	68,256	1,400	32,869	550	13,715	18,604
Apparel	5,892	67	2,328	556	714	1,058	27,233	1,299	16,036	1,384	1,335	13,317
Footwear	3,349	36	3,234	409	1,801	1,024	9,697	66	10,936	22	7,279	3,635
Wood products	14,162	126	1,867	724	913	230	31,009	118	6,748	1,031	2,393	3,324
Paper products	6,003	437	2,949	876	836	1,237	40,453	9,650	21,808	3,361	12,799	5,648
Chemicals	10,951	3,187	8,679	793	6,635	1,251	76,128	21,977	49,293	1,832	17,357	30,104
Rubber products	5,839	481	2,119	93	1,585	441	41,908	2,843	19,013	840	11,001	7,171
Plastic products	5,671	8	1,039	155	606	278	25,225	1,404	8,573	421	3,216	4,936
Non-metallic mineral products	5,390	1,150	2,224	1,675	544	4	17,303	10,488	11,564	3,777	5,589	2,198
Basic metals	5,290	7,845	3,904	235	3,513	156	66,470	2,675	12,614	3,525	5,448	3,641
Metal products	5,546	189	4,277	869	2,897	511	16,948	2,420	12,765	695	4,056	8,014
Non-electric machinery	1,751	181	1,857	94	1,574	189	10,557	582	13,185	94	3,416	9,675
Electronics-related machinery	7,750	655	10,627	352	3,621	6,653	22,979	275	59,683	2,739	4,896	52,048
Motor vehicles	3,852	8	5,258	3,220	1,972	65	13,043	-	56,742	4,427	18,336	33,979
Other transportation machinery	8,427	1,891	1,736	911	727	98	11,706	5,934	28,592	796	24,435	3,361
Furniture	2,186	7	332	10	192	129	12,819	475	2,233	153	200	1,879
5 excluded industries	17,316	1,247	1,957	133	1,168	656	81,214	2,842	21,955	13,939	791	7,224
Tobacco	13,562	7	723	-	563	160	55,209	202	14,339	13,735	302	302
Leather	600	30	166	5	142	19	1,502	8	907	30	66	810
Printing & publishing	2,207	1,065	272	29	242	-	10,746	1,872	229	168	52	9
Oil & coal products	97	144	33	12	-	22	6,803	57	1,031	6	11	1,013
Miscellaneous manufacturing	850	1	763	87	220	456	6,954	703	5,450	-	360	5,090

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1f: Expenditures on raw materials and parts in sample plants (billion rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	85,248	6,580	32,329	4,919	18,633	8,777	382,874	34,524	221,540	17,166	72,671	131,703
17 sample industries	78,642	6,268	31,701	4,857	18,303	8,541	360,812	33,617	214,150	13,559	72,319	128,272
Food & beverages	15,778	1,829	3,148	528	2,076	544	108,204	11,388	39,833	1,859	6,377	31,596
Textiles	12,192	417	2,618	264	1,886	467	33,644	641	17,736	299	5,862	11,575
Apparel	3,289	47	1,112	240	369	503	12,213	468	6,887	846	329	5,712
Footwear	1,541	24	1,689	219	933	537	4,184	15	4,673	16	3,398	1,260
Wood products	7,664	81	965	434	393	138	15,922	42	4,162	734	1,434	1,995
Paper products	3,195	248	1,382	487	501	393	12,607	5,695	10,736	2,582	5,547	2,608
Chemicals	5,809	1,278	3,569	362	2,686	521	36,937	6,518	26,629	1,056	10,701	14,872
Rubber products	4,569	250	1,384	78	966	340	28,814	1,315	14,019	733	7,492	5,794
Plastic products	3,574	4	640	74	405	161	13,053	794	4,583	209	2,228	2,146
Non-metallic mineral products	1,874	255	372	215	156	2	5,445	1,397	2,385	620	995	769
Basic metals	3,524	1,321	1,211	136	988	88	46,838	1,334	6,502	793	3,471	2,238
Metal products	2,979	88	2,011	204	1,507	301	8,642	1,333	6,835	398	2,097	4,340
Non-electric machinery	904	86	1,206	49	1,064	94	5,553	246	6,550	16	1,508	5,025
Electronics-related machinery	3,538	66	6,845	221	2,308	4,316	12,146	137	34,394	1,690	1,932	30,772
Motor vehicles	2,168	6	2,390	872	1,471	47	5,686	-	10,987	1,154	4,516	5,317
Other transportation machinery	4,931	266	994	470	505	19	4,903	2,018	16,140	478	14,319	1,342
Furniture	1,113	3	163	5	89	69	6,019	276	1,100	77	112	912
5 excluded industries	6,605	311	628	61	330	237	22,062	906	7,389	3,607	352	3,431
Tobacco	4,655	3	181	-	125	56	12,605	95	3,642	3,488	100	54
Leather	350	26	88	2	79	8	790	1	463	15	25	423
Printing & publishing	1,093	259	35	13	22	-	4,264	480	124	100	21	4
Oil & coal products	42	23	10	7	-	3	1,125	12	784	4	6	774
Miscellaneous manufacturing	466	1	314	40	104	170	3,279	318	2,377	-	201	2,176

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1g: Expenditures on energy (fuels and electricity) in sample plants (billion rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	4,875	853	1,577	415	861	301	35,616	4,982	16,224	3,357	6,364	6,502
17 sample industries	4,774	837	1,556	412	849	295	34,318	4,899	16,086	3,350	6,345	6,392
Food & beverages	544	99	158	22	101	35	5,390	583	1,668	223	638	807
Textiles	1,200	55	265	38	180	47	5,872	90	1,847	56	948	843
Apparel	56	0	19	3	7	9	1,380	65	491	10	30	452
Footwear	46	1	31	6	16	9	220	1	142	0	61	81
Wood products	430	3	41	16	19	6	1,263	6	252	27	67	159
Paper products	383	54	194	42	88	64	3,109	532	1,555	322	1,073	160
Chemicals	300	161	171	12	134	26	5,192	244	1,880	130	567	1,182
Rubber products	111	12	39	2	27	10	954	161	414	10	263	141
Plastic products	211	0	26	2	13	10	1,235	60	300	17	59	224
Non-metallic mineral products	817	198	259	217	42	0	2,568	2,574	2,239	538	1,468	233
Basic metals	273	158	111	3	102	6	3,625	204	487	56	241	191
Metal products	130	1	66	17	38	11	541	52	426	18	118	290
Non-electric machinery	27	4	19	1	11	8	468	5	438	1	134	303
Electronics-related machinery	94	60	102	4	51	47	540	1	1,068	11	225	833
Motor vehicles	46	1	33	20	11	2	361	-	2,466	1,928	260	278
Other transportation machinery	53	30	16	7	6	3	1,261	316	365	2	187	176
Furniture	53	0	7	0	5	2	338	7	47	2	5	40
5 excluded industries	101	15	21	3	11	7	1,298	83	138	7	20	111
Tobacco	35	0	2	-	1	1	556	0	19	5	1	13
Leather	10	0	3	0	2	0	40	0	37	0	4	33
Printing & publishing	37	13	5	0	4	-	270	23	3	1	1	1
Oil & coal products	7	1	3	1	-	2	315	19	20	1	0	20
Miscellaneous manufacturing	12	0	8	1	3	3	117	40	58	-	14	45

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1h: Value added in sample plants (billion rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	12:33	12,681	25,865	6,427	13,609	5,829	278,480	37,018	196,659	20,404	69,774	106,481
17 sample industries	44,835	11,904	24,717	6,374	12,844	5,498	225,145	35,425	183,356	10,946	69,385	103,025
Food & beverages	5,567	1,260	1,876	362	957	557	44,920	6,236	30,335	1,275	11,937	17,123
Textiles	7,231	198	2,156	304	1,501	351	25,896	592	10,877	115	5,579	5,184
Apparel	2,187	15	1,041	285	285	471	11,531	585	6,835	465	920	5,450
Footwear	1,578	4	1,152	139	643	371	4,609	47	4,671	6	2,797	1,868
Wood products	5,131	38	687	206	421	60	12,495	56	1,974	232	785	957
Paper products	1,966	87	1,079	256	145	678	18,939	3,281	8,485	440	5,700	2,345
Chemicals	3,344	1,477	3,607	341	2,714	552	27,671	13,300	17,239	524	5,040	11,676
Rubber products	966	195	563	10	478	74	10,686	1,317	3,971	82	2,816	1,073
Plastic products	1,553	3	284	62	145	76	10,090	496	3,148	167	832	2,150
Non-metallic mineral products	1,997	443	1,284	1,033	249	2	7,935	4,630	6,225	2,153	3,001	1,071
Basic metals	1,353	6,090	2,408	85	2,282	41	14,222	801	5,081	2,577	1,545	959
Metal products	2,014	84	1,836	605	1,059	172	6,764	983	4,753	221	1,670	2,862
Non-electric machinery	734	77	537	31	437	70	3,291	316	5,391	37	1,643	3,711
Electronics-related machinery	3,608	479	2,954	97	952	1,905	9,346	112	21,940	998	2,601	18,341
Motor vehicles	1,462	1	2,542	2,160	368	15	6,137	-	40,225	1,308	12,776	26,140
Other transportation machinery	3,294	1,448	581	395	131	55	4,804	2,494	11,272	295	9,673	1,305
Furniture	849	3	129	4	77	49	5,808	178	934	52	71	811
5 excluded industries	9,671	778	1,148	52	764	331	53,335	1,593	13,303	9,458	389	3,457
Tobacco	8,298	4	479	-	415	64	39,219	105	9,764	9,405	201	159
Leather	216	2	69	3	55	10	596	6	384	11	35	338
Printing & publishing	809	651	217	15	202	-	5,222	1,166	72	41	28	4
Oil & coal products	42	120	15	1	-	13	5,041	20	212	2	5	206
Miscellaneous manufacturing	306	0	368	33	92	243	3,256	296	2,871	-	120	2,751

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 1i: Number of sample plants

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	17,745	532	1,229	165	601	463	21,211	621	1,990	121	483	1,386
17 sample industries	16,334	487	1,156	157	565	434	19,019	565	1,893	116	463	1,314
Food & beverages	3,733	225	139	24	69	46	4,927	201	245	20	75	150
Textiles	1,675	33	108	11	52	45	1,921	40	137	5	45	87
Apparel	1,831	6	107	10	35	62	2,383	33	139	7	15	117
Footwear	341	2	48	5	27	16	468	6	38	1	11	26
Wood products	1,514	22	56	9	28	19	1,364	17	74	3	18	53
Paper products	311	5	21	3	12	6	426	15	45	6	8	31
Chemicals	782	42	156	24	95	37	859	40	195	16	65	114
Rubber products	320	60	39	5	20	14	363	51	48	2	20	26
Plastic products	942	5	49	4	20	25	1,086	47	112	5	26	81
Non-metallic mineral products	1,490	33	39	10	22	7	1,172	31	64	8	27	29
Basic metals	139	5	32	4	15	13	211	4	57	6	18	33
Metal products	888	13	85	11	48	26	802	22	133	10	29	94
Non-electric machinery	275	9	43	9	25	9	314	10	132	5	36	91
Electronics-related machinery	398	4	144	11	60	73	321	5	230	7	29	194
Motor vehicles	237	2	30	9	17	4	242	-	82	9	20	53
Other transportation machinery	282	15	19	6	9	4	282	24	47	2	11	34
Furniture	1,176	6	41	2	11	28	1,878	19	115	4	10	101
5 excluded industries	1,411	45	73	8	36	29	2,192	56	97	5	20	72
Tobacco	256	5	7	1	2	5	479	5	9	1	1	7
Leather	200	6	8	3	4	3	187	2	22	1	5	16
Printing & publishing	590	32	8	2	5	-	789	31	8	2	3	3
Oil & coal products	30	1	4	2	-	2	55	6	9	1	1	7
Miscellaneous manufacturing	335	1	46	-	25	19	682	12	49	-	10	39

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 2a: Total compensation per paid, production worker in sample plants (thousand rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	2,075	4,039	4,928	5,861	5,378	4,014	11,146	18,127	18,546	21,753	19,338	17,990
17 sample industries	2,075	4,072	5,054	5,982	5,527	4,104	11,137	18,011	18,770	21,898	19,434	18,261
Food & beverages	1,742	3,864	4,429	4,477	4,896	3,701	9,515	17,852	18,394	21,135	18,415	18,018
Textiles	1,931	2,223	3,317	3,381	3,837	2,699	9,462	11,518	14,708	12,885	13,983	15,187
Apparel	1,937	1,656	2,722	2,521	3,024	2,584	9,657	11,030	14,033	13,362	12,708	14,243
Footwear	2,071	2,366	2,899	3,089	2,767	3,063	10,988	12,537	13,640	81,918	11,735	11,820
Wood products	2,002	2,279	3,360	4,191	3,856	2,237	11,325	22,858	14,198	20,435	14,863	13,620
Paper products	2,761	6,682	5,724	8,939	3,834	7,898	16,824	22,651	24,250	16,173	40,267	21,680
Chemicals	3,017	6,901	9,795	8,435	10,623	8,552	17,114	23,219	26,806	31,012	26,145	26,592
Rubber products	2,206	3,350	3,616	2,139	4,409	3,010	12,359	14,672	15,350	18,999	11,325	18,166
Plastic products	2,023	3,422	4,479	4,057	4,581	4,465	12,465	15,238	18,898	29,138	14,203	19,773
Non-metallic mineral products	1,813	4,749	6,286	12,229	4,926	2,072	9,439	19,718	19,401	32,586	18,295	16,794
Basic metals	3,461	10,073	4,912	7,613	5,672	3,204	26,754	42,884	30,640	34,475	34,172	28,017
Metal products	2,533	3,895	5,965	7,555	6,416	4,459	13,647	14,936	20,159	21,160	20,867	19,834
Non-electric machinery	2,754	4,589	5,508	6,567	5,435	4,769	14,385	42,251	18,532	12,535	19,746	18,382
Electronics-related machinery	2,770	8,430	4,799	5,395	4,005	5,361	16,606	26,891	19,409	17,466	20,493	19,317
Motor vehicles	3,121	7,134	5,825	7,266	5,416	4,320	14,607	-	18,691	12,421	18,326	19,893
Other transportation machinery	2,534	4,980	6,881	6,120	6,820	8,158	17,221	27,973	22,423	8,799	25,267	22,304
Furniture	1,947	2,036	2,412	2,081	2,795	2,285	9,256	11,912	10,027	11,471	11,842	9,790

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 2b: Total compensation per paid, non-production worker in sample plants (thousand rupiah)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	4,384	4,884	12,888	12,237	14,129	11,460	20,186	26,254	36,754	43,280	38,336	35,613
17 sample industries	4,380	4,768	13,189	12,709	14,472	11,633	20,272	26,559	37,267	43,945	38,836	36,103
Food & beverages	3,186	4,023	10,346	8,205	12,508	8,172	15,363	20,443	31,695	39,179	32,312	30,336
Textiles	5,295	6,027	12,927	7,705	16,702	9,633	16,966	16,868	34,882	69,777	34,215	33,065
Apparel	4,138	3,044	11,925	9,106	13,411	11,559	17,506	29,500	26,527	29,642	33,339	25,466
Footwear	4,333	7,266	7,869	4,811	7,869	8,826	17,493	24,983	34,189	10,035	34,345	35,093
Wood products	3,614	3,443	11,014	6,868	13,901	8,875	26,402	34,869	36,191	30,581	32,545	37,685
Paper products	5,400	6,452	8,956	11,389	7,667	10,102	30,270	38,694	38,852	35,717	47,056	37,186
Chemicals	6,820	6,620	20,318	21,934	20,352	19,181	30,645	42,771	44,691	58,360	49,379	39,975
Rubber products	4,029	4,680	10,481	2,832	12,960	9,106	20,637	31,067	39,370	25,289	40,193	39,858
Plastic products	4,305	2,869	12,202	10,575	10,328	14,115	25,232	28,603	33,456	47,216	22,567	36,203
Non-metallic mineral products	3,772	5,714	9,669	9,342	11,574	3,232	16,026	28,807	41,912	47,814	38,904	43,328
Basic metals	8,594	8,581	8,754	15,485	8,172	7,311	51,444	75,178	44,868	55,044	45,987	42,321
Metal products	5,491	3,412	17,463	15,653	21,481	10,545	24,708	27,007	41,054	42,281	43,669	40,182
Non-electric machinery	4,659	5,498	12,585	20,107	10,746	10,170	25,242	16,262	39,352	31,948	46,189	37,203
Electronics-related machinery	7,148	13,523	14,784	12,903	13,162	16,599	31,600	11,470	43,045	34,165	36,873	44,357
Motor vehicles	5,830	4,542	15,803	15,732	14,484	21,568	27,794	-	47,811	50,161	46,649	47,854
Other transportation machinery	4,176	6,107	11,207	12,149	11,520	8,382	25,874	28,708	34,228	41,505	36,918	32,849
Furniture	4,047	2,553	6,481	22,482	5,449	5,744	14,726	20,885	24,151	30,030	35,079	22,738

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 3a: Shares of paid, production workers with tertiary education in sample plants (percent)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	1.02	2.41	3.66	4.56	3.69	3.29	2.05	3.57	4.53	6.32	4.43	4.41
17 sample industries	0.95	2.31	3.74	4.11	3.87	3.43	1.67	3.26	4.61	6.48	4.55	4.46
Food & beverages	0.79	1.98	3.04	2.45	2.60	4.03	1.51	3.05	5.27	7.85	5.26	4.94
Textiles	0.64	0.84	1.83	1.58	1.96	1.74	0.95	1.24	2.23	2.79	2.46	2.08
Apparel	0.45	0.69	2.18	0.47	1.35	2.92	0.66	0.59	1.71	1.52	1.20	1.78
Footwear	0.71	1.01	1.46	0.56	2.08	0.69	1.02	1.15	2.26	0.00	1.35	2.73
Wood products	0.59	0.33	1.91	0.66	2.27	1.96	1.34	2.04	3.84	11.87	5.76	2.73
Paper products	1.30	2.92	6.72	8.00	1.56	16.39	2.75	4.17	6.22	6.52	14.56	4.02
Chemicals	2.65	4.84	9.30	8.11	10.28	7.57	5.60	8.14	10.86	8.81	10.11	11.58
Rubber products	0.98	0.92	0.89	0.11	1.70	0.01	2.05	1.38	1.24	1.20	1.72	0.88
Plastic products	0.91	1.22	3.73	2.53	2.72	4.73	1.27	1.64	2.68	5.41	1.28	2.97
Non-metallic mineral products	0.71	2.23	2.40	3.60	2.23	1.22	1.19	4.02	4.73	7.39	2.98	5.63
Basic metals	2.34	5.48	2.85	1.85	3.59	2.29	4.58	7.49	5.08	7.37	5.47	4.46
Metal products	1.32	3.35	2.48	2.70	2.60	2.18	2.49	3.05	4.43	11.44	2.23	4.37
Non-electric machinery	2.23	1.56	3.62	5.90	3.28	2.53	3.79	7.01	3.80	3.46	2.66	4.27
Electronics-related machinery	2.76	14.69	4.41	2.42	4.15	4.92	4.61	1.12	6.11	6.68	5.96	6.11
Motor vehicles	1.76	0.00	6.39	15.96	2.48	1.49	2.93	-	3.20	3.20	4.37	2.76
Other transportation machinery	1.81	9.26	3.90	5.17	4.57	0.48	3.20	11.31	3.92	6.35	1.24	4.64
Furniture	0.54	0.60	0.69	0.70	1.11	0.53	1.01	0.62	1.94	0.48	0.89	2.10

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 3b: Shares of paid, non-production workers with tertiary education in sample plants (percent)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	12.19	10.32	26.18	24.69	26.15	26.79	18.26	19.40	35.64	37.17	32.39	36.64
17 sample industries	11.85	9.61	26.19	24.66	26.34	26.57	17.74	18.45	35.99	37.73	32.94	36.91
Food & beverages	7.38	6.50	20.65	16.66	21.92	20.89	11.51	12.13	25.70	37.74	23.14	25.28
Textiles	11.00	10.46	21.18	14.11	22.24	21.75	16.59	17.10	36.62	43.30	37.92	35.56
Apparel	12.30	5.73	25.95	33.63	25.86	24.74	11.88	17.83	29.28	38.63	27.03	28.93
Footwear	13.44	15.91	21.95	24.66	25.95	14.35	20.40	32.59	37.32	29.23	47.66	33.51
Wood products	10.22	9.59	19.54	23.19	18.12	19.81	15.81	28.65	26.87	42.75	18.96	28.97
Paper products	16.49	27.87	20.73	13.54	16.23	32.59	23.89	23.84	36.66	34.17	21.38	41.15
Chemicals	17.49	15.10	31.76	30.50	30.72	35.19	29.73	26.74	40.14	28.69	39.21	42.34
Rubber products	10.04	5.20	11.88	19.83	12.60	8.11	18.05	11.54	20.20	10.56	18.46	22.46
Plastic products	13.18	14.57	25.91	20.69	24.47	28.07	21.67	18.16	39.10	28.60	34.83	41.20
Non-metallic mineral products	8.79	13.59	21.10	17.89	26.80	5.56	15.20	21.56	28.16	22.37	28.65	29.54
Basic metals	22.05	27.15	21.31	25.86	18.31	23.15	30.96	22.25	35.05	51.87	32.26	33.23
Metal products	16.43	9.33	32.23	22.70	34.69	31.70	23.35	31.34	38.06	54.47	35.01	37.01
Non-electric machinery	16.82	21.85	34.80	37.42	31.64	40.93	30.62	24.04	38.77	44.85	35.76	39.59
Electronics-related machinery	22.52	33.40	34.24	38.79	30.28	37.25	31.92	44.83	45.07	47.52	49.29	44.31
Motor vehicles	18.57	0.00	32.31	29.13	34.89	28.54	30.22	-	39.18	43.56	33.62	40.49
Other transportation machinery	14.53	19.04	27.23	16.67	34.10	27.70	23.75	26.94	42.02	39.08	23.15	48.68
Furniture	12.80	15.36	21.45	22.50	14.81	23.98	20.81	18.85	41.73	25.40	49.80	41.57

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 4a: Shares of paid, production workers with secondary education in sample plants (percent)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	23.37	33.49	54.53	52.13	55.76	53.78	37.42	48.96	66.72	67.19	65.43	67.13
17 sample industries	22.85	32.03	55.12	52.94	56.45	54.16	37.35	48.55	67.11	68.60	65.71	67.47
Food & beverages	14.44	28.14	43.30	44.13	42.90	43.46	26.06	41.86	56.78	62.53	56.15	56.33
Textiles	22.15	24.59	41.37	41.74	48.30	33.27	35.71	53.44	63.02	62.36	63.58	62.77
Apparel	17.49	39.77	42.70	34.29	47.18	41.53	29.60	46.28	46.65	62.14	49.22	45.40
Footwear	24.22	62.65	46.64	42.23	46.34	48.52	37.48	45.09	58.78	76.86	65.56	55.21
Wood products	26.60	32.86	46.50	47.71	45.52	47.36	37.01	51.00	57.56	67.04	51.99	58.92
Paper products	35.77	62.77	54.08	59.52	49.38	60.78	56.77	56.77	74.29	83.39	62.85	75.49
Chemicals	33.00	45.17	55.98	51.47	57.03	56.23	51.01	53.35	62.87	63.55	61.28	63.69
Rubber products	23.99	17.15	23.21	28.36	23.80	20.53	44.77	35.02	57.20	33.51	57.82	58.54
Plastic products	24.47	38.80	64.32	57.79	62.43	66.88	51.43	61.16	75.79	89.27	69.63	76.94
Non-metallic mineral products	12.40	36.91	52.11	66.09	57.28	15.89	27.30	50.54	64.74	75.83	65.67	60.82
Basic metals	47.65	57.07	58.79	50.87	67.19	51.53	67.69	77.69	75.59	74.87	73.55	76.83
Metal products	33.32	36.74	70.36	64.12	71.96	70.05	53.02	67.53	73.28	63.49	70.46	75.19
Non-electric machinery	48.31	64.87	79.26	71.45	81.08	81.15	69.77	72.33	74.61	62.36	73.50	75.72
Electronics-related machinery	50.11	49.64	78.53	62.01	71.81	86.55	73.46	82.85	87.16	86.07	83.36	87.77
Motor vehicles	49.03	76.51	80.49	71.10	83.69	88.03	67.39	-	82.71	75.06	84.40	83.37
Other transportation machinery	33.63	57.19	61.89	61.53	63.67	58.39	61.63	50.97	79.59	88.22	83.75	77.74
Furniture	21.25	25.80	41.84	68.57	41.81	39.95	35.55	44.17	52.61	48.80	67.88	51.25

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 4b: Shares of paid, non-production workers who completed secondary education in sample plants (percent)

	1996						2006					
	Private			MNEs by foreign share			Private			MNEs by foreign share		
Industry	plants	SOEs	MNEs	33-49	50-89	90+	plants	SOEs	MNEs	33-49	50-89	90+
Manufacturing	56.54	44.07	53.00	54.18	52.24	53.58	55.85	53.48	52.38	48.80	54.41	51.98
17 sample industries	56.41	43.12	52.72	54.27	51.59	53.67	56.17	53.84	52.13	48.84	53.93	51.78
Food & beverages	47.47	39.00	47.89	56.91	47.31	43.77	49.52	52.47	55.65	50.19	61.74	53.39
Textiles	56.68	45.39	54.46	57.76	52.67	55.81	60.62	59.18	52.14	42.32	50.58	53.53
Apparel	60.91	74.80	55.58	57.29	55.64	55.27	65.27	57.90	53.12	38.63	54.37	53.93
Footwear	65.36	76.27	61.21	59.19	59.01	65.56	60.37	57.47	50.25	47.69	46.57	51.82
Wood products	60.17	53.81	51.98	56.78	48.17	55.12	57.88	46.57	53.62	57.25	56.58	52.45
Paper products	60.31	45.83	61.00	52.31	62.39	62.80	61.31	56.20	55.02	63.55	70.69	49.42
Chemicals	58.82	44.59	47.22	44.87	48.46	45.65	54.15	56.91	46.45	47.02	49.34	44.67
Rubber products	58.63	31.42	41.94	26.33	41.64	47.63	51.42	39.08	53.98	41.20	52.79	56.03
Plastic products	60.23	34.72	53.75	50.90	53.34	54.60	61.68	58.83	51.80	64.69	49.96	51.59
Non-metallic mineral products	48.23	51.88	56.73	66.74	52.35	56.11	45.21	45.76	58.22	65.02	55.95	58.51
Basic metals	57.05	59.81	57.29	70.09	59.05	51.47	58.08	68.49	53.88	41.20	56.78	54.85
Metal products	62.79	60.83	52.62	54.13	52.75	51.71	60.87	57.25	53.20	35.11	53.65	55.17
Non-electric machinery	66.39	46.06	55.05	50.36	57.44	53.11	58.86	64.34	53.55	42.65	54.16	53.82
Electronics-related machinery	58.97	47.87	52.20	50.92	48.29	56.06	56.62	50.97	49.33	45.04	40.94	50.81
Motor vehicles	63.28	78.74	56.01	55.09	52.86	71.47	59.88	-	54.93	49.21	60.61	53.80
Other transportation machinery	60.74	57.95	52.80	61.95	47.68	49.82	63.36	62.04	53.44	56.29	71.70	46.99
Furniture	60.71	63.73	62.42	57.50	69.87	59.84	55.56	57.25	47.94	59.40	41.53	48.14

Notes and Sources: - = no plants in the category; samples exclude plants will less than 20 employees, output per worker less than exceeding 2.5 or 12.5 million rupiah in 1996 and 2006, respectively, and value added per worker less than 1.0 or 5.0 million rupiah, respectively; see Appendix Table 7 for detailed industry definitions, which differ in important respects between 1996 and 2006; authors' compilations from BPS-Statistics (various years).

Appendix Table 5: OLS Estimates of SOE-Private and MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; 17 sample industries combined

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0567	0.00	0.0481	0.00	0.0969	0.00	0.0807	0.00
LME	0.0348	0.00	0.0294	0.00	0.0265	0.00	0.0371	0.00
LO	0.0841	0.00	0.0764	0.00	0.1410	0.00	0.1073	0.00
S5	0.0101	0.00	0.0068	0.00	0.0079	0.00	0.0085	0.00
S4	0.0015	0.00	0.0035	0.00	0.0035	0.00	0.0062	0.00
S3	0.0005	0.00	0.0027	0.00	0.0020	0.00	0.0053	0.00
S1	-0.0006	0.00	0.0009	0.01	-0.0006	0.30	-0.0004	0.62
SF	-0.0028	0.00	-0.0023	0.00	-0.0019	0.00	-0.0017	0.00
DS	0.1916	0.00	0.1653	0.00	0.0625	0.09	0.1255	0.00
DF	0.2586	0.00	0.0348	0.04	0.3364	0.00	0.1464	0.00
Obs./R^2	17,376	0.44	20,451	0.41	14,264	0.42	16,600	0.34
No. *DI* s	91	-	102	-	91	-	102	-
Equation (2)								
LEE	0.0567	0.00	0.0481	0.00	0.0969	0.00	0.0779	0.00
LME	0.0348	0.00	0.0295	0.00	0.0265	0.00	0.0371	0.00
LO	0.0838	0.00	0.0764	0.00	0.1409	0.00	0.1090	0.00
S5	0.0101	0.00	0.0068	0.00	0.0079	0.00	0.0089	0.00
S4	0.0015	0.00	0.0035	0.00	0.0035	0.00	0.0064	0.00
S3	0.0005	0.00	0.0027	0.00	0.0020	0.00	0.0053	0.00
S1	-0.0006	0.01	0.0009	0.01	-0.0006	0.30	-0.0006	0.49
SF	-0.0028	0.00	-0.0023	0.00	-0.0019	0.00	-0.0016	0.00
DS	0.1923	0.00	0.1651	0.00	0.0629	0.09	0.1032	0.02
DF1	0.3231	0.00	0.0865	0.19	0.3215	0.00	0.2363	0.00
DF5	0.2741	0.00	-0.0067	0.84	0.3633	0.00	0.1739	0.00
DF9	0.2142	0.00	0.0460	0.02	0.3053	0.00	0.1292	0.00
TestDFs	2.44	0.09	1.34	0.26	0.54	0.58	1.28	0.28
Obs./R^2	17,376	0.42	20,451	0.40	14,264	0.42	16,600	0.33
No. *DI* s	91	-	102	-	91	-	102	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; the No. *DI* s rows give the number of industry dummies included; all estimates include 5 regional dummies; see the text for definitions of industry and region dummies; full results including the constant and all dummies are available from the authors.

Appendix Table 6a: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; food & beverages

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0675	0.00	0.0657	0.00	0.1004	0.00	0.1089	0.00
LME	0.0232	0.03	0.0738	0.00	0.0185	0.08	0.0183	0.05
LO	0.1051	0.00	0.0773	0.00	0.1516	0.00	0.1199	0.00
S5	0.0090	0.01	0.0025	0.21	0.0080	0.00	0.0077	0.00
S4	0.0011	0.02	0.0033	0.00	0.0040	0.00	0.0048	0.00
S3	0.0004	0.29	0.0023	0.00	0.0027	0.00	0.0037	0.00
S1	-0.0009	0.02	0.0013	0.01	-0.0009	0.29	-0.0004	0.74
SF	-0.0030	0.00	-0.0027	0.00	-0.0026	0.00	-0.0021	0.00
DS	0.1743	0.00	0.2065	0.00	0.0477	0.42	0.0635	0.43
DF	0.2812	0.00	0.0255	0.58	0.2694	0.00	0.1232	0.12
Obs./R^2	4,021	0.42	5,271	0.41	3,328	0.40	4,134	0.30
No. *DI* s	20	-	15	-	20	-	15	-
Equation (2)								
LEE	0.0677	0.00	0.0656	0.00	0.1010	0.00	0.1084	0.00
LME	0.0237	0.02	0.0742	0.00	0.0189	0.08	0.0190	0.05
LO	0.1042	0.00	0.0770	0.00	0.1504	0.00	0.1195	0.00
S5	0.0091	0.01	0.0024	0.23	0.0081	0.00	0.0077	0.00
S4	0.0011	0.02	0.0033	0.00	0.0040	0.00	0.0048	0.00
S3	0.0004	0.32	0.0023	0.00	0.0027	0.00	0.0037	0.00
S1	-0.0009	0.02	0.0013	0.01	-0.0009	0.28	-0.0004	0.74
SF	-0.0030	0.00	-0.0027	0.00	-0.0026	0.00	-0.0021	0.00
DS	0.1748	0.00	0.2068	0.00	0.0489	0.41	0.0640	0.43
DF1	0.4199	0.00	0.2159	0.17	0.4726	0.00	0.3330	0.07
DF5	0.3060	0.00	0.0224	0.78	0.3257	0.00	0.1732	0.11
DF9	0.1719	0.04	0.0022	0.97	0.0683	0.65	0.0693	0.53
TestDFs	1.49	0.23	0.83	0.44	2.46	0.09	0.80	0.45
Obs./R^2	4,021	0.42	5,271	0.41	3,328	0.40	4,134	0.30
No. *DI* s	20	-	15	-	20	-	15	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6b: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; textiles

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0481	0.00	0.0458	0.00	0.1656	0.00	0.1472	0.00
LME	0.0167	0.20	0.0357	0.01	0.0421	0.04	0.0610	0.00
LO	0.0608	0.00	0.0433	0.00	0.0846	0.00	0.0699	0.00
S5	0.0062	0.03	0.0014	0.60	0.0058	0.00	0.0079	0.00
S4	0.0004	0.50	0.0032	0.00	-0.0001	0.91	0.0051	0.00
S3	0.0005	0.26	0.0019	0.00	-0.0011	0.37	0.0039	0.00
S1	-0.0006	0.48	0.0016	0.24	-0.0035	0.12	-0.0002	0.95
SF	-0.0017	0.00	-0.0020	0.00	-0.0019	0.03	-0.0009	0.18
DS	0.0094	0.92	0.0430	0.45	0.2351	0.13	0.1716	0.06
DF	0.1648	0.00	0.1432	0.00	0.3488	0.00	0.2826	0.00
Obs./R^2	1,695	0.44	1,905	0.43	1,395	0.41	1,463	0.37
No. *DI* s	6	-	7	-	6	-	7	-
Equation (2)								
LEE	0.0477	0.00	0.0463	0.00	0.1646	0.00	0.1469	0.00
LME	0.0167	0.20	0.0354	0.01	0.0431	0.03	0.0607	0.00
LO	0.0607	0.00	0.0439	0.00	0.0838	0.00	0.0702	0.00
S5	0.0063	0.03	0.0013	0.61	0.0058	0.00	0.0079	0.00
S4	0.0003	0.51	0.0032	0.00	-0.0001	0.93	0.0051	0.00
S3	0.0006	0.24	0.0019	0.00	-0.0011	0.37	0.0039	0.00
S1	-0.0006	0.47	0.0016	0.24	-0.0034	0.12	-0.0002	0.95
SF	-0.0017	0.00	-0.0020	0.00	-0.0018	0.03	-0.0009	0.18
DS	0.0098	0.92	0.0426	0.45	0.2370	0.13	0.1718	0.06
DF1	0.1692	0.21	0.0367	0.79	0.3333	0.02	0.5338	0.04
DF5	0.2079	0.00	0.0715	0.47	0.4611	0.00	0.2549	0.09
DF9	0.1134	0.14	0.1868	0.00	0.2106	0.16	0.2798	0.00
TestDFs	0.43	0.65	1.00	0.37	1.00	0.37	0.50	0.60
Obs./R^2	1,695	0.44	1,905	0.43	1,395	0.41	1,463	0.37
No. *DI* s	6	-	7	-	6	-	7	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6c: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; apparel

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0503	0.00	0.0691	0.00	0.1312	0.00	0.0928	0.00
LME	-0.0037	0.69	0.0145	0.11	-0.0173	0.28	0.0570	0.00
LO	0.0890	0.00	0.0544	0.00	0.1863	0.00	0.1344	0.00
S5	0.0032	0.53	0.0130	0.00	0.0054	0.00	0.0065	0.00
S4	0.0011	0.04	0.0033	0.00	0.0024	0.02	0.0061	0.00
S3	0.0016	0.00	0.0031	0.00	0.0006	0.62	0.0030	0.01
S1	0.0001	0.90	0.0033	0.00	0.0001	0.95	-0.0015	0.68
SF	-0.0017	0.00	-0.0016	0.00	-0.0011	0.06	-0.0026	0.00
DS	-0.1996	0.43	-0.0075	0.90	-0.1858	0.52	0.2702	0.02
DF	0.0511	0.35	0.1725	0.00	0.1839	0.04	0.0135	0.87
Obs./R^2	1,800	0.28	2,326	0.28	1,251	0.40	1,611	0.36
No. *DI* s	2	-	1	-	2	-	1	-
Equation (2)								
LEE	0.0506	0.00	0.0691	0.00	0.1317	0.00	0.0924	0.00
LME	-0.0039	0.67	0.0145	0.11	-0.0182	0.25	0.0571	0.00
LO	0.0892	0.00	0.0543	0.00	0.1869	0.00	0.1344	0.00
S5	0.0033	0.51	0.0129	0.00	0.0054	0.00	0.0065	0.00
S4	0.0010	0.04	0.0033	0.00	0.0025	0.02	0.0061	0.00
S3	0.0017	0.00	0.0031	0.00	0.0006	0.61	0.0030	0.01
S1	0.0001	0.90	0.0033	0.00	0.0001	0.95	-0.0014	0.69
SF	-0.0017	0.00	-0.0016	0.00	-0.0011	0.06	-0.0027	0.00
DS	-0.1988	0.43	-0.0077	0.90	-0.1845	0.52	0.2705	0.02
DF1	-0.0421	0.81	0.1657	0.00	-0.0751	0.76	0.0550	0.84
DF5	0.0884	0.27	0.0537	0.42	0.3057	0.04	0.1653	0.47
DF9	0.0456	0.54	0.1863	0.00	0.1575	0.18	-0.0071	0.94
TestDFs	0.27	0.76	1.51	0.22	0.97	0.38	0.27	0.76
Obs./R^2	1,800	0.28	2,326	0.34	1,251	0.40	1,611	0.36
No. *DI* s	2	-	1	-	2	-	1	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6d: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; footwear

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	-0.0385	0.36	0.0238	0.23	0.0571	0.07	0.1012	0.00
LME	0.0748	0.05	0.0564	0.03	0.0235	0.55	0.0448	0.20
LO	0.0523	0.18	0.0668	0.00	0.1111	0.00	0.1005	0.00
S5	-0.0006	0.96	0.0029	0.31	0.0045	0.11	0.0084	0.00
S4	0.0023	0.15	0.0040	0.00	0.0025	0.26	0.0070	0.00
S3	0.0034	0.01	0.0043	0.00	-0.0009	0.73	0.0048	0.12
S1	-0.0014	0.55	0.0006	0.85	0.0010	0.73	0.0018	0.56
SF	-0.0030	0.01	-0.0005	0.60	-0.0028	0.02	-0.0002	0.89
DS	-0.1009	0.77	0.2009	0.04	0.1265	0.77	0.4091	0.06
DF	0.1093	0.33	-0.0698	0.45	0.1400	0.36	0.2013	0.17
Obs./R^2	376	0.21	492	0.23	340	0.30	390	0.32
No. *DI* s	1	-	0	-	1	-	0	-
Equation (2); 2006 samples exclude 1 minority-foreign MNE								
LEE	-0.0390	0.36	0.0248	0.19	0.0564	0.07	0.1001	0.00
LME	0.0752	0.05	0.0533	0.04	0.0229	0.55	0.0452	0.20
LO	0.0518	0.19	0.0724	0.00	0.1135	0.00	0.1003	0.00
S5	-0.0004	0.97	0.0034	0.23	0.0046	0.11	0.0084	0.00
S4	0.0023	0.15	0.0040	0.00	0.0024	0.28	0.0070	0.00
S3	0.0034	0.02	0.0044	0.00	-0.0010	0.68	0.0049	0.11
S1	-0.0014	0.55	0.0006	0.84	0.0010	0.72	0.0018	0.57
SF	-0.0030	0.01	-0.0007	0.42	-0.0029	0.02	-0.0002	0.90
DS	-0.1016	0.77	0.2032	0.04	0.1280	0.77	0.4077	0.06
DF1	0.2310	0.29	-	-	-0.3063	0.41	-	-
DF5	0.0840	0.58	-0.2471	0.01	0.1046	0.63	0.2163	0.22
DF9	0.1136	0.40	-0.0934	0.15	0.3147	0.13	0.2163	0.26
TestDFs	0.20	0.82	3.25	0.04	1.15	0.32	1.30	0.27
Obs./R^2	376	0.21	491	0.24	340	0.31	389	0.32
No. *DI* s	1	-	0	-	1	-	0	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6e: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; wood products

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.1565	0.00	-0.0118	0.51	0.1158	0.00	0.0455	0.06
LME	0.0250	0.12	-0.0822	0.00	0.0082	0.68	-0.0695	0.00
LO	0.0888	0.00	0.1319	0.00	0.1241	0.00	0.1367	0.00
S5	0.0020	0.73	0.0062	0.05	0.0097	0.00	0.0124	0.00
S4	0.0017	0.02	0.0043	0.00	0.0063	0.00	0.0121	0.00
S3	0.0007	0.42	0.0038	0.00	0.0035	0.01	0.0129	0.00
S1	0.0010	0.34	0.0019	0.21	0.0040	0.04	0.0043	0.09
SF	-0.0030	0.00	-0.0036	0.00	-0.0021	0.01	-0.0005	0.66
DS	-0.0976	0.57	0.4358	0.00	0.1071	0.35	0.4885	0.00
DF	0.1244	0.08	-0.0304	0.72	0.4247	0.00	0.2493	0.03
Obs./R^2	1,509	0.31	1,357	0.28	1,386	0.30	1,132	0.19
No. *DI* s	5	-	4	-	5	-	4	-
Equation (2)								
LEE	0.1565	0.00	-0.0118	0.51	0.1164	0.00	0.0457	0.06
LME	0.0256	0.12	-0.0827	0.00	0.0096	0.63	-0.0706	0.00
LO	0.0876	0.00	0.1315	0.00	0.1250	0.00	0.1373	0.00
S5	0.0023	0.68	0.0061	0.05	0.0099	0.00	0.0123	0.00
S4	0.0017	0.01	0.0044	0.00	0.0064	0.00	0.0121	0.00
S3	0.0007	0.42	0.0038	0.00	0.0036	0.01	0.0129	0.00
S1	0.0010	0.34	0.0019	0.21	0.0042	0.03	0.0044	0.09
SF	-0.0030	0.00	-0.0035	0.00	-0.0021	0.01	-0.0005	0.68
DS	-0.0985	0.56	0.4350	0.00	0.1090	0.34	0.4887	0.00
DF1	0.3333	0.02	0.2243	0.50	-0.1225	0.54	0.2171	0.37
DF5	0.2058	0.06	-0.0655	0.71	0.5555	0.00	0.0572	0.83
DF9	-0.1061	0.15	-0.0322	0.73	0.4934	0.01	0.3141	0.01
TestDFs	5.67	0.00	0.32	0.73	3.74	0.02	0.42	0.66
Obs./R^2	1,509	0.32	1,357	0.28	1,386	0.30	1,132	0.19
No. *DI* s	5	-	4	-	5	-	4	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6f: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; paper products

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0632	0.05	0.0849	0.00	0.0091	0.80	0.0756	0.00
LME	0.0771	0.01	0.1258	0.00	0.0638	0.07	0.1877	0.00
LO	0.0490	0.08	0.0457	0.06	0.1427	0.00	0.0564	0.08
S5	0.0253	0.01	0.0123	0.02	0.0052	0.02	0.0090	0.02
S4	-0.0001	0.97	0.0057	0.00	-0.0017	0.27	0.0089	0.00
S3	-0.0032	0.06	0.0054	0.00	-0.0010	0.62	0.0111	0.01
S1	-0.0016	0.44	0.0064	0.03	-0.0051	0.41	0.0076	0.20
SF	-0.0015	0.16	-0.0024	0.11	0.0031	0.01	-0.0027	0.17
DS	0.4127	0.07	0.2124	0.21	0.0044	0.99	0.3486	0.04
DF	0.0582	0.68	-0.1286	0.36	0.1711	0.30	0.1147	0.43
Obs./R^2	329	0.50	465	0.45	312	0.42	423	0.36
No. *DI* s	2	-	2	-	2	-	2	-
Equation (2)								
LEE	0.0654	0.05	0.0835	0.00	0.0104	0.78	0.0768	0.00
LME	0.0787	0.01	0.1228	0.00	0.0645	0.07	0.1873	0.00
LO	0.0433	0.12	0.0492	0.04	0.1397	0.00	0.0591	0.07
S5	0.0271	0.02	0.0121	0.02	0.0052	0.02	0.0090	0.02
S4	0.0000	1.00	0.0058	0.00	-0.0017	0.27	0.0091	0.00
S3	-0.0031	0.06	0.0053	0.00	-0.0010	0.61	0.0111	0.01
S1	-0.0017	0.41	0.0060	0.04	-0.0057	0.36	0.0083	0.18
SF	-0.0014	0.21	-0.0021	0.14	0.0032	0.01	-0.0028	0.16
DS	0.4152	0.07	0.2123	0.21	0.0091	0.98	0.3451	0.05
DF1	0.5344	0.00	-0.6809	0.16	0.4692	0.17	0.1359	0.58
DF5	0.0048	0.97	-0.0541	0.79	0.0797	0.68	-0.1048	0.72
DF9	-0.1301	0.68	-0.0483	0.76	0.2181	0.48	0.1728	0.39
TestDFs	5.92	0.00	0.82	0.44	0.53	0.59	0.29	0.75
Obs./R^2	329	0.51	465	0.45	312	0.42	423	0.36
No. *DI* s	2	-	2	-	2	-	2	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6g: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; chemicals

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0762	0.00	0.0471	0.00	0.0478	0.04	0.0292	0.07
LME	0.0511	0.01	0.0235	0.16	0.0541	0.02	0.0458	0.05
LO	0.1188	0.00	0.0776	0.00	0.1786	0.00	0.1399	0.00
S5	0.0153	0.00	0.0103	0.00	0.0103	0.00	0.0120	0.00
S4	0.0011	0.11	0.0048	0.00	0.0035	0.01	0.0094	0.00
S3	0.0005	0.58	0.0030	0.03	-0.0001	0.95	0.0102	0.00
S1	0.0000	0.97	-0.0113	0.00	0.0008	0.83	-0.0100	0.33
SF	-0.0014	0.12	-0.0018	0.05	-0.0003	0.80	-0.0005	0.70
DS	0.3127	0.00	0.1126	0.33	-0.0074	0.95	-0.0936	0.53
DF	0.4210	0.00	-0.0101	0.87	0.4491	0.00	0.0389	0.57
Obs./R^2	952	0.59	1,046	0.36	909	0.47	990	0.34
No. *DI* s	7	-	8	-	7	-	8	-
Equation (2)								
LEE	0.0756	0.00	0.0462	0.00	0.0479	0.04	0.0282	0.08
LME	0.0506	0.02	0.0253	0.13	0.0541	0.02	0.0474	0.04
LO	0.1191	0.00	0.0762	0.00	0.1788	0.00	0.1374	0.00
S5	0.0153	0.00	0.0104	0.00	0.0103	0.00	0.0124	0.00
S4	0.0011	0.11	0.0048	0.00	0.0036	0.01	0.0096	0.00
S3	0.0005	0.57	0.0030	0.03	-0.0001	0.95	0.0103	0.00
S1	0.0000	0.99	-0.0112	0.00	0.0007	0.83	-0.0097	0.35
SF	-0.0014	0.11	-0.0019	0.05	-0.0003	0.80	-0.0005	0.71
DS	0.3121	0.00	0.1142	0.32	-0.0051	0.97	-0.0863	0.56
DF1	0.3468	0.03	0.3003	0.11	0.6330	0.00	0.4312	0.02
DF5	0.4426	0.00	0.0099	0.92	0.4137	0.00	0.1134	0.25
DF9	0.4178	0.00	-0.0661	0.44	0.4183	0.01	-0.0642	0.46
TestDFs	0.17	0.84	1.56	0.21	0.56	0.57	3.34	0.04
Obs./R^2	952	0.59	1,046	0.36	909	0.47	990	0.34
No. *DI* s	7	-	8	-	7	-	8	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6h: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, rubber products

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0294	0.34	0.0539	0.02	0.1152	0.00	0.1204	0.00
LME	0.0821	0.02	0.0376	0.10	0.0270	0.43	0.0856	0.02
LO	0.0670	0.01	0.0290	0.16	0.0982	0.00	0.0248	0.45
S5	0.0036	0.19	-0.0002	0.95	0.0055	0.04	0.0075	0.01
S4	0.0015	0.21	0.0014	0.23	0.0036	0.04	0.0007	0.81
S3	0.0013	0.27	0.0022	0.06	0.0022	0.24	0.0006	0.84
S1	0.0005	0.78	0.0020	0.39	-0.0031	0.29	-0.0044	0.56
SF	-0.0045	0.00	-0.0001	0.95	-0.0014	0.35	-0.0030	0.06
DS	0.3588	0.00	0.1203	0.23	0.2399	0.06	0.4556	0.01
DF	0.2314	0.01	0.0170	0.88	0.5269	0.00	0.4073	0.00
Obs./R^2	417	0.36	452	0.18	396	0.37	417	0.29
No. *DI* s	2	-	2	-	2	-	2	-
Equation (2)								
LEE	0.0292	0.35	0.0516	0.02	0.1116	0.00	0.1203	0.00
LME	0.0827	0.02	0.0320	0.16	0.0270	0.43	0.0857	0.02
LO	0.0658	0.01	0.0433	0.03	0.0959	0.00	0.0260	0.44
S5	0.0034	0.21	-0.0001	0.98	0.0054	0.04	0.0075	0.02
S4	0.0015	0.21	0.0014	0.24	0.0033	0.06	0.0007	0.82
S3	0.0012	0.31	0.0025	0.03	0.0018	0.32	0.0006	0.85
S1	0.0003	0.86	0.0021	0.34	-0.0040	0.19	-0.0045	0.56
SF	-0.0047	0.00	-0.0001	0.94	-0.0015	0.31	-0.0030	0.06
DS	0.3598	0.00	0.1164	0.24	0.2356	0.07	0.4545	0.01
DF1	-0.1099	0.51	0.0869	0.79	-0.0716	0.67	0.2063	0.53
DF5	0.2741	0.03	-0.3747	0.06	0.6802	0.00	0.3840	0.03
DF9	0.2994	0.00	0.2856	0.00	0.5024	0.00	0.4408	0.00
TestDFs	2.55	0.08	5.28	0.01	6.40	0.00	0.24	0.79
Obs./R^2	417	0.36	452	0.21	396	0.37	417	0.29
No. *DI* s	2	-	2	-	2	-	2	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6i: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, plastics

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0350	0.01	-0.0025	0.87	0.0894	0.00	0.0164	0.36
LME	0.0018	0.93	-0.0039	0.80	-0.0040	0.86	0.0520	0.03
LO	0.0638	0.00	0.0686	0.00	0.1262	0.00	0.1192	0.00
S5	0.0077	0.04	0.0085	0.00	0.0060	0.00	0.0093	0.00
S4	0.0025	0.00	0.0061	0.00	0.0024	0.02	0.0096	0.00
S3	0.0006	0.28	0.0064	0.00	0.0019	0.12	0.0087	0.00
S1	0.0008	0.26	0.0053	0.01	-0.0007	0.72	-0.0019	0.64
SF	-0.0030	0.00	-0.0019	0.00	-0.0017	0.03	-0.0023	0.01
DS	0.3539	0.06	0.1253	0.03	-0.1511	0.55	0.0914	0.31
DF	0.4215	0.00	0.1829	0.01	0.6451	0.00	0.0775	0.39
Obs./R^2	989	0.39	1,196	0.22	926	0.37	1,099	0.21
No. *DI* s	0	-	0	-	0	-	0	-
Equation (2)								
LEE	0.0350	0.01	-0.0020	0.89	0.0887	0.00	0.0162	0.36
LME	0.0015	0.94	-0.0032	0.84	-0.0044	0.84	0.0523	0.03
LO	0.0638	0.00	0.0678	0.00	0.1276	0.00	0.1189	0.00
S5	0.0078	0.04	0.0080	0.01	0.0059	0.00	0.0088	0.00
S4	0.0025	0.00	0.0061	0.00	0.0024	0.02	0.0091	0.00
S3	0.0006	0.29	0.0065	0.00	0.0018	0.14	0.0083	0.00
S1	0.0008	0.23	0.0053	0.01	-0.0011	0.60	-0.0025	0.54
SF	-0.0030	0.00	-0.0020	0.00	-0.0018	0.02	-0.0023	0.01
DS	0.3539	0.06	0.1256	0.03	-0.1536	0.54	0.0918	0.31
DF1	0.2742	0.17	0.6122	0.02	0.7861	0.00	0.3082	0.43
DF5	0.4622	0.00	0.0159	0.86	0.4609	0.00	-0.2344	0.09
DF9	0.4125	0.00	0.2238	0.02	0.7848	0.00	0.1897	0.09
TestDFs	0.42	0.66	3.05	0.05	1.28	0.28	3.28	0.04
Obs./R^2	989	0.39	1,196	0.22	926	0.37	1,099	0.21
No. *DI* s	0	-	0	-	0	-	0	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6j: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, non-metallic mineral products

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0224	0.05	0.0105	0.40	0.0927	0.00	0.0414	0.02
LME	0.0579	0.00	-0.0080	0.59	0.0487	0.02	0.0413	0.05
LO	0.0945	0.00	0.1434	0.00	0.1604	0.00	0.1390	0.00
S5	0.0046	0.38	0.0023	0.61	0.0059	0.00	0.0089	0.00
S4	0.0026	0.00	0.0046	0.00	0.0034	0.00	0.0049	0.00
S3	0.0001	0.87	0.0012	0.02	0.0025	0.00	0.0054	0.00
S1	-0.0011	0.05	0.0005	0.64	-0.0024	0.12	0.0014	0.55
SF	-0.0037	0.00	-0.0030	0.00	0.0002	0.85	-0.0028	0.00
DS	0.1273	0.25	0.1402	0.12	-0.0742	0.57	0.1537	0.28
DF	0.3111	0.00	-0.0452	0.70	0.1537	0.25	0.4390	0.00
Obs./R^2	1,552	0.49	1,246	0.41	1,113	0.42	989	0.35
No. *DI* s	11	-	9	-	11	-	9	-
Equation (2)								
LEE	0.0223	0.05	0.0107	0.39	0.0921	0.00	0.0407	0.02
LME	0.0603	0.00	-0.0074	0.62	0.0443	0.03	0.0399	0.06
LO	0.0914	0.00	0.1422	0.00	0.1633	0.00	0.1415	0.00
S5	0.0049	0.36	0.0020	0.67	0.0058	0.00	0.0088	0.00
S4	0.0026	0.00	0.0046	0.00	0.0035	0.00	0.0049	0.00
S3	0.0001	0.85	0.0012	0.02	0.0026	0.00	0.0054	0.00
S1	-0.0011	0.05	0.0005	0.64	-0.0025	0.12	0.0014	0.55
SF	-0.0036	0.00	-0.0030	0.00	0.0000	0.98	-0.0028	0.00
DS	0.1384	0.21	0.1405	0.12	-0.0879	0.50	0.1512	0.29
DF1	0.6440	0.00	0.1552	0.46	-0.3195	0.14	0.1776	0.52
DF5	0.2254	0.04	-0.1212	0.60	0.3834	0.03	0.4697	0.00
DF9	0.1649	0.23	-0.0281	0.83	0.0525	0.81	0.4814	0.00
TestDFs	3.08	0.05	0.47	0.62	3.56	0.03	0.56	0.57
Obs./R^2	1,552	0.49	1,246	0.42	1,113	0.42	989	0.35
No. *DI* s	11	-	9	-	11	-	9	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6k: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, basic metals

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0745	0.07	0.1126	0.00	0.0258	0.58	0.0843	0.05
LME	0.0002	1.00	0.0417	0.25	0.1102	0.08	-0.0009	0.99
LO	0.1452	0.00	0.0743	0.02	0.1099	0.03	0.0848	0.03
S5	0.0095	0.39	0.0254	0.03	-0.0046	0.33	0.0089	0.04
S4	-0.0030	0.19	0.0051	0.08	-0.0079	0.04	0.0027	0.50
S3	-0.0022	0.37	0.0081	0.02	-0.0130	0.00	0.0143	0.00
S1	-0.0023	0.73	0.0015	0.87	-0.0021	0.77	-	-
SF	-0.0040	0.12	0.0005	0.84	-0.0038	0.19	-0.0016	0.55
DS	0.6742	0.00	-0.2510	0.55	0.0844	0.60	-0.2721	0.57
DF	0.0302	0.84	0.1632	0.08	-0.0629	0.73	-0.0384	0.75
Obs./R^2	174	0.47	257	0.50	169	0.30	237	0.32
No. *DI* s	1	-	3	-	1	-	3	-
Equation (2)								
LEE	0.0701	0.10	0.1127	0.00	0.0309	0.52	0.0875	0.05
LME	-0.0012	0.98	0.0396	0.29	0.1054	0.09	-0.0042	0.95
LO	0.1484	0.00	0.0764	0.02	0.1214	0.02	0.0864	0.03
S5	0.0094	0.39	0.0256	0.04	-0.0056	0.25	0.0091	0.04
S4	-0.0032	0.18	0.0051	0.08	-0.0085	0.04	0.0027	0.51
S3	-0.0022	0.38	0.0081	0.02	-0.0135	0.00	0.0143	0.00
S1	-0.0023	0.72	0.0015	0.88	-0.0026	0.72	-	-
SF	-0.0042	0.13	0.0005	0.86	-0.0035	0.24	-0.0016	0.54
DS	0.6760	0.00	-0.2613	0.54	0.0587	0.73	-0.2811	0.56
DF1	-0.2601	0.64	0.0732	0.78	0.3815	0.54	-0.1975	0.59
DF5	0.0785	0.72	0.1547	0.32	-0.3244	0.20	0.0150	0.94
DF9	0.0497	0.77	0.1874	0.11	0.0962	0.69	-0.0352	0.81
TestDFs	0.17	0.85	0.08	0.92	1.16	0.32	0.14	0.87
Obs./R^2	174	0.47	257	0.50	169	0.31	237	0.32
No. *DI* s	1	-	3	-	1	-	3	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6l: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, metal products

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0898	0.00	0.0692	0.00	0.1100	0.00	0.0446	0.02
LME	0.0245	0.14	0.0186	0.16	0.0030	0.90	0.0174	0.35
LO	0.0784	0.00	0.0761	0.00	0.1610	0.00	0.1425	0.00
S5	0.0101	0.02	0.0105	0.00	0.0065	0.00	0.0071	0.00
S4	0.0015	0.01	0.0039	0.00	0.0027	0.02	0.0040	0.01
S3	-0.0012	0.10	0.0030	0.00	0.0000	1.00	0.0031	0.20
S1	-0.0016	0.13	0.0012	0.57	0.0021	0.62	-0.0066	0.33
SF	-0.0024	0.00	-0.0004	0.49	-0.0023	0.00	0.0001	0.94
DS	0.1749	0.01	-0.2192	0.21	0.0422	0.74	-0.4008	0.11
DF	0.3221	0.00	0.0850	0.10	0.3962	0.00	0.0981	0.23
Obs./R^2	970	0.46	918	0.39	841	0.42	791	0.28
No. *DI* s	3	-	5	-	3	-	5	-
Equation (2)								
LEE	0.0896	0.00	0.0685	0.00	0.1086	0.00	0.0441	0.02
LME	0.0266	0.11	0.0189	0.16	0.0021	0.93	0.0179	0.34
LO	0.0749	0.00	0.0761	0.00	0.1602	0.00	0.1425	0.00
S5	0.0103	0.02	0.0109	0.00	0.0064	0.00	0.0072	0.00
S4	0.0016	0.01	0.0039	0.00	0.0027	0.02	0.0040	0.01
S3	-0.0012	0.11	0.0030	0.00	0.0000	0.98	0.0031	0.20
S1	-0.0016	0.13	0.0012	0.57	0.0023	0.59	-0.0065	0.33
SF	-0.0023	0.00	-0.0004	0.52	-0.0023	0.00	0.0001	0.93
DS	0.1792	0.01	-0.2186	0.22	0.0370	0.77	-0.4005	0.11
DF1	0.4757	0.00	-0.0150	0.93	0.2898	0.29	0.0057	0.98
DF5	0.3619	0.00	0.1461	0.09	0.5029	0.00	0.1990	0.20
DF9	0.1996	0.05	0.0754	0.19	0.2450	0.16	0.0769	0.41
TestDFs	1.64	0.20	0.49	0.61	0.85	0.43	0.33	0.72
Obs./R^2	970	0.46	918	0.39	841	0.42	791	0.28
No. *DI* s	3	-	5	-	3	-	5	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6m: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, non-electric machinery

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0459	0.09	0.0226	0.21	0.0599	0.15	0.0278	0.26
LME	0.0248	0.32	0.0174	0.48	-0.0023	0.94	0.0414	0.19
LO	0.1430	0.00	0.0637	0.00	0.1857	0.00	0.0618	0.07
S5	0.0068	0.24	0.0148	0.02	0.0137	0.00	0.0231	0.01
S4	0.0030	0.03	0.0058	0.00	0.0105	0.00	0.0186	0.03
S3	0.0047	0.01	0.0041	0.12	0.0116	0.00	0.0192	0.05
S1	0.0008	0.84	0.0034	0.13	0.0097	0.01	0.0192	0.03
SF	-0.0104	0.00	-0.0013	0.46	-0.0039	0.00	0.0030	0.06
DS	0.2506	0.21	0.4726	0.09	-0.0154	0.93	-0.3068	0.39
DF	0.1347	0.21	0.0675	0.33	0.4137	0.00	0.1802	0.08
Obs./R^2	313	0.52	403	0.36	281	0.49	366	0.30
No. *DI* s	4	-	14	-	4	-	14	-
Equation (2)								
LEE	0.0450	0.10	0.0205	0.27	0.0654	0.10	0.0269	0.26
LME	0.0198	0.42	0.0174	0.49	-0.0063	0.83	0.0452	0.16
LO	0.1466	0.00	0.0633	0.01	0.1892	0.00	0.0601	0.08
S5	0.0061	0.29	0.0149	0.02	0.0140	0.00	0.0238	0.01
S4	0.0030	0.03	0.0059	0.00	0.0107	0.00	0.0193	0.02
S3	0.0046	0.01	0.0042	0.11	0.0118	0.00	0.0196	0.04
S1	0.0009	0.82	0.0035	0.12	0.0099	0.01	0.0202	0.02
SF	-0.0099	0.00	-0.0013	0.44	-0.0038	0.00	0.0031	0.05
DS	0.2398	0.24	0.4713	0.09	-0.0257	0.88	-0.3107	0.39
DF1	0.3091	0.26	-0.1498	0.61	0.6582	0.11	0.3155	0.06
DF5	0.1276	0.25	0.0780	0.54	0.3629	0.00	0.4913	0.00
DF9	-0.0437	0.78	0.0796	0.27	0.2905	0.34	0.0390	0.74
TestDFs	0.88	0.42	0.29	0.75	0.31	0.73	3.41	0.03
Obs./R^2	313	0.53	403	0.37	281	0.50	366	0.31
No. *DI* s	4	-	0	-	4	-	14	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6n: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors; electronics-related machinery

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0336	0.10	0.1029	0.00	0.1217	0.01	0.0613	0.07
LME	0.0049	0.82	-0.0204	0.31	0.0477	0.21	0.0788	0.06
LO	0.1014	0.00	0.0959	0.00	0.1076	0.00	0.0187	0.68
S5	0.0094	0.01	0.0007	0.87	0.0104	0.00	0.0023	0.66
S4	0.0018	0.04	0.0024	0.08	0.0074	0.00	-0.0053	0.29
S3	0.0010	0.28	0.0000	1.00	0.0061	0.03	-0.0004	0.95
S1	-0.0010	0.78	0.0036	0.34	0.0002	0.96	0.0058	0.75
SF	-0.0036	0.00	-0.0008	0.44	-0.0018	0.29	-0.0032	0.27
DS	0.7647	0.00	0.4660	0.00	0.7556	0.00	-0.9861	0.00
DF	0.1730	0.01	-0.1480	0.01	0.3976	0.00	-0.0702	0.47
Obs./R^2	522	0.46	496	0.33	489	0.35	461	0.20
No. *DI* s	6	-	13	-	6	-	13	-
Equation (2)								
LEE	0.0348	0.09	0.1032	0.00	0.1223	0.01	0.0623	0.07
LME	0.0027	0.90	-0.0194	0.33	0.0461	0.23	0.0786	0.06
LO	0.1023	0.00	0.0952	0.00	0.1072	0.00	0.0183	0.69
S5	0.0094	0.01	0.0007	0.87	0.0104	0.00	0.0023	0.66
S4	0.0018	0.05	0.0023	0.09	0.0074	0.00	-0.0053	0.29
S3	0.0012	0.23	-0.0001	0.96	0.0061	0.03	-0.0003	0.95
S1	-0.0009	0.82	0.0035	0.36	0.0002	0.97	0.0057	0.75
SF	-0.0038	0.00	-0.0006	0.54	-0.0018	0.28	-0.0032	0.26
DS	0.7591	0.00	0.4641	0.00	0.7556	0.00	-0.9844	0.00
DF1	0.2366	0.02	-0.0557	0.63	0.2782	0.22	0.0002	1.00
DF5	0.1082	0.16	-0.0808	0.45	0.3859	0.00	-0.1145	0.47
DF9	0.2590	0.01	-0.1693	0.01	0.4523	0.00	-0.0630	0.58
TestDFs	1.30	0.27	0.59	0.56	0.23	0.79	0.11	0.90
Obs./R^2	522	0.46	496	0.33	489	0.35	461	0.20
No. *DI* s	6	-	13	-	6	-	13	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6o: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, motor vehicles

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.1348	0.00	0.0631	0.00	0.0539	0.31	0.0608	0.02
LME	0.0259	0.45	0.0015	0.95	0.0367	0.33	0.1515	0.00
LO	0.1105	0.00	0.0748	0.00	0.1790	0.00	0.0589	0.04
S5	0.0036	0.49	0.0043	0.30	0.0089	0.05	0.0045	0.08
S4	0.0014	0.44	0.0022	0.41	0.0030	0.49	0.0014	0.59
S3	-0.0007	0.74	0.0020	0.52	0.0018	0.73	0.0033	0.34
S1	-0.0007	0.89	0.0010	0.87	0.0094	0.39	-0.0051	0.23
SF	-0.0015	0.23	-0.0014	0.21	-0.0024	0.28	-0.0016	0.28
DS	0.5324	0.35	-	-	-0.8580	0.43	-	-
DF	0.1376	0.16	-0.0396	0.59	0.1565	0.39	0.1234	0.31
Obs./R^2	260	0.51	313	0.44	242	0.44	293	0.47
No. *DI* s	0	-	2	-	0	-	2	-
Equation (2)								
LEE	0.1361	0.00	0.0621	0.00	0.0575	0.29	0.0593	0.04
LME	0.0284	0.44	0.0071	0.74	0.0360	0.34	0.1516	0.00
LO	0.1092	0.00	0.0763	0.00	0.1781	0.00	0.0591	0.04
S5	0.0025	0.64	0.0047	0.25	0.0089	0.05	0.0045	0.08
S4	0.0014	0.44	0.0024	0.34	0.0029	0.50	0.0014	0.59
S3	-0.0007	0.75	0.0024	0.43	0.0018	0.73	0.0033	0.34
S1	-0.0007	0.88	0.0020	0.74	0.0096	0.38	-0.0051	0.23
SF	-0.0016	0.20	-0.0017	0.14	-0.0023	0.30	-0.0015	0.30
DS	0.5259	0.35	-	-	-0.8599	0.43	-	-
DF1	0.2319	0.02	-0.3187	0.02	0.2812	0.18	0.2412	0.09
DF5	0.0842	0.51	-0.2317	0.13	0.0184	0.94	0.1127	0.62
DF9	0.1907	0.45	0.0947	0.18	0.4639	0.42	0.1060	0.42
TestDFs	0.53	0.59	5.84	0.00	0.51	0.60	0.32	0.73
Obs./R^2	260	0.51	313	0.46	252	0.45	293	0.47
No. *DI* s	0	-	2	-	0	-	2	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6p: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, other transportation machinery

Independent	Paid, production workers				Paid, non-production workers			
variable	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0698	0.00	0.1073	0.00	0.0538	0.26	0.0618	0.06
LME	-0.0046	0.91	0.0892	0.00	0.0529	0.29	0.1464	0.00
LO	0.0874	0.00	0.0552	0.03	0.1200	0.01	0.0542	0.10
S5	0.0012	0.86	0.0083	0.08	0.0044	0.08	0.0146	0.00
S4	0.0009	0.44	0.0023	0.28	0.0005	0.72	0.0116	0.00
S3	0.0014	0.26	0.0027	0.35	-0.0009	0.71	0.0111	0.00
S1	-0.0024	0.13	0.0088	0.32	0.0004	0.86	-0.0018	0.82
SF	-0.0042	0.01	-0.0028	0.09	-0.0009	0.54	-0.0015	0.35
DS	0.1033	0.70	0.3952	0.00	0.2742	0.23	0.2382	0.25
DF	0.4106	0.01	-0.0877	0.40	0.1516	0.59	-0.1477	0.25
Obs./R^2	264	0.55	329	0.40	221	0.34	293	0.43
No. *DI* s	3	-	1	-	3	-	1	-
Equation (2)								
LEE	0.0708	0.00	0.1033	0.00	0.0536	0.26	0.0619	0.06
LME	0.0040	0.92	0.0944	0.00	0.0540	0.29	0.1461	0.00
LO	0.0807	0.01	0.0543	0.03	0.1193	0.01	0.0548	0.10
S5	0.0018	0.78	0.0092	0.06	0.0044	0.07	0.0145	0.00
S4	0.0009	0.46	0.0023	0.28	0.0005	0.72	0.0116	0.00
S3	0.0013	0.32	0.0027	0.35	-0.0009	0.72	0.0111	0.00
S1	-0.0024	0.14	0.0088	0.32	0.0003	0.91	-0.0018	0.82
SF	-0.0042	0.01	-0.0025	0.13	-0.0009	0.54	-0.0015	0.35
DS	0.1128	0.68	0.3937	0.00	0.2769	0.23	0.2384	0.25
DF1	0.4924	0.00	-0.9923	0.00	0.1476	0.72	-0.0647	0.92
DF5	0.2546	0.21	0.0282	0.85	0.1236	0.76	-0.1948	0.44
DF9	0.6387	0.05	-0.0767	0.54	0.2389	0.37	-0.1337	0.38
TestDFs	0.81	0.44	10.85	0.00	0.05	0.95	0.03	0.97
Obs./R^2	264	0.56	329	0.41	221	0.34	293	0.43
No. *DI* s	3	-	1	-	3	-	1	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 6q: OLS Estimates of MNE-Private Compensation Differentials and Other Slope Coefficients from Equations (1) and (2); all p-values based on robust standard errors, furniture

Independent variable	Paid, production workers				Paid, non-production workers			
	1996		2006		1996		2006	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
Equation (1)								
LEE	0.0256	0.05	0.0664	0.00	0.1629	0.00	0.1176	0.00
LME	0.0317	0.07	0.0773	0.00	0.0066	0.74	0.0255	0.15
LO	0.0485	0.00	0.0357	0.01	0.1674	0.00	0.1351	0.00
S5	0.0103	0.00	0.0078	0.05	0.0090	0.00	0.0087	0.00
S4	0.0006	0.42	0.0014	0.01	0.0034	0.00	0.0065	0.00
S3	0.0005	0.42	0.0025	0.00	0.0010	0.39	0.0067	0.00
S1	0.0003	0.74	-0.0016	0.27	0.0003	0.94	-0.0037	0.16
SF	-0.0038	0.00	-0.0033	0.00	-0.0015	0.03	-0.0008	0.21
DS	0.0042	0.97	0.2056	0.00	-0.0150	0.91	0.0682	0.67
DF	0.1426	0.05	-0.0305	0.52	0.0272	0.82	0.2306	0.00
Obs./R^2	1,111	0.14	1,979	0.23	906	0.37	1,511	0.22
No. *DI* s	2	-	0	-	2	-	0	-
Equation (2)								
LEE	0.0253	0.05	0.0664	0.00	0.1655	0.00	0.1175	0.00
LME	0.0319	0.07	0.0772	0.00	0.0057	0.78	0.0250	0.16
LO	0.0485	0.00	0.0357	0.01	0.1689	0.00	0.1352	0.00
S5	0.0102	0.00	0.0078	0.05	0.0088	0.00	0.0087	0.00
S4	0.0006	0.39	0.0014	0.01	0.0033	0.00	0.0065	0.00
S3	0.0005	0.42	0.0025	0.00	0.0009	0.43	0.0067	0.00
S1	0.0004	0.74	-0.0016	0.27	0.0002	0.95	-0.0037	0.16
SF	-0.0039	0.00	-0.0033	0.00	-0.0016	0.03	-0.0008	0.21
DS	0.0046	0.97	0.2057	0.00	-0.0147	0.91	0.0686	0.67
DF1	-0.0795	0.22	0.0505	0.72	1.1484	0.03	0.0696	0.89
DF5	0.1480	0.25	-0.0439	0.81	-0.2757	0.24	0.4175	0.06
DF9	0.1577	0.08	-0.0326	0.52	0.0548	0.66	0.2196	0.01
TestDFs	3.25	0.04	0.16	0.85	3.16	0.04	0.42	0.66
Obs./R^2	1,111	0.14	1,979	0.23	906	0.37	1,511	0.22
No. *DI* s	2	-	0	-	2	-	0	-

Note: in the Obs./R2 rows, the coefficient column contains the number of observations and the P-value column contains the R-squared; the TestDFs rows show Wald tests of the hypothesis that coefficients on all foreign ownership dummies are equal and associated p-values; all estimates include 5 regional dummies; see the text for definitions or region and industry dummies; full results including the constant and all dummy coefficients are available from the authors.

Appendix Table 7: Industry definitions

Industry	1996, ISIC revision 2	2006, ISIC revision 3
17 sample industries		
Food & beverages	311+312+313	15
Textiles	321	17
Apparel	322	18
Footwear	324	192
Wood products	331	20
Paper products	341	21
Chemicals	351+352	24
Rubber products	355	251
Plastic products	356	252
Non-metallic mineral products	36	26
Basic metals	37	27
Metal products	381	28
General machinery	3821+3822+3823+3824+3829	29
Electronics-related machinery	3825+383+385	30+31+32+33
Motor vehicles	3843	34
Other transportation machinery	3841+3842+3844+3845+3849	35
Furniture	332	361
5 excluded industries		
Tobacco	314	16
Leather	323	191
Printing & publishing	342	22
Oil & coal products	353+354	23
Miscellaneous manufacturing	39	369+37

Note: There are numerous discrepancies between revisions 2 and 3 at the 3-, 4-, or 5-digit levels in revisions 2 and 3 that are impossible to resolve precisely; correspondingly, concordances often divide up categories arbitrarily among categories in the other classification; in 2006, 4-digit information is not reported for several plants in smaller 4-digit categories with relatively few plants.

Chapter 2: Wage Differentials between Foreign Multinationals and Local Plants and Worker Quality in Malaysian Manufacturing

2.1. Introduction

There is now substantial evidence that foreign multinational enterprises (MNEs) tend to pay wages that exceed those of corresponding local firms or plants. There is also evidence that positive MNE-local wage differentials persist even after controlling for related differences between foreign MNEs and local firms or plants (e.g., differences in factor intensity, size, industry affiliation, and location). However, most previous studies of MNE-local wage differentials have been unable to account for the influence of corresponding labor quality differentials in MNEs and local firms or plants. Lipsey and Sjöholm's (2004a) study of Indonesian plants in 1996, which finds that MNE-local differentials persisted even after accounting for worker education, is the major exception. Moreover, aside from limited evidence in studies by Lim (1977) and Lee and Nagaraj (1995), and the descriptive statistics presented in Ramstetter (1995, 1999) and Ramstetter and Haji Ahmad (2009), there is very little evidence regarding MNE-local wage differentials for the important case of Malaysia.[1] Data constraints have been an important reason for this important gap in the literature. This paper begins to fill that gap by using plant-level data from Malaysia's manufacturing census for 2000 and related surveys for 2001-2004 that allow for examination of MNE-local wage differentials after accounting for two important aspects of labor quality, educational background and occupation.

The paper begins with a short literature review and a description of methodologies used to examine the question of whether MNEs pay higher or lower wages than their local counterparts (Section 2), before examining the data and some descriptive statistics (Section 3).

[1] With the exception of Lee and Nagaraj's (1995) analysis of a limited sample of workers in the Klang Valley, which focused on male-female differentials, previous studies of Malaysia do not analyze MNE-local wage differentials.

Results of estimating Mincer-type equations, which reveal the extent of wage differentials after accounting for differences in labor force quality and other related plant characteristics, are then analyzed (Section 4). Finally some conclusions and suggestions for future research are offered (Section 5).

2.2. Literature Review and Methodology

Lipsey and Sjöholm's (2004a) study of manufacturing plants in Indonesia in 1996 is perhaps the most sophisticated study of MNE-local wage differentials and their relationship to labor quality available for host, developing economies.[2] They estimate Mincer-type equations for white- and blue-collar workers by industry and account for the influence of worker educational background, the share of female workers, as well as other plant-level characteristics related to wages (size, energy per worker, inputs per worker). They found that that MNEs paid higher wages than local plants and that statistically significant wage differentials persisted after accounting for the educational background of the plant's work force and the other plant-level characteristics. Ramstetter and Phan (2007) also found that positive wage differentials between MNEs and local, private firms in Vietnam persisted after accounting for firm's size, factor intensity, shares of technical workers, and shares of females in the firm's workforce. In contrast, results from Lee and Nagaraj's (1995) sample of workers in the Klang Valley of Malaysia in 1991 suggest that foreign ownership of a plant had no significant effects on wages of either male or female workers, after the influences several measures of labor quality (education, experience, occupation, training) and numerous other worker- and plant-level variables were accounted for.[3]

[2] These authors also examine other aspects of wage differentials and how they change over time in Lipsey and Sjöholm (2004b, 2005, 2006) and Sjöholm and Lipsey (2006).
[3] These variables were union membership, marital status, migration status, total hours worked, plant size, and plant export-orientation.

Other studies of Malaysia (Lim 1977), Thailand (Movshuk and Matsuoka-Movshuk 2006, Ramstetter 2004), and Venezuela and Mexico (Aitken et al 1996) have found that MNE-local wage differentials tended to persist after accounting for similar plant- or firm-level characteristics, but were unable to account for the influences of labor force quality. In addition, Ismail and Haji Mat Zin (2003) and similar studies of workers in other economies usually reveal significant returns to human capital, when measured by worker education, training, and experience, for example. There is thus substantial previous evidence that both plant ownership and worker quality have important influences on worker earnings. It is clear that relatively well educated, experienced, and well-trained workers generally expect relatively high returns to their work efforts. Firms or plants hiring high-quality workers usually expect relatively high productivity from them and offer commensurate compensation.

The primary reason that MNEs pay higher wages than local plants is probably the well documented tendency for MNEs to be relatively technology- or skill-intensive compared to non-MNEs (Caves 2007; Dunning 1993; Markusen 2002). However, even relatively sophisticated studies like Lipsey and Sjöholm (2004a) probably fail to fully account for MNE-local differences in skill intensity. For example, in addition to differences in worker education, there may be important differences in worker occupation, training, background, and experience that are often accounted for in studies of wage determination among individuals. In this study of Malaysia, for example, it is possible to account for differences in education and occupation, but the available data do not contain information on worker background (e.g., race, nationality), training, or experience.

Other reasons for MNE-local differentials are perhaps less clear, but there are at least three important possibilities. First, there is substantial evidence that MNEs often find it difficult to identify and retain suitably qualified workers. For example, in 1998, securing adequate quantity and quality of labor was the third most common of 27 possible problems for

Japanese affiliates operating in the ASEAN-4 (the four largest developing economies in the Association of Southeast Asian Nations: Indonesia, Malaysia, the Philippines, and Thailand), this problem being cited by 8.5 percent of these MNEs (Japan, Ministry of Economy, Trade and Investment 2001, pp. 536-537).[4] Other surveys also indicated that securing labor supply was the third most frequently cited of 14 investment motives of Japanese affiliates in Malaysia, being cited by 11-13 percent of these firms during 2000-2004 (Toyo Keizai, various years).[5] Correspondingly, many of the aforementioned studies suggest that MNEs may pay relatively high wages to secure or retain labor in economies like Malaysia.

Second, workers in host economies are often relatively familiar with management practices in local firms and may therefore be relatively reluctant to work for MNEs that often use less familiar management styles. This may lead them to demand a premium for working in the relatively unfamiliar MNE environment. Unfortunately, there is relatively little empirical evidence on this point, though many of the studies reviewed above mention it. On the other hand, relatively recent surveys of Malaysian university graduates suggest that MNEs are actually among the more popular employers for educated workers in this economy.[6]

Third, MNEs are often hypothesized to have important firm-specific assets in relatively large amounts compared to non-MNEs.[7] These firm-specific assets are generally intangible, and many of them are related worker quality. However, even when an MNE's intangible

[4] The most commonly cited problems were (1) competition for product markets (11.2 percent and (2) political instability (8.6 percent).
[5] The most commonly cited motives were (1) development of local markets and (2) strengthening of international competitiveness, which were cited by 21-31 percent of affiliates.
[6] For example, seven of the top 10 employers in 2008 were foreign companies in Malaysia (http://malaysias100.com/media/foreign-firms-the-favorite).
[7] Some theorists (especially Dunning) view the possession of firm-specific assets or ownership advantages as a key necessary condition for a firm to become an MNE (in addition to internalization and location advantages). Other theorists (Buckley and Casson 1992; Casson 1987; Rugman 1980, 1985) dispute this view, choosing instead to emphasize the role of internalization as the key distinguishing characteristic between MNEs compared to non-MNEs. However, the important point is that all agree that MNCs tend to possess these kinds of firm-specific assets in relatively large amounts.

assets are not directly related to worker skills, they may facilitate higher worker productivity by improving a firm's marketing and management, for example. In other words, the MNE's possession of firm-specific assets has the potential to make workers more productive in MNEs than in non-MNEs, even if labor quality is identical in MNEs and non-MNEs. In such cases, MNEs may find it profitable to pay relatively high wages to compensate for their relatively high productivity, especially when the ability to utilize firm-specific assets is related to workers' firm-specific experience or motivation, for example.

Partially reflecting differences in firm-specific assets, MNE-local wage differentials are thought to result from differences in other plant-level characteristics that might affect labor productivity and/or wages. For example, much of the literature reviewed above suggests that firms or plants which are relatively large or capital-intensive often pay relatively high wages and have relatively high labor productivity. In addition, location and industry affiliation are found to have important influences on the wage levels in firms or plants. Plants with relatively large shares of female workers often tend to pay relatively low average wages because females generally earn less than males, and Malaysia is no exception.[8] Thus, this paper will follow the previous literature summarized above and estimate earnings equations that account for the influences of worker quality and sex, plant size, factor intensity, location, and industry affiliation, as well as ownership (MNE vs. local owners). Particular attention will be paid to labor quality which can be measured in two ways with the data obtained. The industry dimension will also be carefully considered by the use of industry dummies in samples of all plants in 17 industries combined and by estimating separate equations for each industry (thereby allowing both intercepts and slopes to vary across industries).

[8] For evidence on Malaysia, see Chapman and Harding (1985), Lee and Nagaraj (1995), Milanovic (2006), and Schafgans (2000).

2.3. Data and Descriptive Statistics

This study employs the micro data underlying Malaysia's census of manufacturing plant activity in 2000 (Department of Statistics 2002) and smaller surveys of stratified samples for 2001-2004 (Department of Statistics various years). If samples are limited to plants with viable basic data (i.e., positive values of paid workers, output, worker compensation, and fixed assets), there were 18,799 plants in the 2000 census, but corresponding samples included only 11,898 to 13,197 plants in 2001-2004 (Appendix Table 1c). Most of the difference between the census and survey samples results from the census' inclusion of small plants with limited production or employment. For example, if samples are limited to medium-large plants with 20 or more paid workers and viable basic data (positive output, worker compensation, and fixed assets), the 2000 census contained 8,540 plants and the subsequent surveys 7,406 to 7,581 plants. These medium-large plants accounted for 95-97 of the paid workers (Table 1) and 97-98 percent of the output (Appendix Table 1b) by all plants with viable basic data.

Three types of ownership are identified in these data, majority-local plants, 50-50 joint ventures, and majority-foreign plants. MNEs are thus defined rather narrowly as plants with foreign ownership shares of 50 percent or more.[9] MNEs are predominantly medium-large plants which differ from small, predominantly local plants in important ways.[10] Thus, it is more meaningful to limit analyses of MNE-local wage differentials to medium-large plants than to include all plants. In addition to making sample size more consistent over time and allowing more meaningful MNE-local comparisons, dropping small plants has the important

[9] This definition is narrower than usual because MNEs are usually defined as plants or firms with foreign ownership shares of 10 percent or more. Unfortunately, it is impossible to use the standard definition because the precise foreign ownership share is not collected.

[10] Medium-large plants accounted for 90-95 percent of all MNE plants compared to only 41-60 percent of local plants (Appendix Table 1c). Medium-large plants also accounted for 99.7 percent or more of the paid workers (Table 1) and the output (Appendix Table 1b) of all MNEs, while corresponding shares for local plants were 93 percent or more.

advantage of removing most outliers from the samples.[11] The analysis also excludes seven relatively small industries with few MNEs, heterogeneous definitions, and/or heavy government regulation.[12]

The 17 industries included in the sample consisted of one combination of two 2-digit categories (office, computing, and precision machinery), three 3-digit categories (rubber, plastics, furniture) and 13 2-digit categories (the remaining industries in Table 1). The criteria for defining the 17 industries were (1) inclusion of competing plants in the same industry (because there are many multi-product plants in Malaysia, definitions are rather broad), (2) industry size measured in terms of paid workers or output, and (3) insuring sufficient samples of MNEs and local plants in each industry to facilitate reasonable comparisons. These 17 industries employed the vast majority of the paid workers in medium-large plants with viable basic data (89-91 percent, Table 1).

In 2001, paid employment in the 17 sample industries was 11 percent lower than in 2000, partially because coverage was lower in survey years than in the census year. However, most of the decline in 2001 probably resulted from the dot.com-related recession, which led to a sharp fall in real manufacturing GDP.[13] Its effects on the three electronics-related industries (office, computing, and precision machinery, electrical machinery, and radio, tv, and communication machinery) were particularly large, In these three industries, paid

[11] For example, in the entire 2000-2004 sample, there were 4,592 observations of plants paying extremely low average compensation per worker of less than RM100 (about US$26) per year. However, only 20 medium-large plants reported similarly low wages.

[12] Five of these industries (tobacco, leather and footwear, petroleum products, other transport equipment, and recycling) had only a dozen or fewer medium-large MNE plants in at least four of the five years, two were heterogeneous and relatively small industries (other transport equipment and miscellaneous manufacturing), and one industry is closely regulated by the government (printing and publishing).

[13] In 2001, real manufacturing GDP growth was -5.9 percent if measured at 1987 prices and -4.3 percent if measured at 2000 prices (Department of Statistics 2011b). This compares to 18 percent in 2000 (1987 prices), 4.3 (1987 prices) or 4.1 (2000 prices) percent in 2002, 8.6 (1987 prices) or 9.2 (2000 prices) percent in 2003, and 9.8 (1987 prices) or 9.6 (2000 prices) percent in 2004.

employment declined by 101,881 workers, which was over two-thirds of the decline in all 17 industries (150,705 workers). These three industries accounted for about one-third or more of all paid employment in the 17 industries (36 percent in 2000, 32-33 percent in other years) and are very important in Malaysia.

Radio, tv, and communication machinery was the largest of the 17 industries, employing 330,140 paid workers in 2000, 250,308 in 2001, and 270,046-292,317 in subsequent years (Table 1). MNEs accounted for 70-78 percent of these workers and 82-93 percent in in office, computing and precision machinery, which was another industry where maximum paid employment topped 100,000 (in 2000). Electrical machinery was a smaller employer (maximum 77,121) with relatively large MNE shares (54-62 percent). However, in other industries with large paid employment (over 100,000 in at least one year), MNE shares were much smaller, 12-14 percent in food and beverages, 14-17 percent in wood, and 23-31 percent in plastics. MNEs also played relatively large roles in several of the smaller industries examined in this study. For example, they accounted for 40 percent or more of the paid workers in at least one year in textiles, apparel, chemicals, rubber, and general machinery. In the 17 industries combined, MNEs accounted for just over two-fifths of paid employment (41-42 percent), somewhat larger shares of manufacturing employment than in most of East Asia's large developing economies (Ramstetter 2012b).

MNEs generally paid higher wages, defined as compensation per worker (including payments in kind, social insurance payments, and other items), than local plants (Table 2).[14] If all 17 industries are combined, this definition of wages was an average of 41-46 percent higher in MNEs than in local plants. However, there was a large variation in wage levels and MNE-local wage differentials among industries. MNE wages were highest in chemicals in all

[14] In sample plants, narrowly defined wages accounted for an average of 82-84 percent of total compensation, while payments in kind accounted for 5-6 percent, social insurance payments for 8 percent, and other items for the remainder.

years and increased from just over 36,000 ringgit (just under US$1,000) in 2000-2001 to 45,241 ringgit in 2004. MNEs also paid relatively high wages in general machinery, non-metallic mineral products, food and beverages, and basic metals. At the other end of the scale, MNE wages were lowest in apparel, wood, and furniture, ranging from just under 14,000 ringgit to about 18,500 ringgit.

MNE-local differentials tended to be largest in the industries that MNEs paid relatively high wages, food and beverages (70-93 percent), non-metallic mineral products (57-68 percent), chemicals (40-50 percent), and general machinery (41-55 percent). On the other hand, negative differentials were only observed in office, computing, and precision machinery (2000-2001 and 2003-2004) and radio, tv, and communication machinery (2004). Wage differentials were positive but relatively small in electrical machinery and wood (4-18 percent). MNE-local wage differentials were positive in 15 of the 17 industries in all years, exceeding 10 percent in the vast majority (14-16) of sample industries and 20 percent in a majority (10-13 industries).

Not surprisingly, similarly large variation across industries is observed in several measures of labor quality, measured either in terms of worker occupation or educational achievement, though variation of worker quality is less pronounced over time. If all 17 industries are combined, the mean share of paid workers in highly paid occupations, defined as management (including proprietors), professionals, and technicians, in paid workers, was 20 percent in MNEs in 2000 and 22-23 percent thereafter (Table 3).[15] These shares were 28-37 percent higher than in local plants (ratios of 1.28-1.37 in the Table). Consistent with the notion that wages are closely related to labor quality, the industry distribution of shares of highly paid workers was similar to the industry distribution of wages. For example, in MNEs, the share of

[15] Conversely, occupations that tended to be lowly paid were defined as clerics and related workers, elementary occupations, plant and machine operators, assemblers, and part-time workers.

workers in highly paid occupations varied from 9-10 percent in apparel, 9-11 percent in wood, and 12-17 percent in furniture to 27-32 percent in general machinery, 23-26 percent in food and beverages, 33-36 percent in chemicals, and 26-30 percent in basic metals. MNE-local differentials for shares of highly paid workers were positive (ratios in excess of 1) in all 17 industries in 2000, 14-15 industries in 2001-2003, and 11 industries in 2004. However, these differentials were generally smaller than corresponding wage differentials. Relatively large differentials exceeding 10 percent were observed in only 8 industries in 2004 and 11-13 industries in other years.

When all 17 industries were combined, highly educated workers (those with some kind of tertiary education) accounted for 16 percent of all workers in MNEs in 2000 and this share rose to 19 percent in 2003-2004 (Table 4). Similar to shares of highly paid workers, shares of highly educated workers were highest in chemicals and general machinery (averaging 30-31 percent), followed by non-metallic mineral products, radio, tv, and communication machinery, and basic metals. These shares were often substantially higher in MNEs than in local plants. If all 17 industries are combined, these differentials were 61 percent in 2000, 83-90 percent in 2001-2003, and 71 percent in 2004. At the industry-level MNEs had higher shares in 12-15 of the 17 industries. Moreover, differentials exceeded 10 percent in 11-14 industries and 20 percent in 9-13 industries. In other words, MNEs clearly hired relatively large shares of highly educated workers compared to local plants.

MNEs also tended to hire relatively large shares of moderately educated workers (those who completed the Malaysian Education Certificate or SPM but did not continue to tertiary education, Table 5). If all 17 industries are combined, these workers accounted for just under two-fifths of all employees in MNEs, and these shares were 20-37 percent higher than in local plants. The highest MNE shares were observed in motor vehicles, radio, tv, and communication machinery, office, computing and precision machinery, paper products, and

electrical machinery. In other words, MNEs were relatively large employers in the three electronics-related industries, and they also hired relatively large shares of moderately educated workers in these industries. MNE-local differentials were again positive in most industries, 12 in 2000 and 15-16 industries in subsequent years. Differentials exceeded 10 percent in 8 industries in 2000 and 11-13 industries in subsequent years. Thus, MNEs hired relatively large shares of both moderately and highly educated workers, and MNE-local differentials were substantially larger for highly educated worker shares than for moderately educated worker shares. Conversely, Tables 4 and 5 also make it clear that MNEs hired relatively small shares of workers who did not complete the SPM and are considered relatively unskilled in Malaysia.[16]

Information on the race of Malaysian workers and the number of and nationality of foreign workers are two other indicators potentially related to labor quality which were collected in the 2000 and 2005 censuses (and probably in the surveys for interim years).[17] Probably because this information is sensitive in Malaysia, it was not included in the data sets provided for this and related studies. The lack of information on foreign workers is probably of most consequence because the number of foreign workers in manufacturing plants rose rapidly during the period studied, from 219,633 or 14 percent of all manufacturing workers in 2000 to 366,095 or 22 percent of the total in 2005 (World Bank 2013, pp. 24, 193). Because foreign workers tend to be relatively unskilled and paid less than Malaysian nationals, MNE-local wage differentials may also be related to differences in foreign worker shares in MNEs and local plants. Many foreign workers are also known to work in the relatively labor intensive, MNE-dominated electronics-related machinery industries (Bormann et al., 2010). However, I

[16] In all 17 industries combined, shares of workers not completing SPM were 48 percent for MNEs in 2000 and 42-44 percent thereafter, or 20-31 percent below corresponding shares in local plants.

[17] I have a copy of the survey form for the 2005 census and have been told that the same form was used in 2000-2004 by Malaysian officials.

know of no published information on the extent to which shares of foreign workers differ between medium-large MNEs and local plants. Moreover, it is important to note that information on race, nationality, and sex of workers reflects both aspects of worker quality and the extent which a group is discriminated against in the workplace or educational institutions, for example.

In summary, these industry-level compilations suggest MNEs tended to pay relatively high wages, as well as hire relatively large portions of workers in high-paid occupations, and with moderate or high education. Previous compilations also suggest that MNEs tend to be much larger and somewhat more capital intensive than local plants during this period (Ramstetter and Haji Ahmad 2009). These differences can all explain at least part of the observed wage differentials between MNEs and local plants. It is thus of interest to examine whether wage differentials persist after accounting for these differences between MNEs and local plants.

2.4. Results of Estimating Earnings Equations

Using a specification similar to that in Lipsey and Sjöholm (2004a), the extent to which MNE-local wage differentials persist after accounting for the influences of plant-level capital intensity and size, as well as worker occupation, education, and sex, can be investigated by including a dummy variable identifying MNE plants in a typical earnings equation like the following:

$$LCE = a0 + a1(LKE) + a2(LO) + a3(SH) + a4(S3) + a5(S2) + a6(SF) + a7(DF) \quad (1)$$

where
LCE=log of compensation per employee in a plant (2000 ringgit)
LKE=log of fixed assets per employee in a plant (2000 ringgit)
LO=plant size, measured as the log of output in a plant (2000 ringgit)
SH=share of paid workers in highly paid occupations in a plant (percent)
S3=share of paid and unpaid workers with high education in a plant (percent)
S2=share of paid and unpaid workers with mid-level education in a plant (percent)
SF=share of paid workers that are female in a plant (percent)

DF=dummy variable identifying MNE plants (=1 if MNE, 0 otherwise)

As in Table 2, the dependent variable is defined to include all compensation to employees including all bonuses, payments in kind, social insurance payments, and other compensation. Nominal wages are converted to real values with the consumer price index. Reflecting previous discussion, signs of the coefficients on capital intensity (*a1*) and size (*a2*) are generally expected to be positive because capital-intensive and larger plants are generally expected to have more productive and better paid workers than smaller, more labor-intensive ones. Capital intensity and output are converted to real values using GDP deflators for 24 industries, which were generally defined at the 2- or 3-digit level (Department of Statistics 2011a).[18] Similarly, plants with higher quality workforces are expected to pay relatively high wages and the coefficients *a3*, *a4*, and *a5* are thus expected to be positive. In contrast, the coefficient *a6* is expected to be negative because females generally earn less than their male counterparts in Malaysia (and in many other countries).[19] Similarly, if data were available, it would be interesting to include the share of foreign workers in this equation, but this is not possible. To these extent that there are MNE-local differences in shares of foreign workers, worker experience and training (which are not available), estimates of equation (1) may face an omitted variable problem. Finally, if MNE-local wage differentials persist after accounting for capital intensity, size, as well as worker occupation, education, and sex, *a7* will be positive.

Plant-level panels are compiled using plant identity codes in the data and estimated equations also include sets of year, region, and industry dummies to account for year-specific,

[18] This is reasonable for output but not very accurate for capital because changes in asset prices are not reflected. Unfortunately, I know of no deflators for fixed assets in Malaysia.

[19] Alternatively, Ramstetter (2012a) disaggregates shares of workers in highly paid occupations, highly educated workers, and moderately educated workers by sex. This paper uses the specification in equation (1) because it simplifies interpretation coefficients on the occupation, education, and sex variables, and is more comparable to the specification in Lipsey and Sjöholm (2004a). Most importantly, estimates of MNE-local wage differentials from equation (1) are very similar to corresponding estimates of the alternative specification in Ramstetter (2012a).

region-specific, and industry specific influences on the constant which are not captured by the plant-level variables. Year-specific dummies use the first year in each sample as the base and estimates are performed for both 2000-2004 and 2001-2004. These alternative samples are used to examine the sensitivity of the results to the inclusion of the census year and to facilitate comparisons of a contemporaneous specification with a lagged specification where all independent variables are lagged one year. The lagged specification is used because it is less likely to be affected by simultaneity issues. Although simultaneity may not be a large problem in equation (1) because wage levels are not likely to be an important determinant of the right-hand side variables, the lagged specification provides an important robustness check.[20]

Region dummies are usually defined at the state level, but the lack of observations makes it necessary to combine some states when performing industry-level estimates. In three cases, states with similar population densities and nearby locations are combined (Perlis and Kedah, Kelantan, Terengganu, and Pahang, and finally Sabah, Sarawak, and Labuan). As a result there are usually 10 regions with 9 dummies defined using Kuala Lumpur as the base.[21] Industry dummies are defined at the 3-digit level. Because some industries are defined at the 3-digit level and other 3-digit subcategories contain too few plants to facilitate estimation, industry dummies are excluded from several of the industry-level regressions.[22] Because the descriptive data and previous research for Indonesia and Thailand suggest large variation in MNE-local wage differentials among industries, estimates are performed individually for 17

[20] Ramstetter (2012a) also estimates an alternative, contemporaneous specification (see note above) for 2000-2002 and 2002-2004, in addition to 2000-2004. Results for the subperiods suggest that significant, MNE-local wage differentials were more common in the earlier period. This paper focuses on longer panels because they are thought to be relatively reliable and they can facilitate more meaningful estimates of the lagged specification.

[21] In the regression for office, computing and precision machinery, one less region is used because of the lack of plants.

[22] Industry dummies are not included in estimates for apparel, wood, paper, rubber, plastics, motor vehicles, and furniture (Appendix Table 6).

industries and compared to results for the 17 industries combined. In general, the industry-level results are thought to be more reliable than results for all 17 industries combined.

Results of pooled ordinary least squares (OLS) and random effects panel estimates are also compared to evaluate the robustness of the results to alternative econometric assumptions. Fixed effects panel estimates are often used with data such as these, but they cannot reveal the extent of MNE-local wage differentials because ownership is time invariant for most plants. Hence, if a fixed effects estimator is used, the coefficient on the MNE dummy *a7* measures the wage differential between plants changing ownership and those with constant ownership, not the MNE-local wage differential, which is the primary concern in this paper. The pooled OLS results are the easiest to interpret because is coefficient *a7* is approximately equal to the percentage difference in wages between MNEs and local plants. When a random effects estimator is used, the presence of individual effects complicates the interpretation of this coefficient, but it is still important to examine how sensitive the results are to alternative econometric assumptions.

Table 6 presents the slope coefficients, a goodness of fit measure (R^2), and the results of the Breusch-Pagan test for random effects for estimates in combined samples of all 17 sample industries. The Breusch-Pagan test is always highly significant at the 1 percent level or better, both in these combined estimates and in the industry-level regressions discussed below. This implies that the random effects estimates should be preferred to OLS, but I remain interested in checking the robustness of the results to alternative assumptions. In this combined sample, coefficients on capital intensity, output, and the three measures of labor quality were positive as hypothesized and highly significant in almost all estimates. The only exception was in the contemporaneous specification for 2000-2004, when the coefficient on the share of moderately educated workers became insignificant. The coefficient on the female share was negative as hypothesized and highly significant. R^2 ranged from 0.55 to 0.57, indicating that

these estimates described the variation in the dependent variable reasonably well. The coefficient *a7* was positive and highly significant in all estimates, indicating that MNE-local wage differentials among all medium-large plants remained positive and meaningful statistically, even if the influences of capital intensity and size, as well as worker occupation, education, and sex, are accounted for. Not surprisingly, however, accounting for these influences greatly reduced the size of MNE-local wage differentials from over 40 percent (Table 2) to 8-9 percent when estimated by pooled OLS and 5-7 percent when estimated by random effects.

Space constraints prevent the presentation of all slope coefficients for all 17 industry-level estimates but they are provided for reference in Appendix Table 6. The output variable was the only one that was consistently positive and significant at the 5 percent level or better in all 102 estimates performed. Positive and significant coefficients were also common for shares of highly paid and highly educated workers as well as capital intensity (91, 85, and 79 of the estimates, respectively). The coefficient on the female share was also negative and significant in most industry-level estimates (74). The equation fit the data the worst in furniture, where R^2 ranged from 0.30 to 0.38. R^2 was 0.39 or higher in all other industries. The smallest sample was 322 observations in the lagged specification for office, computing, and precision machinery, and most samples exceeded 1,000. In short, for these 17 industries, all samples are sufficiently large to allow relatively reliable analysis and the estimates explained the variation of wages relatively well.

Table 7 presents estimates of the MNE-local wage differentials from industry-level estimates of equation (1). As in Table 2, wage differentials often differ greatly across industries. These wage differentials were positive and significant at the 5 percent level or better in all estimates for six of the 17 industries: food and beverages, chemicals, rubber, general machinery, electrical machinery, and furniture. Estimated differentials tended to be

largest in rubber (21-23 percent if estimated by pooled OLS and 11-15 percent if estimated by random effects). Estimated differentials were also large and significant in five of the six estimates for motor vehicles (11-16 percent, and 13-16 percent, respectively). Consistently significant differentials were smallest in chemicals (9-10 percent and 7-9 percent, respectively) and furniture (10-11 percent and 7-11 percent respectively). Differentials were also positive and significant in four of the six estimates for another four industries, apparel, plastics, non-metallic mineral products, and radio, tv, and communication machinery. In another three industries, textiles, paper, and basic metals, OLS results suggested positive and significant differentials, while random effects results suggested no significant differentials. Finally, there were no significant differentials in two industries, wood and office, computing and precision machinery, and there was only weak evidence of positive differentials in fabricated metals. Negative and significant differentials were never observed.

The results are thus more or less consistent with the observations from the descriptive statistics analyzed in the previous section. MNEs tended to pay higher wages than local plants. However, MNEs also tended to be relatively capital intensive, large, and have relatively large shares of workers in highly paid occupations and with higher or moderate education. Thus, accounting for these influences greatly reduces the scope of conditional MNE-local wage differentials in most industries. Perhaps the most conspicuous difference is in rubber products, where conditional differentials were relatively large and statistically significant, but unconditional differentials were relatively small compared to other industries. This suggests the measures of worker occupation, education, and sex, as well as capital intensity and size were not as strongly related to MNE-local differentials in this industry as in others. In contrast, the lack of significant differentials in wood suggests that worker quality, worker sex, capital intensity, and size accounted for the vast majority of the substantial unconditional differentials observed in this industry. In office, computing, and precision machinery, differentials were

similarly small and/or insignificant, whether measured conditional on worker quality and other plant characteristics or unconditionally. This probably reflects the heavy MNE dominance of this industry and its labor intensive nature. As emphasized above, conditional and unconditional differentials were either both relatively high or low in a number of other industries. However, it is very difficult to explain the precise reasons for the inter-industry variation in the size on MNE-local differentials.

2.5. Conclusions

This paper has investigated the extent of wage differentials between medium-large MNEs and local plants in Malaysia in the early 21st Century. A brief literature review highlighted the important fact that MNEs have often been found to pay higher wages than non-MNEs. The main cause of these wage differentials is probably the fact that MNEs tend to hire relatively large shares of highly skilled workers, but MNEs may also be motivated to pay higher wages to facilitate recruitment, reduce turnover, and compensate for higher worker productivity that results from the MNE's possession of firm-specific, generally intangible assets related to technology, marketing, and management, for example. MNE-local wage differentials can also result from workers' reluctance to work for MNEs.

In the 17 industries examined, medium-large MNEs paid wages that were on average about two-fifths more than in corresponding local plants. Consistent with previous evidence summarized in the literature review, shares of highly educated workers were also substantially (about three-fifths to 90 percent) higher in MNEs than local plants. Shares of moderately educated workers and workers in highly paid occupations were also about one-fourth to one-third higher in MNEs. Previous evidence also indicated that MNEs tended to be more capital intensive and larger than local plants during this period. Estimates of earnings equations suggest that differences in worker quality and plant characteristics were strongly correlated

with plant-level wages.

After accounting for differences in worker occupation, education, and sex, as well as the size and capital intensity of plants, and the effects of industry affiliation, plant location, and annual fluctuations on the constants estimated, estimates of MNE-local wage differentials became much smaller, an average of 5-9 percent persisted in the 17 industries combined, but these differentials were highly significant statistically. When all slopes are allowed to vary among the 17 industries (by estimating separate equations for each industry), results varied among industries and estimation method. Significant differentials were more common in the pooled OLS estimates than in the random effects estimates. There were consistently significant differentials in six industries: food and beverages, chemicals, rubber, general machinery, electrical machinery, and furniture. These two key results are also robust to alternative specifications of the occupation, education, and sex variables and observed in shorter subperiods (2000-2002 and 2002-2004; Ramstetter 2012a). There was also relatively strong evidence of positive, conditional differentials in motor vehicles, apparel, plastics, non-metallic mineral products, and radio, tv, and communication machinery, but these results are not as consistent when estimated with alternative specifications or in subperiods.

These findings are an important addition to the literature on MNE-local wage differentials in Southeast Asian developing economies, largely because the Malaysian data allow more detailed measurement of worker quality than similar data for other countries. The evidence is consistent with evidence from previous studies of Indonesia, for example, suggesting that MNEs tend pay their workers more than local plants even accounting for differences in worker quality and related plant characteristics in Southeast Asia. This in turn implies that MNEs impart important benefits on the workers that are fortunate enough to work for them.

Although these results are important, this paper leaves several related questions unanswered. For example, how do MNE takeovers of local plants (or *vice versa*) affect wage

differentials? Alternatively, does MNE presence affect wage levels in local plants in Malaysia? Although such questions are of keen interest, their answers require use of statistical techniques that are not compatible with the evaluation of average wage differentials and are left for future research. Analysis of the latter question also requires aggregation of industries and the industry-level results from this paper suggest aggregation may bias results. It is also important to reemphasize that this study fails to account for several potentially important aspects of worker quality often accounted for in similar studies of earnings by individuals. These include worker background (e.g. race or nationality), experience, and training. On the other hand, worker occupation and education are arguably the two most important aspects of worker quality. And this paper provides important evidence that MNE-local wage differentials persist in Malaysian manufacturing, even after accounting for these key measures of worker quality, as well as worker sex and the size and capital intensity of plants.

References:

Aitken, Brian, Ann. Harrison and Robert E. Lipsey (1996) "Wages and Foreign Ownership: A Comparative study of Mexico, Venezuela, and the United States", *Journal of International Economics,* 40(3-4), 345-371.

Bormann, Sarah, Pathma Krishnan, and Monika Neuner (2010), "Migration in a Digital Age, Migrant Workers in the Malaysian Electronics Industry, Case Studies on Jabil Circuit and Flextronics", Berlin: WEED - World Economy, Ecology and Development.

Buckley, Peter J. and Mark Casson (1992), *The Future of the Multinational Enterprise*, 2nd Edition. London: Macmillan.

Casson, Mark (1987), *The Firm and the Market: Studies on the Multinational and the Scope of the Firm*, Cambridge, MA: MIT Press.

Caves, Richard E. (2007), *Multinational Enterprise and Economic Analysis*, 3rd edition, London: Cambridge University Press.

Chapman, Bruce J. and J. Ross Harding (1985), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", *Journal of Development Studies*, 21(3), 362-376.

Department of Statistics (2002), *Census of Manufacturing Industries 2001* [2000 data]. Putrajaya: Department of Statistics.

Department of Statistics (2011a), *Annual National Accounts, Gross Domestic Product (GDP) 2000-2010*. Putrajaya: Department of Statistics.

Department of Statistics (2011b), *Malaysia Economic Statistics – Time Series 2011*. Putrajaya: Department of Statistics.

Department of Statistics (various years), *Annual Survey of Manufacturing Industries*, 2002-2005 issues [2001-2004 data], Kuala Lumpur: Department of Statistics.

Dunning, John H. (1993), *Multinational Enterprises and the Global Economy*. Workingham, U.K.: Addison-Wesley Publishing Co.

Ismail, Rahmah and Haji Mat Zin, Ragayah (2003), "Earnings Differentials Determinants between Skills in the Malaysian Manufacturing Sector", *Asian Economic Journal*, 17(4), 325-340.

Japan, Ministry of Economy, Trade and Investment (2001), *Dai 29 Kai Wagakuni Kigyou no Gaikai Jigyou Katsudou [The 29th Survey of Overseas Business Activities of Japanese Companies]* (1998 data; in Japanese), Tokyo: Ministry of Economy Trade and Industry.

Lee, Kiong-Hock and Shyamala Nagaraj (1995), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", *Journal of Development Studies*, 31(3), 467-480.

Lim, David (1977), "Do Foreign Companies Pay Higher Wages than Their Local Counterparts in Malaysian Manufacturing", *Journal of Development Economics*, 4(1), 55-66.

Lipsey, Robert E., and Fredrik Sjöholm (2004a), "Foreign Direct Investment, Education, and Wages in Indonesian Manufacturing", *Journal of Development Economics*, 73(1), 415-22.

Lipsey, Robert E., and Fredrik Sjöholm (2004b), "FDI and Wage Spillovers in Indonesian Manufacturing," *Review of World Economics*, 40(2), 321-32.

Lipsey, Robert E. and Fredrik Sjöholm (2005), "Host Country Impacts of Inward FDI: Why Such Different Answers?" in Theodore H. Moran, Edward M. Graham, and Magnus Blomstrom, eds., *Does Foreign Direct Investment Promote Development?*, Washington D.C.: Institute for International Economics, pp. 23-43.

Lipsey, Robert E. and Fredrik Sjöholm (2006), "Foreign Multinationals and Wages in Indonesia" in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 35-53.

Markusen, James R. (2002), *Multinational Firms and the Theory of International Trade*. Cambridge, MA: M.I.T. Press.

Milanovic, Branko (2006), "Inequality and Determinants of Earnings in Malaysia", *Asian Economic Journal*, 20(2), 191-216.

Movshuk, Oleksandr and Atsuko Matsuoka-Movshuk (2006), "Multinationals and Wages in Thai Manufacturing", in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 54-81.

Ramstetter, Eric D. (1995), "Characteristics of Multinational Firms in Malaysia: A Time Series Perspective" in Mitsuru Toida and Daisuke Hiratsuka, eds., *Ajia Kogyoken no Keizai Bunseki to Yosoku (IV)* [Projections for Asian Industrializing Region (IV)], Tokyo: Institute of Developing Economies, pp. 95-171.

Ramstetter, Eric D. (1999), "Comparisons of Foreign Multinationals and Local Firms in Asian Manufacturing Over Time", *Asian Economic Journal*, 13(2), 163-203.

Ramstetter, Eric D. (2004), "Labor productivity, wages, nationality, and foreign ownership shares in Thai manufacturing, 1996-2000", *Journal of Asian Economics*, 14(6), 861-884.

Ramstetter, Eric D. (2012a), "Do Multinationals Pay High Wages in Malaysian Manufacturing?", Working Paper 2012-05, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2012b), "Foreign Multinationals in East Asia's Large Developing Economies", Working Paper 2012-06, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Phan Minh Ngoc (2007), "Employee Compensation, Ownership, and Producer Concentration in Vietnam's Manufacturing Industries", Working Paper 2007-07, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Shahrazat Binti Haji Ahmad (2011), "Foreign Multinationals in Malaysian Manufacturing After the Crisis", *Thammasat Economic Journal*, 29(4), 124-160.

Rugman, Alan M., (1980) "Internalization as a General Theory of Foreign Direct Investment: A Re-Appraisal of the Literature," *Weltwirtschaftliches Archiv*, 116(2), 365-379.

Rugman, Alan M. (1985) "Internalization is Still a General Theory of Foreign Direct Investment," *Weltwirtschaftliches Archiv*, 121(3), 570-575.

Schafgans, Marcia M.A. (2000), "Gender Wage Differences in Malaysia", *Journal of Development Economics*, 63(2), 351-378.

Sjöholm, Fredrik and Robert E. Lipsey (2006), "Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data", *Economic Development and Cultural Change*, 55(1), 201-221.

Toyo Keizai (various years), *Kaigai Shinshutsu Kigyou Souran: Kaisha Betsu Hen [A Comprehensive Survey of Firms Overseas: Compiled by Company]*, 2001-2005 issues. Tokyo: Toyo Keizai.

World Bank (2013), *Immigration in Malaysia: Assessment of its Economic Effects, and a Review of the Policy and System*, Washington, D.C.: World Bank, Human Development Social Protection and Labor Unit East Asia and Pacific Region.

Table 1: Number of Paid Workers in All Plants with Viable Data and MNE Shares

	Paid workers in all plants (1,000s)					MNE shares of paid workers (%)				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
MEDIUM-LARGE PLANTS, 20+ workers	1,498	1,341	1,441	1,452	1,501	40	41	40	40	40
17 sample industries	1,397	1,246	1,339	1,352	1,393	41	42	41	41	42
Food & beverages	113.945	113.523	120.215	123.549	124.806	14	14	13	12	13
Textiles	44.005	39.219	43.427	37.962	36.242	48	47	50	43	45
Apparel	69.244	64.769	74.281	68.214	77.000	30	35	42	34	49
Wood products	123.493	112.469	108.890	111.324	114.278	14	15	15	17	17
Paper products	32.185	29.457	32.898	30.494	34.040	16	21	17	15	16
Chemicals	45.406	42.147	47.076	48.989	51.367	38	41	41	38	39
Rubber products	72.505	67.061	66.594	69.072	72.318	36	37	39	41	39
Plastics	91.455	82.441	98.369	101.143	100.176	23	24	28	30	31
Non-metallic mineral products	55.508	55.623	55.732	54.158	54.182	22	23	24	23	24
Basic metals	39.878	37.959	40.128	40.835	42.081	24	24	25	27	22
Fabricated metals	57.730	52.093	61.743	63.662	68.045	28	26	24	27	24
General machinery	46.561	45.091	45.420	44.943	51.062	52	47	41	38	40
Office, computing & precision machinery	101.030	95.658	82.802	81.936	89.155	82	85	92	91	93
Electrical machinery	77.121	60.444	65.876	67.848	67.425	54	62	50	60	59
Radio, tv & communication machinery	330.140	250.308	279.046	292.317	285.123	70	78	74	73	73
Motor vehicles	33.700	38.999	46.739	47.776	50.597	16	12	10	15	16
Furniture	63.286	59.226	69.289	67.987	75.369	20	18	17	14	14
7 excluded industries	101	94	103	100	107	20	21	19	16	21
SMALL PLANTS, 1-19 workers	73	48	45	43	39	2	2	2	2	2

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; excluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 2: Mean Annual Compensation per Paid Worker in Medium-Large MNEs and MNE-Local Differentials

	MNEs (current ringgit/year)					MNE-local ratios				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	23,205	25,128	25,987	27,092	27,910	1.407	1.464	1.451	1.440	1.432
Food & beverages	28,428	28,909	31,257	31,585	32,886	1.702	1.835	1.931	1.852	1.878
Textiles	19,341	20,210	20,166	20,366	19,744	1.307	1.263	1.239	1.218	1.118
Apparel	13,986	15,085	14,508	14,969	16,142	1.222	1.279	1.193	1.210	1.380
Wood products	15,390	15,853	15,986	15,274	16,006	1.177	1.150	1.120	1.035	1.037
Paper products	21,329	23,240	23,357	26,591	24,786	1.184	1.213	1.148	1.284	1.203
Chemicals	36,959	36,524	40,813	43,183	45,241	1.473	1.401	1.463	1.469	1.502
Rubber products	19,973	20,996	21,374	21,891	23,556	1.302	1.320	1.276	1.289	1.321
Plastics	19,187	21,252	22,820	23,429	23,020	1.217	1.272	1.307	1.290	1.157
Non-metallic mineral products	28,669	30,594	29,863	34,416	34,133	1.614	1.675	1.570	1.673	1.589
Basic metals	27,426	30,284	29,044	32,200	30,599	1.285	1.298	1.218	1.337	1.196
Fabricated metals	24,148	24,538	24,138	25,411	26,015	1.398	1.330	1.297	1.288	1.269
General machinery	29,093	32,604	34,257	37,092	36,321	1.409	1.417	1.435	1.552	1.467
Office, computing & precision machinery	22,177	22,823	25,037	24,159	25,862	0.990	0.866	1.005	0.819	0.928
Electrical machinery	19,207	21,746	21,907	22,944	23,312	1.117	1.169	1.073	1.094	1.041
Radio, tv & communication machinery	21,109	24,046	22,766	23,790	24,426	1.145	1.261	1.205	1.111	0.992
Motor vehicles	25,510	23,890	26,642	29,720	28,633	1.424	1.204	1.281	1.397	1.271
Furniture	15,141	16,507	16,839	18,530	18,455	1.188	1.263	1.180	1.307	1.247

Note: See Table 1 for a precise definition of sample plants.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 3: Mean Shares of Paid Workers with Highly Paid Occupations in Sample MNEs and MNE-Local Differentials

	MNEs (% of paid workers)					MNE-local ratios				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	20	22	22	23	22	1.369	1.338	1.282	1.360	1.276
Food & beverages	23	25	26	25	24	1.456	1.513	1.474	1.504	1.436
Textiles	17	19	19	19	16	1.150	1.205	1.061	1.128	0.978
Apparel	9	9	10	9	9	1.104	0.904	0.969	0.886	0.555
Wood products	11	10	11	9	10	1.022	0.949	0.908	0.856	0.932
Paper products	19	20	22	24	21	1.212	1.250	1.262	1.365	1.244
Chemicals	33	33	35	36	34	1.378	1.272	1.281	1.277	1.270
Rubber products	15	16	16	15	16	1.129	1.107	1.115	1.114	1.117
Plastics	19	22	20	20	18	1.286	1.234	1.137	1.221	1.036
Non-metallic mineral products	22	22	21	26	24	1.468	1.333	1.185	1.567	1.410
Basic metals	26	25	27	30	26	1.407	1.185	1.228	1.395	1.317
Fabricated metals	20	20	21	22	20	1.286	1.129	1.106	1.183	1.045
General machinery	27	29	30	32	31	1.401	1.505	1.295	1.450	1.329
Office, computing & precision machinery	20	20	22	24	24	1.084	0.905	1.129	1.034	0.946
Electrical machinery	18	20	21	20	20	1.083	1.087	1.063	0.983	0.952
Radio, tv & communication machinery	20	23	23	22	23	1.239	1.150	1.028	1.019	0.962
Motor vehicles	20	20	22	24	22	1.177	1.067	1.107	1.321	1.198
Furniture	12	12	13	17	13	1.080	1.096	1.111	1.353	1.028

Note: See Table 1 for a precise definition of sample plants; highly paid occupations are (1) proprieters, business partners, (2) managers, professionals, executives, and (3) technicians, professionals.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 4: Mean Shares of All (paid & unpaid) Workers with High Education in Sample MNEs and MNE-Local Differentials

	MNEs (% of all workers)					MNE-local ratios				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	16	17	18	19	19	1.611	1.879	1.901	1.828	1.706
Food & beverages	17	17	19	19	19	2.113	2.435	2.658	2.563	2.370
Textiles	9	8	8	10	9	0.933	0.928	0.824	0.914	0.889
Apparel	5	5	5	5	4	1.068	1.271	1.030	0.956	0.629
Wood products	7	7	7	6	6	1.426	1.488	1.488	1.201	1.143
Paper products	16	15	17	18	16	1.312	1.424	1.442	1.368	1.225
Chemicals	28	29	31	32	34	1.517	1.677	1.626	1.582	1.557
Rubber products	11	10	9	10	10	1.200	1.283	1.129	1.074	1.139
Plastics	14	16	18	17	15	1.292	1.593	1.625	1.545	1.209
Non-metallic mineral products	19	19	19	25	21	2.000	2.288	2.203	2.797	2.029
Basic metals	18	17	18	20	18	1.268	1.337	1.426	1.464	1.269
Fabricated metals	16	16	17	18	18	1.258	1.578	1.762	1.694	1.643
General machinery	26	28	31	35	31	1.996	2.207	2.086	2.448	1.930
Office, computing & precision machinery	16	15	16	19	21	0.975	0.712	0.820	0.695	0.731
Electrical machinery	14	17	18	17	17	0.973	1.288	1.233	0.972	0.969
Radio, tv & communication machinery	16	19	18	18	20	1.048	1.234	1.026	0.983	0.953
Motor vehicles	15	14	19	20	18	1.182	1.124	1.340	1.548	1.375
Furniture	7	6	6	9	8	0.986	0.911	1.236	1.379	1.152

Note: See Table 1 for a precise definition of sample plants; high education is defined as education beyond the Malaysian Education Certificate (SPM), an exam taken by all students in the 5th year of secondary school (i.e., some level of vocational school, college, university, or graduate school).

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 5: Mean Shares of All (paid & unpaid) Workers with Mid-level Education in Sample MNEs and MNE-Local Differentials

	MNEs (% of paid & unpaid workers)					MNE-local ratios				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	36	39	39	39	39	1.201	1.369	1.355	1.341	1.283
Food & beverages	35	37	35	34	38	1.295	1.372	1.344	1.236	1.328
Textiles	32	34	40	36	38	1.075	1.013	1.219	1.134	1.137
Apparel	16	22	20	20	24	0.781	1.066	1.012	0.884	0.816
Wood products	17	22	21	22	21	0.921	1.180	1.083	1.162	1.100
Paper products	39	41	44	45	43	1.109	1.250	1.290	1.282	1.179
Chemicals	41	41	42	42	40	1.104	1.161	1.131	1.074	1.033
Rubber products	28	32	34	31	35	1.049	1.178	1.309	1.203	1.282
Plastics	35	42	41	40	38	1.024	1.316	1.337	1.332	1.181
Non-metallic mineral products	33	35	34	34	34	1.275	1.392	1.425	1.416	1.412
Basic metals	38	45	46	39	37	1.127	1.344	1.336	1.230	1.160
Fabricated metals	39	41	40	38	38	1.111	1.378	1.394	1.275	1.277
General machinery	39	41	40	40	40	1.104	1.085	1.098	1.088	1.044
Office, computing & precision machinery	44	43	42	48	47	0.937	0.948	0.864	1.205	1.219
Electrical machinery	34	43	41	45	45	0.794	1.101	1.042	1.116	1.101
Radio, tv & communication machinery	43	48	46	49	48	1.007	1.294	1.119	1.146	1.064
Motor vehicles	47	51	48	49	47	1.217	1.360	1.231	1.249	1.185
Furniture	20	24	20	24	21	0.711	1.015	0.877	0.992	0.809

Note: See Table 1 for a precise definition of sample plants; mid-level education is defined as successful completion of the Malaysian Education Certificate (SPM), an exam taken by all students in the 5th year of secondary school, but no further education..

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Table 6: Multinational-Local Wage Differentials, Other Slope Coefficents, and Equation Indicators from Estimates of Equation (1) for all 17 Sample Industries Combined

	Pooled OLS			Random Effects		
	Lagged	Contemporaneous		Lagged	Contemporaneous	
Slope coefficient variable, indicator	2001-2004	2001-2004	2000-2004	2001-2004	2001-2004	2000-2004
LKE =capital intensity	0.0242 a	0.0329 a	0.0338 a	0.0183 a	0.0360 a	0.0367 a
LO =output scale	0.1071 a	0.1178 a	0.1187 a	0.1032 a	0.1229 a	0.1264 a
SH =highly paid share of paid workers	0.0074 a	0.0070 a	0.0082 a	0.0037 a	0.0061 a	0.0074 a
S3 =highly educated share of all workers	0.0064 a	0.0072 a	0.0060 a	0.0042 a	0.0064 a	0.0049 a
S2 =moderately educated share of all workers	0.0011 a	0.0011 a	0.0005 a	0.0006 a	0.0007 a	0.0001
SF =female share of paid workers	-0.0039 a	-0.0035 a	-0.0036 a	-0.0032 a	-0.0026 a	-0.0025 a
DF = MNE-local differential (ratio less 1)	0.0890 a	0.0809 a	0.0913 a	0.0749 a	0.0525 a	0.0658 a
R^2	0.5591	0.5735	0.5638	0.5454	0.5683	0.5579
Observations	21,671	26,855	34,491	21,671	26,855	34,491
Breusch-Pagan Test	-	-	-	8,254 a	10,202 a	14,135 a

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; robust standard errors (clustered by plant for random effects) are used to account for potential heteroskedasticiy; results of the Breusch-Pagan Test indicate the null of no random effects is always rejected at the 1% level; these results come from estimates that also include year, industry, and region dummies; full results including constants and coefficients on year, industry, and region dummies are available from the author.

Table 7: Industry-level Estimates of Multinational-Local Wage Differentials after Controlling for Capital Intensity, Size, Labor Occupation, Labor Skill, and Labor Gender from Equation (1)

	Pooled OLS			Random Effects		
	Lagged	Contemporaneous		Lagged	Contemporaneous	
Industry	2001-2004	2001-2004	2000-2004	2001-2004	2001-2004	2000-2004
Food & beverages	0.1069 a	0.1154 a	0.1176 a	0.1104 a	0.1241 a	0.1075 a
Textiles	0.1084 a	0.1155 a	0.1196 a	0.0269	0.0804 c	0.0627
Apparel	0.0764 a	0.0433	0.0499 b	0.0922 b	0.0551	0.1138 a
Wood products	0.0040	-0.0084	0.0047	0.0203	-0.0170	0.0047
Paper products	0.0805 b	0.0661 b	0.0710 a	0.0715	0.0496	0.0206
Chemicals	0.0950 a	0.0858 a	0.0958 a	0.0679 b	0.0858 a	0.0906 a
Rubber products	0.2259 a	0.2076 a	0.2195 a	0.1470 a	0.1121 a	0.1215 a
Plastics	0.0798 a	0.0749 a	0.0906 a	0.0579 b	0.0266	0.0409 c
Non-metallic mineral products	0.1077 a	0.0728 b	0.0845 a	0.0865 b	0.0142	0.0317
Basic metals	0.1023 a	0.1153 a	0.1124 a	0.0436	0.0477	0.0462
Fabricated metals	0.0408 c	0.0316	0.0692 a	0.0597 c	0.0336	0.0743 b
General machinery	0.0911 b	0.0762 b	0.0755 a	0.1141 b	0.1282 a	0.1365 a
Office, computing & precision machinery	-0.0140	-0.0503	-0.0273	0.0047	-0.0234	-0.0379
Electrical machinery	0.1020 a	0.0903 a	0.1126 a	0.0604 b	0.0789 b	0.0862 a
Radio, tv & communication machinery	0.0754 a	0.0633 a	0.0460 a	0.0719 a	0.0435 c	0.0284
Motor vehicles	0.1091 b	0.1361 a	0.1617 a	0.1267 b	0.1270 c	0.1605 b
Furniture	0.0993 a	0.1057 a	0.1090 a	0.1103 a	0.0690 b	0.0702 b

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; robust standard errors (clustered by plant for random effects) are used to account for potential heteroskedasticiy; results of the Breusch-Pagan Test indicate the null of no random effects is always rejected at the 1% level; other slope coefficients and equation statistics are presented in Appendix Table 6; these results come from estimates of equation (1) that also include year, industry, and region dummies; full results including constants and coefficients on year, industry, and region dummies are available from the author.

Appendix Table 1a: Number of Paid Workers in Plants with Viable Data (thousands)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
MEDIUM-LARGE PLANTS, 20+ workers	898.91	793.84	870.09	878.36	893.48	598.95	546.93	571.08	573.79	607.04
17 sample industries	818.14	719.24	786.97	794.49	808.74	579.05	527.25	551.56	557.72	584.52
Food & beverages	98.50	97.39	104.94	109.24	108.92	15.44	16.13	15.28	14.31	15.88
Textiles	22.67	20.87	21.60	21.48	19.91	21.33	18.35	21.83	16.48	16.33
Apparel	48.43	41.83	42.76	44.71	39.27	20.82	22.94	31.52	23.50	37.73
Wood products	105.68	96.05	92.12	92.59	94.37	17.81	16.42	16.77	18.73	19.91
Paper products	26.90	23.19	27.45	25.91	28.53	5.28	6.26	5.45	4.59	5.51
Chemicals	28.28	24.66	27.79	30.28	31.25	17.13	17.49	19.29	18.71	20.11
Rubber products	46.70	42.46	40.34	40.99	43.83	25.81	24.60	26.25	28.08	28.48
Plastics	70.15	63.04	70.92	70.61	69.00	21.31	19.40	27.44	30.54	31.18
Non-metallic mineral products	43.22	42.89	42.36	41.70	41.15	12.29	12.74	13.37	12.46	13.03
Basic metals	30.38	28.92	29.98	29.91	32.83	9.50	9.04	10.15	10.92	9.25
Fabricated metals	41.60	38.59	46.77	46.66	51.87	16.13	13.50	14.98	17.00	16.17
General machinery	22.21	23.87	26.57	27.95	30.43	24.35	21.22	18.85	16.99	20.63
Office, computing & precision machinery	18.40	14.25	6.97	7.01	5.87	82.63	81.41	75.83	74.93	83.28
Electrical machinery	35.46	23.13	32.87	27.35	27.51	41.66	37.31	33.00	40.50	39.91
Radio, tv & communication machinery	100.48	55.42	73.85	78.99	76.91	229.66	194.89	205.20	213.33	208.21
Motor vehicles	28.31	34.32	41.83	40.81	42.52	5.39	4.68	4.91	6.97	8.08
Furniture	50.78	48.36	57.85	58.30	64.56	12.51	10.87	11.44	9.68	10.81
7 excluded industries	80.77	74.60	83.12	83.87	84.74	19.90	19.68	19.52	16.07	22.52
SMALL PLANTS, 1-19 workers	71.08	46.86	43.93	41.87	37.69	1.74	1.04	0.96	0.98	0.82

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1b: Gross Output in Plants with Viable Data (billions of ringgit)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
MEDIUM-LARGE PLANTS, 20+ workers	207.859	185.217	222.032	257.045	304.572	222.810	205.290	230.050	252.284	291.543
17 sample industries	176.826	157.048	189.767	213.088	249.343	210.181	188.626	206.719	239.082	273.392
Food & beverages	36.428	35.045	47.210	58.006	59.866	10.434	9.885	11.327	12.391	14.350
Textiles	2.725	2.443	2.684	2.443	2.432	4.953	4.149	3.822	3.570	3.961
Apparel	3.420	2.727	2.928	3.184	3.027	1.602	1.663	2.041	1.753	2.713
Wood products	11.047	9.473	9.759	10.836	12.108	2.000	1.797	1.897	2.018	2.678
Paper products	5.498	4.442	5.456	5.182	6.124	1.055	1.404	1.264	1.053	1.441
Chemicals	12.278	10.356	13.494	17.849	22.799	14.396	13.070	16.898	21.522	33.082
Rubber products	7.169	6.729	7.096	8.206	9.721	3.759	3.591	3.847	4.953	5.679
Plastics	8.303	7.261	9.128	9.799	10.092	3.071	2.976	6.837	7.368	6.422
Non-metallic mineral products	8.462	8.567	9.006	8.879	10.494	3.469	3.285	3.597	3.925	4.271
Basic metals	11.355	10.612	12.825	15.380	24.144	4.151	3.399	4.026	5.722	4.533
Fabricated metals	7.286	6.237	7.945	8.670	10.552	4.150	3.215	3.537	4.631	5.107
General machinery	3.489	4.568	6.221	5.276	6.256	7.604	7.238	6.430	5.870	8.103
Office, computing & precision machinery	5.714	4.105	1.738	10.112	6.522	39.155	39.569	46.808	53.192	60.259
Electrical machinery	6.812	3.698	5.465	4.830	6.429	7.578	5.740	6.789	7.816	8.306
Radio, tv & communication machinery	28.982	20.117	21.465	22.687	28.122	100.187	85.338	85.236	98.685	107.106
Motor vehicles	12.942	16.061	21.417	15.664	23.383	1.094	0.881	0.979	3.374	3.787
Furniture	4.916	4.608	5.931	6.084	7.272	1.523	1.427	1.384	1.238	1.595
7 excluded industries	31.033	28.169	32.266	43.958	55.229	12.629	16.664	23.331	13.202	18.151
SMALL PLANTS, 1-19 workers	11.891	8.370	8.294	9.462	10.282	0.447	0.243	0.211	0.307	0.210

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 1c: Number of Plants with Viable Data

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
MEDIUM-LARGE PLANTS, 20+ workers	7,010	6,032	6,172	6,165	6,249	1,530	1,374	1,398	1,379	1,332
17 sample industries	6,204	5,317	5,461	5,455	5,511	1,432	1,280	1,308	1,289	1,234
Food & beverages	1,126	1,105	1,137	1,086	1,094	93	91	96	90	89
Textiles	173	147	148	151	145	42	40	37	34	33
Apparel	313	266	214	220	255	48	41	38	40	36
Wood products	724	602	597	583	547	54	46	46	43	44
Paper products	231	181	185	196	213	37	36	40	37	39
Chemicals	280	234	228	259	276	128	123	137	133	134
Rubber products	287	205	211	207	215	98	89	81	76	76
Plastics	599	460	488	489	484	116	109	111	119	115
Non-metallic mineral products	413	381	370	359	362	50	52	53	51	53
Basic metals	232	212	215	211	240	56	51	52	51	48
Fabricated metals	526	505	555	544	577	115	102	97	111	100
General machinery	282	260	275	315	297	87	82	79	64	77
Office, computing & precision machinery	37	33	30	31	24	79	64	67	66	61
Electrical machinery	223	170	178	179	177	123	98	107	106	97
Radio, tv & communication machinery	193	96	124	118	83	227	188	200	201	164
Motor vehicles	133	117	135	134	127	19	17	18	21	21
Furniture	432	343	371	373	395	60	51	49	46	47
7 excluded industries	806	715	711	710	738	98	94	90	90	98
SMALL PLANTS, 1-19 workers	10,093	5,702	5,168	5,203	4,246	166	89	82	81	71

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 2: Mean Annual Compensation per Paid Worker in Medium-Large Plants with Viable Data (current ringgit per year)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	16,491	17,160	17,914	18,816	19,496	23,205	25,128	25,987	27,092	27,910
Food & beverages	16,703	15,757	16,186	17,058	17,510	28,428	28,909	31,257	31,585	32,886
Textiles	14,793	16,001	16,278	16,724	17,660	19,341	20,210	20,166	20,366	19,744
Apparel	11,444	11,798	12,164	12,372	11,698	13,986	15,085	14,508	14,969	16,142
Wood products	13,081	13,782	14,275	14,757	15,430	15,390	15,853	15,986	15,274	16,006
Paper products	18,012	19,164	20,354	20,711	20,600	21,329	23,240	23,357	26,591	24,786
Chemicals	25,093	26,075	27,895	29,391	30,127	36,959	36,524	40,813	43,183	45,241
Rubber products	15,343	15,907	16,746	16,980	17,827	19,973	20,996	21,374	21,891	23,556
Plastics	15,768	16,710	17,465	18,163	19,888	19,187	21,252	22,820	23,429	23,020
Non-metallic mineral products	17,758	18,265	19,024	20,571	21,474	28,669	30,594	29,863	34,416	34,133
Basic metals	21,349	23,326	23,855	24,082	25,582	27,426	30,284	29,044	32,200	30,599
Fabricated metals	17,277	18,451	18,606	19,728	20,502	24,148	24,538	24,138	25,411	26,015
General machinery	20,644	23,007	23,870	23,907	24,763	29,093	32,604	34,257	37,092	36,321
Office, computing & precision machinery	22,398	26,349	24,910	29,496	27,876	22,177	22,823	25,037	24,159	25,862
Electrical machinery	17,193	18,597	20,410	20,972	22,387	19,207	21,746	21,907	22,944	23,312
Radio, tv & communication machinery	18,436	19,068	18,896	21,416	24,630	21,109	24,046	22,766	23,790	24,426
Motor vehicles	17,918	19,844	20,805	21,276	22,534	25,510	23,890	26,642	29,720	28,633
Furniture	12,750	13,071	14,266	14,179	14,797	15,141	16,507	16,839	18,530	18,455
7 excluded industries combined	15,925	16,671	17,672	19,008	19,035	23,120	27,159	27,629	27,935	29,148

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 3: Mean Shares of Paid Workers in Highly Paid Occupations in Medium-Large Plants with Viable Data (%)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	15	16	17	17	17	20	22	22	23	22
Food & beverages	16	16	18	16	17	23	25	26	25	24
Textiles	15	16	17	17	17	17	19	19	19	16
Apparel	8	10	11	10	16	9	9	10	9	9
Wood products	10	11	12	11	11	11	10	11	9	10
Paper products	15	16	17	17	17	19	20	22	24	21
Chemicals	24	26	27	28	27	33	33	35	36	34
Rubber products	13	14	15	14	14	15	16	16	15	16
Plastics	15	17	18	17	18	19	22	20	20	18
Non-metallic mineral products	15	16	18	16	17	22	22	21	26	24
Basic metals	18	21	22	21	20	26	25	27	30	26
Fabricated metals	16	18	19	19	19	20	20	21	22	20
General machinery	19	20	23	22	23	27	29	30	32	31
Office, computing & precision machinery	18	23	20	23	26	20	20	22	24	24
Electrical machinery	16	19	20	21	21	18	20	21	20	20
Radio, tv & communication machinery	16	20	22	22	23	20	23	23	22	23
Motor vehicles	17	19	20	18	18	20	20	22	24	22
Furniture	11	11	12	12	13	12	12	13	17	13
7 excluded industries combined	14	16	17	16	16	18	21	21	21	20

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling; highly paid occupations are (1) proprieters, business partners, (2) managers, professionals, executives, and (3) technicians, professionals.
Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 4: Mean Shares of Paid and Unpaid Workers with High Education in Medium-Large Plants with Viable Data (%)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	10	9	9	10	11	16	17	18	19	19
Food & beverages	8	7	7	7	8	17	17	19	19	19
Textiles	9	8	10	11	10	9	8	8	10	9
Apparel	5	4	5	5	6	5	5	5	5	4
Wood products	5	4	5	5	5	7	7	7	6	6
Paper products	12	11	12	13	13	16	15	17	18	16
Chemicals	19	17	19	20	22	28	29	31	32	34
Rubber products	9	8	8	10	9	11	10	9	10	10
Plastics	11	10	11	11	13	14	16	18	17	15
Non-metallic mineral products	9	8	9	9	10	19	19	19	25	21
Basic metals	14	13	13	14	15	18	17	18	20	18
Fabricated metals	12	10	10	11	11	16	16	17	18	18
General machinery	13	13	15	14	16	26	28	31	35	31
Office, computing & precision machinery	16	21	20	27	29	16	15	16	19	21
Electrical machinery	14	13	14	17	18	14	17	18	17	17
Radio, tv & communication machinery	16	15	18	19	21	16	19	18	18	20
Motor vehicles	13	12	14	13	13	15	14	19	20	18
Furniture	7	6	5	6	7	7	6	6	9	8
7 excluded industries combined	10	10	10	11	12	16	16	17	17	17

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling; high education is defined as education beyond the Malaysian Education Certificate Education (SPM), an exam taken by all students in the 5th year of secondary school (i.e., some level of vocational school, college, university, or graduate school).

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 5: Mean Shares of Paid and Unpaid Workers with Mid-level Education in Medium-Large Plants with Viable Data (%)

	Majority-local plants					MNE plants				
Industry	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
17 sample industries combined	30	29	29	29	30	36	39	39	39	39
Food & beverages	27	27	26	27	28	35	37	35	34	38
Textiles	30	34	33	32	34	32	34	40	36	38
Apparel	21	21	19	23	29	16	22	20	20	24
Wood products	19	19	19	19	19	17	22	21	22	21
Paper products	35	33	34	35	36	39	41	44	45	43
Chemicals	37	35	37	39	39	41	41	42	42	40
Rubber products	26	28	26	26	27	28	32	34	31	35
Plastics	34	32	31	30	32	35	42	41	40	38
Non-metallic mineral products	26	25	24	24	24	33	35	34	34	34
Basic metals	34	33	34	32	32	38	45	46	39	37
Fabricated metals	35	30	29	30	30	39	41	40	38	38
General machinery	36	38	37	37	38	39	41	40	40	40
Office, computing & precision machinery	47	45	49	40	38	44	43	42	48	47
Electrical machinery	42	39	39	41	41	34	43	41	45	45
Radio, tv & communication machinery	43	37	41	43	45	43	48	46	49	48
Motor vehicles	38	37	39	39	39	47	51	48	49	47
Furniture	28	24	22	25	26	20	24	20	24	21
7 excluded industries combined	29	29	30	31	32	38	38	38	37	39

Note: Plants with viable data are those with positive paid workers, output, worker compensation, and fixed assets; exluded industries are tobacco, leather & footwear, publishing, petroleum products, other transport equipment, miscellaneous manufacturing, and recycling; mid-level education is defined as successful completion of the Malaysian Education Certificate Education (SPM), an exam taken by all students in the 5th year of secondary school, but no further education..

Source: Author's compilations from micro data underlying Department of Statistics (2002, various years)

Appendix Table 6: MNE-Local Wage Differentials and Other Details from Estimates of Equation (1)

Industry,	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
independent variable,	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
indicator	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
17 SAMPLE INDUSTRIES COMBINED (36 industry dummies, 9 region dummies)												
LKE	0.0242	0.00	0.0329	0.00	0.0338	0.00	0.0183	0.00	0.0360	0.00	0.0367	0.00
LO	0.1071	0.00	0.1178	0.00	0.1187	0.00	0.1032	0.00	0.1229	0.00	0.1264	0.00
SH	0.0074	0.00	0.0070	0.00	0.0082	0.00	0.0037	0.00	0.0061	0.00	0.0074	0.00
S3	0.0064	0.00	0.0072	0.00	0.0060	0.00	0.0042	0.00	0.0064	0.00	0.0049	0.00
S2	0.0011	0.00	0.0011	0.00	0.0005	0.00	0.0006	0.00	0.0007	0.00	0.0001	0.20
SF	-0.0039	0.00	-0.0035	0.00	-0.0036	0.00	-0.0032	0.00	-0.0026	0.00	-0.0025	0.00
DF	0.0890	0.00	0.0809	0.00	0.0913	0.00	0.0749	0.00	0.0525	0.00	0.0658	0.00
Observations/R^2	21,671	0.56	26,855	0.57	34,491	0.56	21,671	0.55	26,855	0.57	34,491	0.56
Breusch-Pagan test	-	-	-	-	-	-	8,253.70	0.00	10,202	0.00	14,135	0.00
FOOD & BEVERAGES (4 industry dummies, 9 region dummies)												
LKE	0.0198	0.00	0.0319	0.00	0.0305	0.00	0.0150	0.00	0.0340	0.00	0.0325	0.00
LO	0.1354	0.00	0.1378	0.00	0.1382	0.00	0.1323	0.00	0.1345	0.00	0.1338	0.00
SH	0.0099	0.00	0.0072	0.00	0.0078	0.00	0.0041	0.00	0.0047	0.00	0.0058	0.00
S3	0.0069	0.00	0.0090	0.00	0.0088	0.00	0.0048	0.00	0.0084	0.00	0.0079	0.00
S2	0.0011	0.00	0.0016	0.00	0.0014	0.00	0.0003	0.45	0.0011	0.00	0.0008	0.01
SF	-0.0025	0.00	-0.0030	0.00	-0.0029	0.00	-0.0031	0.00	-0.0034	0.00	-0.0030	0.00
DF	0.1069	0.00	0.1154	0.00	0.1176	0.00	0.1104	0.00	0.1241	0.01	0.1075	0.00
Observations/R^2	3,832	0.61	4,788	0.61	6,007	0.61	3,832	0.59	4,788	0.61	6,007	0.00
Breusch-Pagan test	-	-	-	-	-	-	1,796.30	0.00	2,229.23	0.00	3,081.40	0.00
TEXTILES (2 industry dummies, 9 region dummies)												
LKE	0.0350	0.01	0.0380	0.00	0.0353	0.00	0.0028	0.90	0.0274	0.11	0.0262	0.06
LO	0.0904	0.00	0.1010	0.00	0.1112	0.00	0.0988	0.00	0.1196	0.00	0.1341	0.00
SH	0.0089	0.00	0.0131	0.00	0.0134	0.00	0.0040	0.03	0.0129	0.00	0.0131	0.00
S3	0.0053	0.00	0.0062	0.00	0.0045	0.00	0.0041	0.04	0.0071	0.00	0.0039	0.04
S2	0.0015	0.01	0.0015	0.00	0.0005	0.42	0.0012	0.08	0.0011	0.04	0.0002	0.74
SF	0.0009	0.18	0.0010	0.10	0.0011	0.04	-0.0008	0.43	0.0004	0.61	0.0000	0.99
DF	0.1084	0.00	0.1155	0.00	0.1196	0.00	0.0269	0.67	0.0804	0.07	0.0627	0.25
Observations/R^2	624	0.47	735	0.56	950	0.53	624	0.43	735	0.55	950	0.52
Breusch-Pagan test	-	-	-	-	-	-	210.31	0.00	332.09	0.00	361.16	0.00

Appendix Table 6 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
APPAREL (no industry dummies, 9 region dummies)												
LKE	0.0141	0.10	0.0290	0.00	0.0328	0.00	0.0092	0.32	0.0388	0.00	0.0383	0.00
LO	0.1010	0.00	0.1404	0.00	0.1408	0.00	0.0984	0.00	0.1541	0.00	0.1521	0.00
SH	0.0104	0.00	-0.0062	0.00	-0.0035	0.08	0.0048	0.02	-0.0032	0.17	-0.0004	0.85
S3	0.0097	0.00	0.0051	0.03	0.0028	0.15	0.0032	0.23	0.0038	0.13	0.0004	0.85
S2	-0.0006	0.30	0.0003	0.60	-0.0007	0.20	-0.0002	0.79	-0.0001	0.86	-0.0011	0.06
SF	-0.0019	0.01	-0.0012	0.11	-0.0005	0.43	-0.0025	0.01	-0.0003	0.81	0.0001	0.96
DF	0.0764	0.01	0.0433	0.15	0.0499	0.04	0.0922	0.03	0.0551	0.26	0.1138	0.01
Observations/R^2	827	0.41	1,110	0.44	1,471	0.41	827	0.40	1,110	0.43	1,471	0.40
Breusch-Pagan test	-	-	-	-	-	-	157.27	0.00	224.05	0.00	369.58	0.00
WOOD PRODUCTS (no industry dummies, 9 region dummies)												
LKE	0.0340	0.00	0.0334	0.00	0.0350	0.00	0.0387	0.00	0.0416	0.00	0.0398	0.00
LO	0.0991	0.00	0.1102	0.00	0.1143	0.00	0.0793	0.00	0.1056	0.00	0.1096	0.00
SH	0.0109	0.00	0.0118	0.00	0.0127	0.00	0.0063	0.00	0.0064	0.09	0.0085	0.00
S3	0.0037	0.01	0.0045	0.00	0.0040	0.00	-0.0003	0.83	0.0073	0.00	0.0048	0.00
S2	0.0008	0.10	0.0013	0.00	0.0008	0.04	0.0005	0.39	0.0018	0.00	0.0008	0.07
SF	-0.0054	0.00	-0.0054	0.00	-0.0057	0.00	-0.0029	0.00	-0.0036	0.00	-0.0036	0.00
DF	0.0040	0.87	-0.0084	0.71	0.0047	0.82	0.0203	0.58	-0.0170	0.66	0.0047	0.89
Observations/R^2	2,173	0.43	2,508	0.45	3,286	0.45	2,173	0.41	2,508	0.43	3,286	0.44
Breusch-Pagan test	-	-	-	-	-	-	781.71	0.00	975.88	0.00	1,380.73	0.00
PAPER PRODUCTS (no industry dummies, 9 region dummies)												
LKE	0.0286	0.02	0.0444	0.00	0.0440	0.00	0.0307	0.00	0.0378	0.07	0.0410	0.02
LO	0.0769	0.00	0.0965	0.00	0.1072	0.00	0.0875	0.00	0.1197	0.00	0.1352	0.00
SH	0.0061	0.00	0.0065	0.00	0.0086	0.00	0.0023	0.06	0.0056	0.00	0.0087	0.00
S3	0.0038	0.00	0.0050	0.00	0.0033	0.01	0.0023	0.06	0.0051	0.00	0.0025	0.04
S2	0.0025	0.00	0.0021	0.00	0.0011	0.02	0.0011	0.06	0.0014	0.02	0.0004	0.49
SF	-0.0002	0.84	0.0008	0.36	0.0003	0.69	-0.0001	0.95	0.0007	0.54	0.0009	0.40
DF	0.0805	0.02	0.0661	0.03	0.0710	0.01	0.0715	0.15	0.0496	0.37	0.0206	0.68
Observations/R^2	758	0.57	927	0.47	1,195	0.47	758	0.44	927	0.46	1,195	0.46
Breusch-Pagan test	-	-	-	-	-	-	262.47	0.00	316.46	0.00	405.00	0.00

Appendix Table 6 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
CHEMICALS (1 industry dummy, 9 region dummies)												
LKE	0.0217	0.02	0.0183	0.05	0.0223	0.01	0.0090	0.38	0.0297	0.00	0.0219	0.03
LO	0.1635	0.00	0.1649	0.00	0.1627	0.00	0.1039	0.00	0.1317	0.00	0.1656	0.00
SH	0.0058	0.00	0.0086	0.00	0.0088	0.00	0.0007	0.54	0.0073	0.00	0.0079	0.00
S3	0.0044	0.00	0.0047	0.00	0.0042	0.00	0.0041	0.00	0.0043	0.00	0.0047	0.00
S2	0.0009	0.07	0.0007	0.11	0.0004	0.30	0.0016	0.02	0.0006	0.32	0.0000	0.98
SF	-0.0049	0.00	-0.0037	0.00	-0.0034	0.00	-0.0038	0.00	-0.0029	0.01	-0.0028	0.00
DF	0.0950	0.00	0.0858	0.00	0.0958	0.00	0.0679	0.05	0.0858	0.01	0.0906	0.00
Observations/R^2	1,268	0.42	1,524	0.49	1,932	0.51	1,268	0.39	1,524	0.49	1,932	0.51
Breusch-Pagan test	-	-	-	-	-	-	357.02	0.00	482.24	0.00	658.86	0.00
RUBBER PRODUCTS (no industry dummies, 9 region dummies)												
LKE	0.0021	0.64	0.0055	0.23	0.0059	0.11	0.0030	0.52	0.0077	0.13	0.0096	0.04
LO	0.0870	0.00	0.0964	0.00	0.1017	0.00	0.0897	0.00	0.1196	0.00	0.1212	0.00
SH	0.0091	0.00	0.0122	0.00	0.0138	0.00	0.0055	0.01	0.0124	0.00	0.0131	0.00
S3	0.0071	0.00	0.0063	0.00	0.0045	0.00	0.0035	0.01	0.0055	0.00	0.0021	0.14
S2	0.0010	0.03	0.0010	0.02	0.0001	0.74	0.0008	0.09	0.0008	0.09	0.0002	0.70
SF	-0.0060	0.00	-0.0049	0.00	-0.0053	0.00	-0.0041	0.00	-0.0023	0.00	-0.0027	0.00
DF	0.2259	0.00	0.2076	0.00	0.2195	0.00	0.1470	0.00	0.1121	0.00	0.1215	0.00
Observations/R^2	973	0.46	1,160	0.47	1,545	0.44	973	0.43	1,160	0.44	1,545	0.42
Breusch-Pagan test	-	-	-	-	-	-	353.27	0.00	530.17	0.00	735.86	0.00
PLASTICS (no industry dummies, 9 region dummies)												
LKE	0.0191	0.05	0.0313	0.00	0.0349	0.00	0.0106	0.18	0.0304	0.00	0.0362	0.00
LO	0.1062	0.00	0.1099	0.00	0.1106	0.00	0.0968	0.00	0.1106	0.00	0.1129	0.00
SH	0.0100	0.00	0.0115	0.00	0.0130	0.00	0.0059	0.00	0.0097	0.00	0.0123	0.00
S3	0.0058	0.00	0.0053	0.00	0.0043	0.00	0.0044	0.00	0.0053	0.00	0.0039	0.00
S2	0.0005	0.16	0.0005	0.08	-0.0003	0.34	0.0005	0.14	0.0001	0.89	-0.0005	0.12
SF	-0.0035	0.00	-0.0029	0.00	-0.0029	0.00	-0.0035	0.00	-0.0024	0.00	-0.0018	0.00
DF	0.0798	0.00	0.0749	0.00	0.0906	0.00	0.0579	0.02	0.0266	0.28	0.0409	0.09
Observations/R^2	1,842	0.49	2,375	0.50	3,090	0.49	1,842	0.48	2,375	0.50	3,090	0.49
Breusch-Pagan test	-	-	-	-	-	-	441.84	0.00	621.59	0.00	842.48	0.00

Appendix Table 6 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
NON-METALLIC MINERAL PRODUCTS (1 industry dummy, 9 region dummies)												
LKE	0.0425	0.00	0.0518	0.00	0.0550	0.00	0.0324	0.00	0.0799	0.00	0.0697	0.00
LO	0.1420	0.00	0.1457	0.00	0.1429	0.00	0.1530	0.00	0.1337	0.00	0.1369	0.00
SH	0.0035	0.00	0.0049	0.00	0.0052	0.00	0.0030	0.00	0.0051	0.00	0.0063	0.00
S3	0.0093	0.00	0.0090	0.00	0.0082	0.00	0.0059	0.00	0.0081	0.00	0.0061	0.00
S2	0.0007	0.22	0.0005	0.29	0.0006	0.23	0.0000	0.95	0.0007	0.16	0.0005	0.26
SF	-0.0041	0.00	-0.0031	0.00	-0.0029	0.00	-0.0031	0.00	-0.0008	0.35	-0.0007	0.41
DF	0.1077	0.00	0.0728	0.03	0.0845	0.01	0.0865	0.02	0.0142	0.71	0.0317	0.43
Observations/R^2	1,420	0.64	1,681	0.66	2,144	0.65	1,420	0.63	1,681	0.65	2,144	0.64
Breusch-Pagan test	-	-	-	-	-	-	730.87	0.00	862.07	0.00	1,227.31	0.00
BASIC METALS (2 industry dummies, 9 region dummies)												
LKE	0.0224	0.01	0.0226	0.00	0.0240	0.00	0.0391	0.00	0.0324	0.00	0.0424	0.00
LO	0.1036	0.00	0.1166	0.00	0.1138	0.00	0.0867	0.00	0.1290	0.00	0.1190	0.00
SH	0.0035	0.00	0.0060	0.00	0.0066	0.00	0.0013	0.19	0.0050	0.00	0.0058	0.00
S3	0.0077	0.00	0.0069	0.00	0.0066	0.00	0.0043	0.00	0.0054	0.00	0.0051	0.00
S2	0.0021	0.00	0.0009	0.06	0.0010	0.02	0.0008	0.06	-0.0005	0.40	-0.0002	0.60
SF	-0.0025	0.01	-0.0018	0.05	-0.0019	0.01	-0.0010	0.47	-0.0001	0.97	0.0004	0.75
DF	0.1023	0.00	0.1153	0.00	0.1124	0.00	0.0436	0.28	0.0477	0.19	0.0462	0.19
Observations/R^2	833	0.45	1,080	0.47	1,368	0.47	833	0.42	1,080	0.45	1,368	0.44
Breusch-Pagan test	-	-	-	-	-	-	327.12	0.00	452.76	0.00	666.47	0.00
METAL PRODUCTS (1 industry dummy, 9 region dummies)												
LKE	0.0439	0.00	0.0381	0.00	0.0398	0.00	0.0321	0.01	0.0358	0.00	0.0380	0.00
LO	0.1140	0.00	0.1412	0.00	0.1433	0.00	0.1106	0.00	0.1468	0.00	0.1465	0.00
SH	0.0049	0.00	0.0050	0.00	0.0066	0.00	0.0028	0.00	0.0043	0.00	0.0063	0.00
S3	0.0078	0.00	0.0085	0.00	0.0066	0.00	0.0038	0.00	0.0062	0.00	0.0042	0.00
S2	0.0013	0.00	0.0015	0.00	0.0006	0.00	0.0009	0.01	0.0009	0.01	0.0003	0.44
SF	-0.0036	0.00	-0.0025	0.00	-0.0032	0.00	-0.0016	0.05	-0.0012	0.11	-0.0018	0.01
DF	0.0408	0.06	0.0316	0.12	0.0692	0.00	0.0597	0.06	0.0336	0.33	0.0743	0.03
Observations/R^2	1,849	0.51	2,591	0.53	3,232	0.51	1,849	0.49	2,591	0.52	3,232	0.50
Breusch-Pagan test	-	-	-	-	-	-	650.49	0.00	891.43	0.00	1,132.26	0.00

Appendix Table 6 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
GENERAL MACHINERY (2 industry dummies, 9 region dummies)												
LKE	0.0467	0.00	0.0480	0.00	0.0517	0.00	0.0250	0.03	0.0445	0.00	0.0503	0.00
LO	0.1000	0.00	0.1217	0.00	0.1244	0.00	0.0893	0.00	0.1285	0.00	0.1316	0.00
SH	0.0041	0.00	0.0031	0.04	0.0035	0.00	0.0028	0.01	0.0044	0.00	0.0034	0.01
S3	0.0061	0.00	0.0077	0.00	0.0071	0.00	0.0048	0.00	0.0051	0.00	0.0049	0.00
S2	0.0021	0.00	0.0026	0.00	0.0018	0.00	0.0013	0.03	0.0014	0.01	0.0011	0.03
SF	-0.0052	0.00	-0.0044	0.00	-0.0052	0.00	-0.0026	0.02	-0.0028	0.01	-0.0028	0.01
DF	0.0911	0.02	0.0762	0.02	0.0755	0.01	0.1141	0.03	0.1282	0.01	0.1365	0.00
Observations/R^2	1,061	0.45	1,449	0.46	1,818	0.46	1,061	0.44	1,449	0.45	1,818	0.45
Breusch-Pagan test	-	-	-	-	-	-	491.55	0.00	555.95	0.00	750.83	0.00
OFFICE, COMPUTING & PRECISION MACHINERY (1 industry dummy, 8 region dummies)												
LKE	0.0215	0.32	0.0578	0.01	0.0696	0.00	0.0153	0.49	0.1146	0.00	0.1122	0.00
LO	0.0799	0.00	0.0807	0.00	0.0800	0.00	0.0820	0.00	0.0744	0.00	0.0856	0.00
SH	0.0078	0.00	0.0070	0.00	0.0055	0.00	0.0032	0.07	0.0031	0.15	0.0018	0.42
S3	0.0074	0.00	0.0088	0.00	0.0096	0.00	0.0090	0.00	0.0101	0.00	0.0096	0.00
S2	0.0011	0.17	0.0011	0.16	0.0016	0.01	0.0006	0.25	0.0002	0.80	0.0008	0.20
SF	-0.0018	0.08	-0.0014	0.17	-0.0018	0.03	-0.0012	0.32	-0.0004	0.81	-0.0013	0.31
DF	-0.0140	0.78	-0.0503	0.29	-0.0273	0.51	0.0047	0.92	-0.0234	0.71	-0.0379	0.45
Observations/R^2	322	0.48	376	0.53	492	0.52	322	0.45	376	0.50	492	0.49
Breusch-Pagan test	-	-	-	-	-	-	64.66	0.00	102.07	0.00	147.83	0.00
ELECTRICAL MACHINERY (5 industry dummies; 9 region dummies)												
LKE	0.0132	0.17	0.0189	0.01	0.0175	0.01	0.0175	0.12	0.0260	0.02	0.0206	0.02
LO	0.1047	0.00	0.1019	0.00	0.1048	0.00	0.1062	0.00	0.0906	0.00	0.1026	0.00
SH	0.0067	0.00	0.0080	0.00	0.0112	0.00	0.0038	0.00	0.0074	0.00	0.0099	0.00
S3	0.0040	0.00	0.0042	0.00	0.0014	0.13	0.0022	0.11	0.0051	0.00	0.0020	0.08
S2	0.0005	0.29	0.0006	0.14	0.0001	0.89	0.0001	0.85	0.0004	0.48	-0.0007	0.12
SF	-0.0052	0.00	-0.0048	0.00	-0.0047	0.00	-0.0048	0.00	-0.0046	0.00	-0.0043	0.00
DF	0.1020	0.00	0.0903	0.00	0.1126	0.00	0.0604	0.03	0.0789	0.02	0.0862	0.00
Observations/R^2	928	0.57	1,112	0.59	1,458	0.59	928	0.55	1,112	0.59	1,458	0.59
Breusch-Pagan test	-	-	-	-	-	-	296.28	0.00	424.48	0.00	648.91	0.00

Appendix Table 6 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
RADIO, TV & COMMUNICATION MACHINERY (1 industry dummy, 9 region dummies)												
LKE	0.0394	0.00	0.0328	0.00	0.0418	0.00	0.0366	0.01	0.0351	0.00	0.0472	0.00
LO	0.0810	0.00	0.0825	0.00	0.0865	0.00	0.0820	0.00	0.0850	0.00	0.0905	0.00
SH	0.0074	0.00	0.0064	0.00	0.0072	0.00	0.0053	0.00	0.0063	0.00	0.0065	0.00
S3	0.0064	0.00	0.0082	0.00	0.0067	0.00	0.0051	0.00	0.0069	0.00	0.0060	0.00
S2	-0.0004	0.39	-0.0006	0.18	-0.0002	0.53	0.0003	0.56	-0.0002	0.79	0.0003	0.60
SF	-0.0031	0.00	-0.0032	0.00	-0.0034	0.00	-0.0036	0.00	-0.0032	0.00	-0.0029	0.00
DF	0.0754	0.00	0.0633	0.00	0.0460	0.01	0.0719	0.01	0.0435	0.09	0.0284	0.27
Observations/R^2	962	0.57	1,174	0.58	1,594	0.57	962	0.56	1,174	0.58	1,594	0.57
Breusch-Pagan test	-	-	-	-	-	-	246.17	0.00	335.93	0.00	439.06	0.00
MOTOR VEHICLES (no industry dummies, 9 region dummies)												
LKE	-0.0032	0.83	0.0144	0.14	0.0171	0.06	-0.0194	0.62	0.0154	0.28	0.0250	0.05
LO	0.0968	0.00	0.0902	0.00	0.0925	0.00	0.0911	0.00	0.0943	0.00	0.0916	0.00
SH	0.0089	0.00	0.0118	0.00	0.0127	0.00	0.0058	0.01	0.0104	0.00	0.0108	0.00
S3	0.0053	0.03	0.0029	0.09	0.0018	0.28	0.0042	0.06	0.0028	0.17	0.0010	0.64
S2	-0.0016	0.07	0.0001	0.92	-0.0009	0.17	-0.0007	0.34	0.0009	0.18	-0.0001	0.92
SF	-0.0037	0.00	-0.0030	0.00	-0.0035	0.00	-0.0032	0.01	-0.0021	0.06	-0.0025	0.03
DF	0.1091	0.04	0.1361	0.01	0.1617	0.00	0.1267	0.05	0.1270	0.06	0.1605	0.01
Observations/R^2	472	0.42	590	0.45	742	0.43	472	0.40	590	0.44	742	0.42
Breusch-Pagan test	-	-	-	-	-	-	112.50	0.00	178.89	0.00	212.89	0.00
FURNITURE (no industry dummies, 9 region dummies)												
LKE	0.0040	0.69	0.0294	0.00	0.0278	0.00	0.0062	0.00	0.0346	0.00	0.0359	0.00
LO	0.0983	0.00	0.1092	0.00	0.1172	0.00	0.0876	0.00	0.1247	0.00	0.1339	0.00
SH	0.0097	0.00	0.0119	0.00	0.0153	0.00	0.0033	0.00	0.0118	0.00	0.0149	0.00
S3	0.0047	0.00	0.0057	0.00	0.0024	0.08	0.0041	0.00	0.0048	0.01	0.0012	0.48
S2	0.0009	0.14	0.0002	0.76	-0.0009	0.05	0.0010	0.00	0.0000	0.95	-0.0007	0.11
SF	-0.0027	0.00	-0.0024	0.00	-0.0038	0.00	-0.0029	0.00	-0.0016	0.04	-0.0034	0.00
DF	0.0993	0.00	0.1057	0.00	0.1090	0.00	0.1103	0.00	0.0690	0.03	0.0702	0.03
Observations/R^2	1,210	0.31	1,675	0.37	2,167	0.37	1,210	0.30	1,675	0.38	2,167	0.37
Breusch-Pagan test	-	-	-	-	-	-	198.44	0.00	341.38	0.00	520.06	0.00

Notes: robust standard errors (clustered by plant for random effects) are used to account for potential heteroscedasticity; coefficients from estimates of equation (1) that also include year, industry, and region dummies (see text for defintions); full estimation results available from the author.

Chapter 3: Exporting, Education, and Wage Differentials between Foreign Multinationals and Local Plants in Indonesian and Malaysian Manufacturing

3.1. Introduction

Until recently, Lipsey and Sjöholm's (2004a) study of manufacturing plants in Indonesia in 1996 was one of the few studies of wage differentials between foreign multinational enterprises (MNEs) and local plants, which accounted for the fact that MNEs tend to hire relatively larger shares of workers with higher education.[1] They found that MNEs paid significantly higher wages than local, private plants even after accounting for the educational background of the plant's work force and other plant-level characteristics, and that these conditional wage differentials were larger for white-collar workers than for blue-collar workers. Recently, Ramstetter and Narjoko (2013) reexamined the 1996 evidence and added evidence for 2006, obtaining qualitatively similar results for both years when all manufacturing plants are combined in one sample, though industry-level evidence was weaker. In addition, similar evidence for Malaysian plants in 2000-2004 (Ramstetter 2013) also suggests the existence of positive, MNE-local wage differentials after accounting for both worker education and occupation, in addition to other plant characteristics, both when all industries are combined and at the industry level.

However, none of these studies account for the potentially important effect of a plant's export status on MNE-local wage differentials. As Athukorala and Devadason (2012, p. 1503) explain in their study of foreign labor's effect on Malaysian wages, "export-oriented firms generally operate under greater demand pressure compared to domestic-market oriented firms which enjoy both policy-induced and natural protection". Similarly, factor endowments-based

[1] These authors also examined other aspects of wage differentials and how they change over time in Lipsey and Sjöholm (2004b, 2005, 2006) and Sjöholm and Lipsey (2006).

theories of international trade imply that exporters are more likely to experience a tendency toward factor price equalization that non-exporters. In the case of relatively labor abundant economies like Indonesia and Malaysia, this would suggest that ratios of wages to capital costs should be higher in exporters than in non-exporters. Another body of literature emphasizes the importance of high entry costs into export networks, and there is evidence firms able to bear the costs of export entry are likely to increase their demand for skilled labor and pay relatively high wages as a result (Bernard and Jensen 1997).[2] However, none of these studies address the question of whether differences between exporters and non-exporters have differential effects on MNEs and local plants, and thus MNE-local wage differentials. The purpose of this study is thus to investigate whether MNE-local wage differentials differ between exporting plants and non-exporters.

The paper proceeds to review the existing literature in Section 2, and describe the data used and patterns revealed by key descriptive statistics, including unconditional MNE-local wage differentials in Section 3. Section 4 then reviews the evidence emerging from estimates of earnings equations, focusing on patterns of conditional MNE-local wage differentials. Finally, Section 5 concludes and offers suggestions for further research.

3.2. Literature Review and Methodology

As described in the introduction, when large samples of all manufacturing plants are used, previous studies have found that MNEs paid significantly higher wages than local, private plants in Indonesia in 1996 and 2006 (Lipsey and Sjöholm 2004a; Ramstetter and Narjoko 2013) and local (private and state-owned) plants in Malaysia in 2000-2004 (Ramstetter 2012a, 2013). These studies are distinguished from other studies of MNE-wage differentials by the

[2] Bernard et al. (2007) and Greenaway and Kneller (2007) summarize this literature and Sjöholm (2003) analyzes exporting networks in Indonesian plants in 1994-1997.

important fact that they account for the educational background and sex of a plant's workers, in addition to plant size, and a plant's capital intensity or a proxy.[3] The Malaysian studies also account for worker occupation, though this indicator is not available for Indonesia. The recent studies also analyzed up to 17 industry-level samples, finding significant differentials in most of the samples for Indonesia in 1996 and Malaysia, but insignificant differentials for most Indonesian industries in 2006. Ramstetter and Phan (2007) also found positive wage differentials between MNEs and local, private firms in Vietnam in 2000, 2002, and 2004, after accounting for firm's size, factor intensity, shares of technical workers, and female shares, both in the aggregate and in most industry group samples. In contrast, results from Lee and Nagaraj's (1995) sample of workers in the Klang Valley of Malaysia in 1991 suggest that foreign ownership of a plant had no significant effects on wages of either male or female workers, after several aspects of labor quality and other variables were accounted for.[4]

Other studies of Malaysia (Lim 1977), Thailand (Movshuk and Matsuoka-Movshuk 2006, Ramstetter 2004), and Venezuela and Mexico (Aitken et al 1996) have found that MNE-local wage differentials tended to persist after accounting for numerous plant- or firm-level characteristics, but were unable to account for labor force quality. There are also numerous studies of individuals that reveal significant returns to human capital, when measured by worker education, training, and experience, for example.[5] Still other studies focus on the gender wage gap, usually finding that females earn less than males, even after accounting for

[3] Material inputs per worker and/or energy per worker are common proxies for capital intensity because the coverage of Indonesia's capital data is poor. For example, 28-33 percent of sample plants in 12 large energy consuming industries did not have data on fixed assets in 1996 and 43-48 percent lacked these data for 2006 (Ramstetter and Narjoko 2012).

[4] Worker quality variables were education, experience, occupation, and training. Other variables were union membership, marital status, migration status, total hours worked, plant size, and plant export-orientation.

[5] See Purnastuti, et al (2013) and Sohn (2013) for recent evidence on Indonesia and Ismail and Haji Mat Zin (2003) for analysis of Malaysia.

education, experience, and other determinants of earnings.[6]

There is thus substantial previous evidence that both plant ownership and worker quality have important influences on worker earnings. It is clear that relatively well educated, experienced, and well-trained workers generally expect relatively high returns to their work efforts. Firms or plants hiring high-quality workers usually expect relatively high productivity and offer commensurate compensation. Correspondingly, the primary reason that MNEs pay higher wages than local plants is probably the well documented tendency for MNEs to be relatively technology- or skill-intensive compared to non-MNEs (Caves 2007; Dunning 1993; Markusen 2002). However, even relatively sophisticated studies like Lipsey and Sjöholm (2004a) fail to fully account for MNE-local differences in labor quality. For example, in addition to differences in worker education, there may be important differences in worker occupation, training, background, and experience, which are often accounted for in studies of wage determination among individuals, but are not measured in plant-level data. In this study of Indonesia and Malaysia, for example, it is possible to account for differences in worker education and sex in both economies and worker occupation in Malaysia, but there is no information on worker background (e.g., race, nationality), experience, or training.

Other reasons for MNE-local differentials are perhaps less clear, but there are at least three important possibilities. First, there is substantial evidence that MNEs often find it difficult to identify and retain suitably qualified workers. For example, in 1998, securing adequate quantity and quality of labor was the third most common of 27 possible problems for Japanese affiliates operating in the ASEAN-4 (the four largest developing economies in the Association of Southeast Asian Nations: Indonesia, Malaysia, the Philippines, and Thailand),

[6] In addition to the study of plant-level data from Lipsey and Sjöholm (2004a), studies of individuals also provide evidence of a substantial gender pay gap in Indonesia (Feridhanusetyawan et al. 2001; Pirmana 2006). For evidence on Malaysia, see Chapman and Harding (1985), Lee and Nagaraj (1995), Milanovic (2006), and Schafgans (2000).

this problem being cited by 8.5 percent of these MNEs (Japan, Ministry of Economy, Trade and Investment 2001, pp. 536-537).[7] Other surveys also indicated that securing labor supply was the third most frequently cited of 14 investment motives of Japanese affiliates in Indonesia and Malaysia.[8] Correspondingly, many of the aforementioned studies suggest that MNEs may pay relatively high wages to secure or retain labor.

Second, workers in host economies are often relatively familiar with management practices in local firms and may therefore be relatively reluctant to work for MNEs that often use less familiar management styles. This may lead them to demand a premium for working in the relatively unfamiliar MNE environment. Unfortunately, there is relatively little empirical evidence on this point, though many studies mention it and there have been well-documented cases where prominent MNEs from Japan (Guerin 2002) and Korea (Hwan 2011), for example, have been accused of labor rights violations in Indonesia. Correspondingly, one gets the impression that related bad press may have made some Indonesian workers reluctant to work for MNEs. On the other hand, recent surveys of university graduates suggest that MNEs are actually among the more popular employers for educated workers in Malaysia.[9]

Third, MNEs are often hypothesized to have important firm-specific assets in relatively large amounts compared to non-MNEs.[10] These firm-specific assets are generally intangible,

[7] The most commonly cited problems were (1) competition for local product markets (11.2 percent and (2) political instability (8.6 percent).

[8] Securing labor supply was cited by being cited by 16 percent of replying firms operating in Indonesia in 1996 and 13 percent in 2006, as well as 11-13 percent of replying firms operating in Malaysia during 2000-2004 (Toyo Keizai, various years). The most commonly cited motives were (1) development of local markets (25 percent of Indonesian affiliates in 1996 and 24 percent in 2006; 21-31 percent of Malaysian affiliates in 2000-2004) and (2) strengthening of international competitiveness (19 percent of Indonesian affiliates in 1996 and 34 percent in 2006; 21-31 percent of Malaysian affiliates in 2000-2004).

[9] For example, seven of the top 10 employers in 2008 were foreign companies in Malaysia (http://malaysias100.com/media/foreign-firms-the-favorite).

[10] Some theorists (especially Dunning) view the possession of firm-specific assets or ownership advantages as a key necessary condition for a firm to become an MNE (in addition to internalization and location advantages). Other theorists (Buckley and Casson 1992;

and many of them are related worker quality. However, even when an MNE's firm-specific assets are not directly related to worker skills, they may facilitate higher worker productivity by improving a firm's marketing and management, for example. In other words, the MNE's possession of firm-specific assets has the potential to make workers more productive in MNEs than in non-MNEs, even if labor quality is identical in MNEs and non-MNEs. In such cases, MNEs may find it profitable to pay relatively high wages to compensate for their relatively high productivity, especially when the ability to utilize firm-specific assets is related to workers' firm-specific experience or motivation, for example.

Partially reflecting differences in firm-specific assets, MNE-local wage differentials are thought to result from differences in other plant-level characteristics that might affect labor productivity and/or wages. For example, much of the literature reviewed above suggests that firms or plants which are relatively large or capital- (or input-) intensive often pay relatively high wages and have relatively high labor productivity. In addition, location and industry affiliation are also found to have important influences on the wage levels in firms or plants.

As indicated in the introduction, the literature also suggests that exporters have to incur sunk costs related to the creation of export networks and related firm-specific assets, which are similar to the firm-specific assets possessed by MNEs (Bernard and Jensen 1997; Bernard, et al., 2007; Greenaway and Kneller 2007). Sjöholm (2003) provides evidence on this point for Indonesian exporters. However, distinguishing the effects of foreign ownership and exporting on wages is not straightforward because the possession of similar sets of firm-specific assets means that MNEs have a strong tendency to be exporters and vice versa.

Casson 1987; Rugman 1980, 1985) dispute this view, choosing instead to emphasize the role of internalization as the key distinguishing characteristic between MNEs compared to non-MNEs. However, the important point is that all agree that MNCs tend to possess these kinds of firm-specific assets in relatively large amounts.

3.3. Data, Unconditional Wage Differentials, and Differences in Worker Education

This analysis is based on plant-level data underlying Indonesia's industrial censuses of medium-large plants (20 or more employees) in 1996 and 2006 as well as Malaysia's census of manufacturing plant activity in 2000 (Department of Statistics 2002) and smaller surveys of stratified samples for 2001-2004 (Department of Statistics various years). Indonesia also conducts annual surveys but they are less comprehensive than the censuses with particularly large differences in coverage for years surrounding 2006. Annual surveys also exclude key data on worker education. Consistent with definitions in the Malaysian data MNEs are defined as plants with foreign ownership shares of 50 percent or larger.[11]

Small plants with fewer than 20 paid workers are dropped from the Malaysian samples mainly because it is more meaningful to limit analyses of MNE-local wage differentials to medium-large plants than to include small, predominately local plants, in such comparisons. Dropping small plants also has the important advantages of making samples from the census and annual surveys consistent and eliminating most outliers (Ramstetter 2013, p. 7). For Indonesia, plants with fewer than 20 paid workers and low values of output per worker or value added per worker (suggesting large, negative profits and/or wage levels well below the minimum wage) were dropped from the samples.[12] The exclusion of these plants removes most outliers and simplifies the interpretation of MNE-local differentials because, as in

[11] The Malaysian data identify three types of firms with foreign shares above 50 percent, below 50 percent, and exactly equal to 50 percent. 50-50 joint ventures are usually controlled by the foreign partner and therefore considered to be majority-foreign plants. This cutoff is higher than the standard one for defining MNEs (foreign shares of 10% or more). Previous analysis of Indonesia has also distinguished state-owned enterprises (SOEs) and local, private plants, but this paper compares MNEs with all local plants because SOEs are not identified in the Malaysian data. In Indonesia, SOEs usually paid higher wages than private plants and MNE-local wage differentials were smaller than MNE-private differentials.

[12] The value added per worker cutoff was 7.9 percent of the national average (including small plants; Asian Development Bank 2013) but only 4.5 percent of the published average for medium-large plants (BPS-Statistics various years) in 1996. In 2006 these ratios were 6.5 percent and 4.5 percent, respectively, but excluded plants accounted for a larger share of the overall total in 2006 (19 percent) than in 1996 (15 percent).

Malaysia, MNEs were generally large, whereas excluded plants were predominately small, local, private plants (Ramstetter and Narjoko 2013, p. 9).

For Malaysia and Indonesia in 2006, industry definitions use revision 3 of the International Standard Industrial Classification (ISIC), but 1996 definitions for Indonesia in 1996 use revision 2. Thus, caution is necessary when interpreting industry-level trends in Indonesia.[13] The analysis also excludes five relatively small industries with few MNEs, heterogeneous definitions, and/or heavy government regulation.[14] In order to insure sufficient samples of both exporters and non-exporters, and to include competing plants in the same industry, 9 of the 11 sample industries are defined at the 2-digit level of revision 3 of the ISIC or as combinations of 2-digit categories, while rubber and plastics are defined at the 3-digit level because they are relatively large industries in both economies. The 11 sample industries accounted for 95 percent of paid employees in all Malaysian manufacturing plants meeting sample criteria and 90-91 percent in Indonesia (Table 1). This measure of sample coverage was slightly higher for exporters than non-exporters.

In the 11 sample industries, paid employment in exporters exceeded paid employment in non-exporters in Malaysia and in Indonesia in 1996, but this pattern was reversed in Indonesia in 2006 (Table 1). In Malaysia, the largest employers were exporters in electronics-related machinery (23 percent of the total for sample industries), followed distantly by non-exporters in the same industry, exporters in the wood group, and non-exporters in wood, non-exporters in the food group, and exporters in the textile group; shares of other groups were all 4 percent of the total or less. In Indonesia, exporters and non-exporters in the textiles group were the

[13] It is impossible to construct a precise correspondence between the two revisions, because several detailed categories (i.e., at the 5- or 4-digit level) in one classification are split among detailed categories in the other classification; see Appendix Table 5 for the detailed definitions.
[14] Four industries (tobacco, printing and publishing, petroleum products, and recycling) had relatively few MNEs in one or both economies while miscellaneous manufacturing is heterogeneously defined. Printing and publishing have also been closely regulated.

largest employers in both years (23 and 12 percent of the sample total, respectively, in 1996; 18 and 15 percent, respectively, in 2006). In 1996, these groups were followed by exporters in wood, non-exporters in food, exporters in food, and non-exporters in wood; no other group accounted for more than 3 percent of the total. In 2006, non-exporters in food, exporters in wood, exporters in food, and non-exporters in wood followed, and again no other group had a share over 3 percent. In other words, food, textiles, and wood were relatively large employers in both economies and electronics-related machinery was very large in Malaysia, but not in Indonesia. Both exporters and non-exporters tended to be large in most of these industries but exporters in food and non-exporters textiles were exceptions in Malaysia.

MNE shares of paid employment were substantially higher for exporters than non-exporters in both economies (53 vs. 25 percent in Malaysia and 21 or 34 percent vs. 8 or 14 percent in Indonesia, Table 1). This reflects the aforementioned tendency for MNEs to be exporters and vice versa. MNEs and exports accounted for larger shares of manufacturing in Malaysia than in Indonesia or most other Asian economies since the 1970s (Ramstetter 1998, 2012b), partially because the Malaysia has actively promoted exports and MNE investment, and because Malaysia has always been a relatively small, open economy.

Although Indonesia also encouraged investment by MNEs, it has depended far less on trade and MNEs in manufacturing, partially because it is much larger (especially in terms of population) and because trade policy emphasized import substitution through the mid-1980s. The shift to export promotion after 1985 was contributed to substantial, subsequent increases in exports and MNE shares through the mid-1990s (Hill 2000, ch. 5, 6, 8; Takii and Ramstetter 2005). The financial crisis that broke in late 1997 led to a large contraction in 1998 and created severe financial distress for many local companies. As a result, many local partners were forced to sell their stakes in joint ventures with MNEs. Declines in asset prices and the value of the rupiah created a fire sale, which also encouraged new investments by

foreign MNEs. In addition, relaxed restrictions on foreign ownership shares instituted in the mid-1990s were implemented more effectively after the crisis. As a result, MNEs with large foreign ownership shares expanded rapidly during 1996-2006.[15] The growth of paid employment was particularly rapid in MNE non-exporters (149 percent for the 11 sample industries) compared to MNE exporters (46 percent) or local plants (16 percent for non-exporters, -23 percent for exporters; Table 1 calculations).

Although MNEs have accounted for larger shares of Malaysian manufacturing than non-MNEs, unconditional MNE-local wage differentials were smaller in Malaysia than in Indonesia (Table 2), Differentials also declined in Indonesia during 1996-2006, both for exporters and for non-exporters. When all 11 sample industries are combined, MNE-local wage differentials were also smaller for exporters than non-exporters, and the gap between the two groups was relatively small for Indonesia in 2006 (58 vs. 74 percent) and Malaysia (31 vs. 44 percent) compared to Indonesia in 1996 (89 vs. 220 percent). This pattern is also observed at the industry level with MNE-local wage differentials being smaller than corresponding differentials for non-exporters in 10 of the 11 Indonesian industries in both years (rubber in 1996 and chemicals in 2006 were exceptions). In Malaysia, differentials were smaller in exporters all but three industries (wood, chemicals, and transportation machinery), but the gap between exporter and non-exporters was small in another two (textiles and electronics-related manufacturing).

In 1996, MNE-local wage differentials were 33 percent or higher in all 11 industries for Indonesia's non-exporters and in 10 industries for Indonesia's exporters, wage differentials exceeded this level in only seven industries for non-exporters and five for exporters in 2006 (Table 2). In Malaysia, similarly large wage differentials were observed in six industries for

[15] MNEs with foreign ownership shares of 90 percent or more accounted for only 6.1 of paid employment in all manufacturing plants in 1996, but this share increased sharply to 16 percent in 2006 (Ramstetter and Narjoko 2013, p. 24).

non-exporters but only four for exporters. In other words, unconditional wage differentials were often smaller at the industry level than when all 11 industries were combined. On the other hand, unconditional wage differentials were never negative for either exporters or non-exporters in these 11 industries.

Table 2 also illustrates the strong correlation between MNE-local wage differentials and corresponding differentials in the shares of workers with tertiary education among the 11 sample industries. Correlations were 0.84 or higher for both exporters and non-exporters in Malaysia and for non-exporters in Indonesia in 2006. The correlation was also relatively strong for non-exporters in Indonesia in 1996 (0.71), but weaker for Indonesian exporters in 1996 (0.62) and 2006 (0.51). As MNE theory suggests, shares of workers with tertiary education tended to be higher in MNEs, but there were a few industries in which they were higher in local plants. Thus, when examining MNE-local wage differentials, it is clearly important to account for how worker education and other plant characteristics affect wages.

3.4. Results of Estimating Earnings Equations

In order to determine whether MNE-local wage differentials can be explained by differences in worker education and other plant characteristics, and whether remaining conditional differentials vary between exporters and non-exporters, this paper estimates earnings equations similar to those in Lipsey and Sjöholm (2004a) separately for exporters and non-exporters. The equations account for the influences of worker education (and occupation for Malaysia) and sex, plant size, capital (Malaysia) or energy (Indonesia) per worker, location, and industry affiliation, as well as MNE ownership.

$$LCE = a0 + a1(LKE) + a2(LO) + a3(SH) + a4(S4) + a5(S3) + a6(S2) + a7(SF) + a8(DF) \quad (1)$$

where
LCE=log of compensation per employee (value)

LKE=log of fixed assets (Malaysia) or energy (Indonesia) per employee (value)
LO=plant size, measured as the log of output (value)
SH=share of paid workers in highly paid occupations (percent; Malaysia only)
S4=share of workers with some level of tertiary education (percent; includes unpaid workers for Malaysia)
S3=share of workers completing secondary education (percent includes unpaid workers for Malaysia)
S2=share of paid workers with junior high school education (percent, Indonesia only)[16]
SF=share of paid workers that are female (percent)
DF=dummy variable identifying MNE plants (=1 if MNE, 0 otherwise)

As in Table 2, the dependent variable is defined to include all labor compensation including bonuses, payments in kind, social insurance payments, and other compensation.[17] Reflecting previous discussion, plants which are relatively capital- energy-intensive, or have relatively high quality workforces are expected to pay relatively high wages. Thus, the coefficients *a1*, *a2*, *a3*, *a4*, *a5*, and *a6* are expected to be positive. The coefficient *a7* is expected to be negative because females generally earn less than their male counterparts. To the extent that there are MNE-local differences in shares of foreign workers, worker experience and training, data on which are unavailable, estimates of equation (1) may face an omitted variable problem. Finally, the coefficient *a8* is the conditional MNE-local wage differential that remains after accounting for capital or energy intensity, size, as well as worker occupation (Malaysia only), education, and sex, and can be compared to the unconditional differentials in Table 2.

Estimates of Equation (1) is use robust standard errors to account for heteroskedasticity and include region and industry dummies to account for industry- and region-specific factors

[16] Because workers with junior high education are relatively unskilled, this variable is omitted for Malaysia. Previous analysis for Indonesia (Lipsey and Sjöholm 2004a; Ramstetter 2013) also included the share of workers not finishing elementary school, but coefficients on this variable were often insignificant at the industry level and in 2006 so it is omitted here.
[17] For Malaysia, nominal wages are converted to real values with the consumer price index, while capital intensity and output are converted to real values using GDP deflators for 24 industries, which were generally defined at the 2- or 3-digit level (Department of Statistics 2011a). This is reasonable for wages and output, but not very accurate for capital because changes in asset prices are not reflected, but I know of no deflators for fixed assets in Malaysia. Indonesian values are measured in current rupiah.

affecting plant wages.[18] In addition to using industry dummies, estimates are also performed separately for 11 industry groups because allowing both intercepts and slopes, including the MNE-local differential, to vary among industries has an important impact on the results.

For Malaysia, plant-level panels are compiled and year dummies use the first year in as the base in samples for 2000-2004 and 2001-2004. Alternative samples are used to examine sensitivity of the results to inclusion of the census year and facilitate comparisons of a contemporaneous specification with a lagged specification, where all independent variables are lagged one year. Although simultaneity is probably not a large problem because wage levels are not likely to be an important determinant of the independent variables, the lagged specification is less likely to be affected by simultaneity issues and provides an important robustness check.[19] Results of pooled ordinary least squares (OLS) and random effects panel estimates are also compared to evaluate the robustness of the results to alternative econometric assumptions.[20] It is also possible to panelize the Indonesian data, but combining

[18] Indonesia dummies are generally defined at the 3-digit level of ISIC revision 2 for Indonesia in 1996 and revision 3 for Indonesia in 2006 and for Malaysia, though a few categories had to be combined to avoid collinearity with *DF* (351 and 352 for Indonesia in 2006, 242 and 243 for Malaysia); because revision 2 is less detailed, especially in the machinery industries, there are relatively few dummies for Indonesia in 1996. Industry dummies are omitted from industry-level estimates when industries are defined at the 3-digit level. In Indonesia, region dummies identify plants in West Java, Central Java (including Yogyakarta), East Java, and outside of Java (including Sumatra, Nusa Tenggara, Kalimantan, Sulawesi, Maluku, and Irian Jaya), using Jakarta as the reference region. For Malaysia, there are usually 9 region dummies using Kuala Lumpur as the reference region. Most are defined at the state level but states with relatively few plants, similar population densities, and nearby locations were combined (Perlis and Kedah, Kelantan, Terengganu, and Pahang, and finally Sabah, Sarawak, and Labuan). Please see Appendix Tables 3 and 4 for the exact number of industry and region dummies in each estimate.

[19] Ramstetter (2012a) also estimates an alternative, contemporaneous specification (see note above) for 2000-2002 and 2002-2004, in addition to 2000-2004. Results for the subperiods suggest that significant, MNE-local wage differentials were more common in the earlier period. This paper focuses on longer panels because they are thought to be relatively reliable and facilitate more meaningful estimates of the lagged specification.

[20] Results of the Breusch-Pagan test indicate that the null of no random effects can always be rejected at the 1 percent level or better, but I am primarily interested in checking the robustness of the key results to alternative econometric assumptions. It is also common to test if fixed effects estimates are econometrically preferable to random effects estimates, but if

1996 and 2006 in a single sample is not economically meaningful because there were large changes in many plants (e.g., changes in ownership as discussed above) after the financial crisis. Correspondingly, Indonesian estimates are performed in cross sections only.

Almost all estimates for all 11 industries combined yielded expected results for both countries (Tables 3, 4). Coefficients on capital or energy intensity, size, tertiary shares, and secondary shares were positive and highly significant at the 1 percent level with one exception; the coefficient on secondary shares in random effects estimates of the contemporaneous specification for 2000-2004 for Malaysia. Reflecting the tendency for wages to increase with worker education levels, coefficients on tertiary shares were substantially larger than coefficients on secondary shares in both countries and both of these coefficients were larger than the coefficient on junior high shares in Indonesia. Coefficients on shares of highly paid workers in Malaysia and workers with junior high education in Indonesia were also positive and highly significant, while coefficients on female share were negative and highly significant. The MNE-local differential was also positive and highly significant in all estimates, similar to results in previous studies discussed above. R^2 ranged between 0.44-0.48 for Indonesia and 0.50-0.63 for Malaysia, indicating that the models described the variation in plant-level wages reasonably well.

Results indicated substantial differences in several slope coefficients for exporters and non-exporters in both countries (Tables 3-4). Most importantly, the MNE-local differential was somewhat larger among exporting plants in Malaysia (8.9-9.2 vs. 6.2-7.5 percent if pooled OLS estimates are used; 7.2-7.8 vs. 4.7-6.7 percent if random effects estimates are used) and in Indonesia in 2006 (12 vs. 5.8 percent). MNE-local differentials were larger for Indonesia in 1996, but the differential was smaller for exporters (24 vs. 32 percent). In short, results from

---

fixed effects estimates are used, the coefficient *a8* measures the effects of changes in plant ownership on wages, not the MNE-local wage differential which is the focus of this analysis.

these large samples suggest that MNE-local wage differentials tended to be larger for exporters than non-exporters in Malaysia and Indonesia in 2006, but that this pattern was reversed for Indonesia in 1996.

There were also differences in other coefficients for exporters and non-exporters. For example, for Indonesian exporters, the coefficient on the tertiary share was 1.6 times larger than for non-exporters in 1996, but only 0.8 times as large in 2006 (Table 3). Corresponding Malaysian results resemble those for Indonesia in 1996, with coefficients for exporters being 1.3-1.6 times larger for exporters in pooled OLS estimates and 1.1-1.5 times larger in random effects estimates (Table 4). The coefficient on the secondary share was also relatively low for Indonesian exporters in 2006 compared to 1996 (0.6 vs. 1.0 times non-exporter levels), but corresponding Malaysian coefficients were 1.1-1.4 times larger for exporters. On the other hand, the negative coefficient on the female share was always much larger in absolute value for exporters than non-exporters in Indonesia, but of similar magnitude for exporters and non-exporters in Malaysia.

Estimates of equation (1) for each of the 11 sample industries also yielded generally expected results for Malaysia, but results were weaker and more varied for Indonesia, especially in 2006 (see Appendix Tables 3 and 4 for details). For Indonesia, samples were under 100 for exporters in non-electric machinery (37 in 1996, 79 in 2006) and transportation machinery 66 and 98, respectively), the minimum R^2 was 0.18, and R^2 was under 0.30 in 2006 for exporters in four industries (rubber, plastics, metals, non-electric machinery and non-exporters in plastics). The coefficient on size was the only one which was significant at the standard 5 percent level with the expected sign in most estimates for both exporters and non-exporters in both years. Most estimates of coefficients on energy intensity and secondary shares were also significant in 10 or 11 of the industries for non-exporters, but only in a minority of industries for exporters. In contrast, coefficients on tertiary shares were significant

in under half of the estimates. Coefficients on female shares were significant in most industries in 1996, but in only about half 2006.

For Malaysia, the minimum sample size was 191 (transportation machinery, exporters), the minimum R^2 was 0.22, and R^2 was less than 0.40 in only two samples (exporters in textiles and non-exporters in chemicals). Moreover, coefficients on size, capital intensity, shares of highly paid workers, tertiary shares, and female shares were significant with the expected signs in three quarters or more of the 132 estimates.

Thus, the industry-level results paint a picture that often differs substantially from aggregate results, and this contrast is also seen in estimates of MNE-local differentials for both countries. For Indonesia, the most striking result is the relative lack of significant MNE-local differentials in 2006, which are observed in only two of the 11 industries, textiles and metals (Table 5). MNE-local differentials in these industries were substantially larger for exporters than non-exporters (16 vs. 7.5 percent and 20 versus 12 percent, respectively) and all of these differentials were larger than corresponding differentials observed when all 11 industries are combined. In other words, the results for all industries combined appear to have been dominated by plants in these two industries in 2006.

In 1996, industry-level, MNE-local differentials were more often significant (Table 5). There were five industries where differentials were significant for both exporters and non-exporters (food and beverages, chemicals, plastics, metals, and electronics-related machinery). In all five of these industries, differentials were larger for non-exporters than for exporters, with the largest gap observed in plastics (54 vs. 23 percent) and smallest in chemicals (53 vs. 43 percent). On the other hand, there were three industries in which MNE-local differentials were significant for exporters (textiles, wood, and rubber) but insignificant for local plants. In short, the results for Indonesia suggest substantial variation of MNE-local differentials among industries and over time, as well as between exporting and non-exporting plants.

MNE-local wage differentials in Malaysia also varied substantially among industries and industry-level results were more sensitive to the lagging of independent variables or the choice between pooled OLS and random effects estimation than aggregate results (Table 6). For example, MNE-local differentials were significant in all six estimates for only three of 22 groups, exporters in wood and rubber, and non-exporters in rubber. Moreover, in rubber, random effects estimates of the lagged specification suggest slightly larger MNE-local differentials for exporters, but all other estimates suggest substantially lower differentials for exporters. Wood was the only other industry where all estimates tell a similar qualitative story, suggesting positive and significant differentials for exporters of 5.8 to 8.7 percent and insignificant differentials for non-exporters. Estimates of the contemporaneous specification are similar in textiles suggesting positive differentials for exporters but insignificant or negative differentials for non-exporters, but estimates of the lagged specification indicate differentials were insignificant for both exporters and non-exporters. In contrast, estimates of the contemporaneous specification for chemicals, metals, and non-electric machinery indicate relatively large differences for non-exporters, but estimates of the lagged specification are again inconsistent. In short, as in Indonesia, there is substantial variation of MNE-local wage differentials among industries in Malaysia, and no clear tendency for MNE-local wage differentials to differ among exporters and non-exporters at the industry level.

3.5. Conclusions and Future Research

This paper first explained previous evidence that MNEs tend to pay higher wages and to hire relatively well educated workers than non-MNEs, and that positive MNE-local wage differentials remain even after accounting for differences in worker education and sex, as well as plant size and capital or input intensity. On the other hand, there is no known evidence as to whether MNE-local wage differentials differ between exporters, who are more exposed to

competition in world markets and non-exporters, who lack such exposure. Simultaneously sorting out differences between MNEs and non-MNEs and between exporters and non-exporters is complicated because a firm's decision to become an MNE or an exporter (or both) are related to sunk costs incurred in the creation of exporting networks, production technology, and other firm-specific, generally intangible assets.

In large samples of plants in 11 manufacturing industries, mean, unconditional MNE-local wage differentials tended to be somewhat smaller for exporters than for non-exporters of Malaysia in 2000-2004 (31 vs. 44 percent) and Indonesia in 2006 (58 vs. 74 percent), and the gap was particularly conspicuous for Indonesia in 1996 (89 vs. 220 percent). Shares of workers with tertiary education were also smaller for exporters than non-exporters. Conditional MNE-local wage differentials that account for the influences of worker education and sex, as well as plant size and capital or energy intensity, on plant-level wages were much smaller than unconditional differentials, but were always positive and highly significant statistically. In other words, worker education and sex, and other plant characteristics, explain much of the unconditional MNE-local differentials, but MNEs tended to pay higher wages than local plants even after accounting for these other determinants of wages. Like unconditional differentials, conditional differentials were smaller for exporters Indonesia in 1996 (24 vs. 32 percent). In contrast, conditional differentials were larger for exporters in Indonesia in 2006 (12 vs. 5.7 percent) and Malaysia in 2000-2004 (8.8-9.2 vs. 6.2-7.5 percent in pooled OLS estimates and 7.2-7.8 vs. 4.7-6.7 percent in random effects estimates).

When 11 sample industries are examined separately, the tendency for unconditional MNE-local wage differentials to be smaller in exporters is also observed. However, there is substantial variation in the size of MNE-local differentials and gaps in these differentials between exporters and non-exporters among industries. Moreover, when conditional MNE-local differentials and other slope coefficients are allowed to differ among industries,

differentials were often insignificant, especially for Indonesia in 2006. Most importantly, there is no clear tendency for differentials to be related to export status in the industry-level samples. Rather differences among industries appear to dominate differences between exporters and non-exporters, and there are indications that results for all industries combined are driven by results in a relatively few number of industries.

Because this is perhaps the first study to compare MNE-local wage differentials between exporters and non-exporters, there is a long agenda for future research. For example, this study has focused on the differences between exporters and non-exporters because the discrete decision to export is likely to be closely related to the similarly discrete decision to become an MNE. However, it is also potentially interesting to examine differences between importers and non-importers, or between plants with varying degrees of export or import dependence. Similarly, it may be interesting to distinguish among MNEs with differing degrees of foreign ownership, though this is not possible for Malaysia and previous evidence suggests this distinction is not very important to wage determination in Indonesia (Ramstetter and Narjoko 2013). It would also be interesting to examine other host economies, though lack of data on worker education is a key constraint. Finally, as in Lipsey and Sjöholm (2004b, 2005, 2006) and Sjöholm and Lipsey (2006), one could also investigate how takeovers or changes in ownership affect both wages and employment, or the effect of MNE presence on wages in local plants (i.e., wage spillovers). All of these analyses require some degree of data panelization, which is particularly difficult in Indonesia because annual surveys lack data on worker education, sample sizes vary greatly between the 2006 census and surrounding years, for example. However, using the panels constructed for Malaysia, it should be possible to do similar analysis for 2000-2004 and maybe subsequent years if data can be obtained.

References:

Athukorala, Prema-chandra and Evelyn S. Devadason (2012), "The Impact of Foreign Labor on Host Country Wages: The Experience of a Southern Host, Malaysia", *World Development*, 40(8), 1497-1510.

Aitken, Brian, Ann. Harrison and Robert E. Lipsey (1996) "Wages and Foreign Ownership: A Comparative study of Mexico, Venezuela, and the United States", *Journal of International Economics*, 40(3-4), 345-371.

Bernard, Andrew B. and J. Bradford Jensen (2004), "Exporting, Skill Upgrading, and the Wage Gap," *Journal of International Economics*, 42(1-2), 3-31.

Bernard, Andrew B., J. Bradford Jensen, Stephen J. Redding, and Peter K. Schott (2007), "Firms in International Trade", *Journal of Economic Perspectives*, 21(3), 105-130.

BPS-Statistics (various years), *Statistik Industri* (*Industrial Statistics*), various volumes and underlying plant-level data, 1990-2011 issues. Jakarta: Badan Pusat Statistik.

Buckley, Peter J. and Mark Casson (1992), *The Future of the Multinational Enterprise*, 2nd Edition. London: Macmillan.

Casson, Mark (1987), *The Firm and the Market: Studies on the Multinational and the Scope of the Firm*, Cambridge, MA: MIT Press.

Caves, Richard E. (2007), *Multinational Enterprise and Economic Analysis*, 3rd edition, London: Cambridge University Press.

Chapman, Bruce J. and J. Ross Harding (1985), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", *Journal of Development Studies*, 21(3), 362-376.

Department of Statistics (2002), *Census of Manufacturing Industries 2001* [2000 data]. Putrajaya: Department of Statistics.

Department of Statistics (2011a), *Annual National Accounts, Gross Domestic Product (GDP) 2000-2010*. Putrajaya: Department of Statistics.

Department of Statistics (2011b), *Malaysia Economic Statistics – Time Series 2011*. Putrajaya: Department of Statistics.

Department of Statistics (various years), *Annual Survey of Manufacturing Industries*, 2002-2005 issues [2001-2004 data], Kuala Lumpur: Department of Statistics.

Dunning, John H. (1993), *Multinational Enterprises and the Global Economy*. Workingham, U.K.: Addison-Wesley Publishing Co.

Feridhanusetyawan, Tubagus, Haryo Aswicahyono and Ari A Perdana (2001), "The Male-Female Wage Differentials in Indonesia", Economics Working Paper Series 059, Jakarta: Centre for Strategic and International Studies.

Greenaway, David and Richard Kneller (2007), "Firm Heterogeneity, Exporting and Foreign Direct Investment", *The Economic Journal*, 117(517), F134-F161.

Guerin, Bill (2002), "Sony pullout plan rocks Indonesia", *Asia Times*, 7 December, http://www.atimes.com/atimes/Southeast_Asia/DL07Ae01.html.

Hill, Hal (2000), *The Indonesian Economy*, second edition, Cambridge: Cambridge University Press.

Hwan, Shin Yoon (2011), Labor Relations in Korean Companies in Indonesia: Focusing on the Early Period", Kyoto Review of Southeast Asia (11), http://kyotoreview.org/issue-11/labor-relations-in-korean-companies-in-indonesia-focusing-on-the-early-period/

Ismail, Rahmah and Haji Mat Zin, Ragayah (2003), "Earnings Differentials Determinants between Skills in the Malaysian Manufacturing Sector", *Asian Economic Journal*, 17(4), 325-340.

Lee, Kiong-Hock and Shyamala Nagaraj (1995), "Sex Differences in Earnings: An Analysis of Malaysian Wage Data", *Journal of Development Studies*, 31(3), 467-480.

Lim, David (1977), "Do Foreign Companies Pay Higher Wages than Their Local Counterparts in Malaysian Manufacturing", *Journal of Development Economics*, 4(1), 55-66.

Lipsey, Robert E., and Fredrik Sjöholm (2004a), "Foreign Direct Investment, Education, and Wages in Indonesian Manufacturing", *Journal of Development Economics*, 73(1), 415-22.

Lipsey, Robert E., and Fredrik Sjöholm (2004b), "FDI and Wage Spillovers in Indonesian Manufacturing," *Review of World Economics*, 40(2), 321-32.

Lipsey, Robert E. and Fredrik Sjöholm (2005), "Host Country Impacts of Inward FDI: Why Such Different Answers?" in Theodore H. Moran, Edward M. Graham, and Magnus Blomstrom, eds., *Does Foreign Direct Investment Promote Development?*, Washington D.C.: Institute for International Economics, pp. 23-43.

Lipsey, Robert E. and Fredrik Sjöholm (2006), "Foreign Multinationals and Wages in Indonesia" in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 35-53.

Markusen, James R. (2002), *Multinational Firms and the Theory of International Trade*. Cambridge, MA: M.I.T. Press.

Milanovic, Branko (2006), "Inequality and Determinants of Earnings in Malaysia", *Asian Economic Journal*, 20(2), 191-216.

Moran, Theodore H. (2001) *Parental Supervision: The New Paradigm for Foreign Direct Investment and Development*. Washington, D.C.: Institute for International Economics.

Movshuk, Oleksandr and Atsuko Matsuoka-Movshuk (2006), "Multinationals and Wages in Thai Manufacturing", in Eric D. Ramstetter and Fredrik Sjöholm, eds., *Multinationals in Indonesia and Thailand: Wages, Productivity and Exports*. Hampshire, UK: Palgrave-Macmillan, pp. 54-81.

Pirmana, Viktor (2006), "Earnings Differential between Male-Female in Indonesia: Evidence from Sakernas Data", Working Paper in Economics and Development Studies 2006-08, Bandung: Padjadjaran University.

Purnastuti, Losina, Paul W. Miller, and Ruhul Salim (2013), "Declining rates of return to education, evidence for Indonesia", *Bulletin of Indonesian Economic Studies*, 49(2), 213-236.

Ramstetter, Eric (1998), "Measuring the Size of Foreign Multinationals in the Asia-Pacific Regionand Local Firms in Asian Manufacturing Over Time", in Grahame Thompson ed., *Economic Dynamism in the Asia Pacific: The Growth of Integration and Competitiveness*, London: Routledge, 185-212.

Ramstetter, Eric D. (2004) "Labor productivity, wages, nationality, and foreign ownership shares in Thai manufacturing, 1996-2000", *Journal of Asian Economics*, 14(6), 861-884.

Ramstetter, Eric D. (2012a), "Do Multinationals Pay High Wages in Malaysian Manufacturing?", Working Paper 2012-05, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2012b), "Foreign Multinationals in East Asia's Large Developing Economies", Working Paper 2012-06, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. (2013), "Wage Differentials between Foreign Multinationals and Local Plants and Worker Quality in Malaysian Manufacturing", Working Paper 2013-22, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Dionsius Narjoko (2012), "Ownership and Energy Efficiency in Indonesia's Manufacturing Plants", Working Paper 2012-14, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Dionsius Narjoko (2013), "Wage Differentials between Foreign Multinationals and Local Plants and Worker Education in Indonesian Manufacturing", Working Paper 2013-22, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Phan Minh Ngoc (2007), "Employee Compensation, Ownership, and Producer Concentration in Vietnam's Manufacturing Industries", Working Paper 2012-07, Kitakyushu: International Centre for the Study of East Asian Development.

Ramstetter, Eric D. and Sadayuki Takii, (2006), "Exporting and Foreign Ownership in Indonesian Manufacturing", *Economics and Finance in Indonesia* 54(3), 317–345.

Rugman, Alan M., (1980) "Internalization as a General Theory of Foreign Direct Investment: A Re-Appraisal of the Literature," *Weltwirtschaftliches Archiv*, 116(2), 365-379.

Rugman, Alan M. (1985) "Internalization is Still a General Theory of Foreign Direct Investment," *Weltwirtschaftliches Archiv*, 121(3), 570-575.

Schafgans, Marcia M.A. (2000), "Gender Wage Differences in Malaysia", *Journal of Development Economics*, 63(2), 351-378.

Sjöholm, Fredrik (2003), "Which Indonesian Firms Export? The Importance of Foreign Networks," *Papers in Regional Science*, 82: 333-50.

Sjöholm, Fredrik and Robert E. Lipsey (2006), "Foreign Firms and Indonesian Manufacturing Wages: An Analysis with Panel Data", *Economic Development and Cultural Change*, 55(1), 201-221.

Sohn, Katie (2013), "Monetary and Nonmonetary Returns to Education in Indonesia", *The Developing Economies*, 51(1), 34-59.

Takii, Sadayuki (2004), "Productivity Differentials between Local and Foreign Plants in Indonesian Manufacturing, 1995," *World Development*, 32(11), 1957-1969.

Takii, Sadayuki and Eric D. Ramstetter (2005) "Multinational Presence and Labor Productivity Differentials in Indonesian Manufacturing 1975-2001", *Bulletin of Indonesian Economic Studies*, 41(2), 221-242.

Toyo Keizai (various years), *Kaigai Shinshutsu Kigyou Souran: Kaisha Betsu Hen [A Comprehensive Survey of Firms Overseas: Compiled by Company]*, 1997 and 2007 issues. Tokyo: Toyo Keizai.

World Bank (2014), *World Development Indicators*, data downloaded 21 January. http://databank.worldbank.org/data/views/variableselection/selectvariables.aspx?source=world-development-indicators#.

Table 1: Number of Paid Workers in All Plants with Viable Data (thousands) and MNE Shares (percent) by Export Status

	Malaysia, 2000-2004 (average)				Indonesia, 1996				Indonesia, 2006			
	Non-exporters		Exporters		Non-exporters		Exporters		Non-exporters		Exporters	
Industry	Total	Share	Total	Share	Total	Share	Total	Share	Total	Share	Total	Share
Manufacturing	630	24	816	53	1,782	7	2,173	21	2,277	14	1,981	33
11 sample industries	583	25	793	53	1,578	8	2,042	21	1,987	15	1,872	34
Food & beverages	79	6	40	26	329	4	196	12	427	9	238	26
Textiles, apparel, leather, footwear	47	27	70	51	448	10	820	25	570	14	682	35
Wood, paper, furniture	92	11	121	20	171	5	465	8	227	5	366	17
Chemicals	22	28	25	50	98	13	85	19	110	15	89	24
Rubber products	23	30	47	42	34	9	81	17	55	26	80	30
Plastics	46	17	49	37	95	4	67	15	119	12	66	24
Non-metallic mineral products	29	15	26	33	106	1	63	12	100	12	61	18
Metals & metal products	57	14	44	40	120	9	89	32	124	14	50	41
Nonelectric machinery	23	28	23	60	35	8	9	60	51	47	54	51
Electronics-related machinery	123	62	322	78	65	17	113	68	100	41	133	81
Transportation machinery	42	8	26	21	77	14	53	12	103	31	53	63
Excluded industries	47	8	23	45	204	5	131	17	290	2	109	25

Note: Plants with viable data are those with positive paid workers, output, worker compensation; excluded industries are tobacco, printing & publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years).

Table 2: Mean MNE-Local Ratios of Wages and Shares of Paid Workers with Tertiary Education by Export Status

	Malaysia, 2000-2004 (average)				Indonesia, 1996				Indonesia, 2006			
	Non-exporters		Exporters		Non-exporters		Exporters		Non-exporters		Exporters	
Industry	Wages	Shares	Wages	Shares	Wages	Shares	Wages	Shares	Wages	Shares	Wages	Shares
11 sample industries	1.44	1.79	1.31	1.61	3.20	4.05	1.89	2.10	1.74	2.70	1.58	1.78
Food & beverages	1.72	2.22	1.59	1.84	3.31	4.65	1.67	1.69	1.96	3.34	1.49	1.69
Textiles, apparel, leather, footwear	1.17	0.98	1.15	0.93	1.52	2.92	1.32	1.42	1.42	2.51	1.33	1.11
Wood, paper, furniture	1.19	1.46	1.24	1.52	2.14	2.50	1.51	1.86	1.45	2.39	1.33	1.90
Chemicals	1.33	1.48	1.42	1.65	3.84	3.40	2.18	2.06	1.39	1.78	1.54	1.60
Rubber products	1.41	1.21	1.22	1.16	1.44	0.37	1.62	1.37	1.22	0.78	1.16	0.69
Plastics	1.22	1.38	1.19	1.46	2.66	3.65	1.72	1.96	1.42	1.87	1.05	1.21
Non-metallic mineral products	1.66	2.15	1.49	2.24	2.21	1.94	1.37	1.81	2.05	3.03	1.66	1.31
Metals & metal products	1.36	1.56	1.12	1.21	2.65	2.24	1.47	1.45	1.50	1.42	1.12	0.98
Nonelectric machinery	1.59	2.31	1.21	1.55	1.86	2.22	1.76	1.95	1.32	1.28	1.30	0.90
Electronics-related machinery	1.10	1.04	1.05	0.98	1.89	1.16	1.43	1.05	1.19	1.31	1.09	1.14
Transportation machinery	1.23	1.03	1.36	1.45	2.22	1.88	1.41	0.88	1.32	1.29	1.06	1.14
Correlation of means for 11 industries	0.90		0.84		0.71		0.62		0.86		0.51	

Note: Sample plants are those with 20 or more paid workers, and positive output, and worker compensation,; exluded industries are tobacco, printing & publishing, petroleum products, miscellaneous manufacturing, and recycling; wages include all compensation (including overtime, bonuses, and social security payments, paid in cash or in kind).

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years).

Table 3: Estimates of Conditional Multinational-Local Wage Differentials in Indonesia from Equation (1), Other Slope Coefficents, and Equation Indicators; p-values based on robust standard errors (clustered by plant for random effects), 11 industries combined

Independent	1996		2006	
variable, indicator	Non-exporters	Exporters	Non-exporters	Exporters
LKE	0.0583 a	0.0594 a	0.0503 a	0.0556 a
LO	0.1248 a	0.1083 a	0.1099 a	0.1010 a
S5	0.0087 a	0.0141 a	0.0076 a	0.0060 a
S4	0.0024 a	0.0023 a	0.0046 a	0.0027 a
S3	0.0012 a	0.0009 b	0.0031 a	0.0020 a
SF	-0.0028 a	-0.0043 a	-0.0024 a	-0.0039 a
DF	0.3180 a	0.2410 a	0.0578 a	0.1195 a
Observations	13,941	3,901	17,006	4,343
R^2	0.48	0.47	0.48	0.44

Note: estimates include 5 regional dummies and 24 (1996), 55 (2006 non-exporters), or 52 (2006 exporters) industry dummies (see the text for definitions); full results including constants and all dummy coefficients are available from the authors.

Table 4: Estimates of Conditional Multinational-Local Wage Differentials in Malaysia from Equation (1), Other Slope Coefficents, and Equation Indicators; p-values based on robust standard errors (clustered by plant for random effects), 11 industries combined

	Pooled OLS			Random Effects		
	Lagged	Contemporaneous		Lagged	Contemporaneous	
Slope coefficient variable, indicator	2001-2004	2001-2004	2000-2004	2001-2004	2001-2004	2000-2004
NON-EXPORTERS						
LKE =capital intensity	0.0214 a	0.0300 a	0.0312 a	0.0155 a	0.0335 a	0.0340 a
LO =output scale	0.1325 a	0.1379 a	0.1398 a	0.1154 a	0.1373 a	0.1408 a
SH =highly paid share of paid workers	0.0061 a	0.0059 a	0.0074 a	0.0034 a	0.0055 a	0.0071 a
S3 =highly educated share of all workers	0.0055 a	0.0067 a	0.0052 a	0.0041 a	0.0060 a	0.0044 a
S2 =moderately educated share of all workers	0.0011 a	0.0013 a	0.0004 a	0.0005 a	0.0011 a	0.0001
SF =female share of paid workers	-0.0041 a	-0.0034 a	-0.0035 a	-0.0035 a	-0.0027 a	-0.0026 a
DF = MNE-local differential (ratio less 1)	0.0733 a	0.0619 a	0.0751 a	0.0665 a	0.0470 a	0.0623 a
R^2	0.5072	0.5398	0.5241	0.4978	0.5363	0.5202
Observations	11,393	18,003	22,945	11,393	18,003	22,945
Breusch-Pagan Test	-	-	-	3,509 a	5,316 a	6,823 a
EXPORTERS						
LKE =capital intensity	0.0251 a	0.0344 a	0.0347 a	0.0226 a	0.0401 a	0.0431 a
LO =output scale	0.0842 a	0.0895 a	0.0883 a	0.0871 a	0.0907 a	0.0920 a
SH =highly paid share of paid workers	0.0080 a	0.0092 a	0.0095 a	0.0050 a	0.0076 a	0.0079 a
S3 =highly educated share of all workers	0.0069 a	0.0071 a	0.0066 a	0.0051 a	0.0072 a	0.0064 a
S2 =moderately educated share of all workers	0.0012 a	0.0009 a	0.0009 a	0.0009 a	0.0005 a	0.0008 a
SF =female share of paid workers	-0.0036 a	-0.0032 a	-0.0033 a	-0.0037 a	-0.0027 a	-0.0026 a
DF = MNE-local differential (ratio less 1)	0.0899 a	0.0888 a	0.0918 a	0.0724 a	0.0775 a	0.0721 a
R^2	0.6184	0.6287	0.6251	0.6279	0.6263	0.6220
Observations	6,788	9,546	12,421	6,788	9,546	12,421
Breusch-Pagan Test	-	-	-	2,230 a	3,536 a	5,546 a

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; full results including constants and coefficients on year, industry, and region dummies are available from the author.

Table 5: Estimates of Conditional Multinational-Local Wage Differentials in Indonesia by Industry from Equation (1), p-values based on robust standard errors (clustered by plant for random effects)

Independent	1996		2006	
variable, indicator	Non-exporters	Exporters	Non-exporters	Exporters
Food & beverages	0.2969 a	0.1985 a	0.0471	0.0863
Textiles, apparel, leather, footwear	0.0893	0.1378 a	0.0745 b	0.1622 a
Wood, paper, furniture	0.1843	0.1526 a	0.0729	0.0647
Chemicals	0.5330 a	0.4272 a	-0.0325	0.1740 c
Rubber products	0.1203	0.2891 a	0.1711 c	0.1640
Plastics	0.5362 a	0.2310 b	0.0815	0.0676
Non-metallic mineral products	0.1926 c	0.2678	0.0709	0.1828
Metals & metal products	0.3813 a	0.2232 b	0.1242 b	0.2026 b
Nonelectric machinery	0.1338	0.3285	0.0759	0.1979
Electronics-related machinery	0.2843 b	0.2219 a	-0.0409	-0.1135
Transportation machinery	0.0908	0.2282	-0.0650	0.0785

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; other slope coefficients and equation statistics are presented in Appendix Table 3; full results including constants and coefficients on year, industry, and region dummies are available from the author.

Table 6: Estimates of Conditional Multinational-Local Wage Differentials in Malaysia by Industry from Equation (1), p-values based on robust standard errors (clustered by plant for random effects)

	Pooled OLS			Random Effects		
	Lagged	Contemporaneous		Lagged	Contemporaneous	
Industry	2001-2004	2001-2004	2000-2004	2001-2004	2001-2004	2000-2004
Food & beverages, non-exporters	0.0840 c	0.0967 a	0.0948 a	0.0619	0.1075 b	0.0783 c
exporters	0.0564 c	0.0819 a	0.0937 a	0.0731 b	0.1158 b	0.1105 a
Textiles, etc., non-exporters	-0.0024	-0.0656	-0.0196	-0.0645	-0.0800 b	-0.0037
exporters	0.0516 c	0.0916 a	0.0707 a	0.0790 c	0.1162 a	0.0855 a
Wood, etc., non-exporters	0.0208	0.0239	0.0349	0.0437	0.0091	0.0236
exporters	0.0675 a	0.0779 a	0.0760 a	0.0589 b	0.0869 a	0.0730 a
Chemicals, non-exporters	0.0639	0.0839 a	0.1021 a	0.0671	0.1026 b	0.1179 a
exporters	0.0984 a	0.0721 a	0.0756 a	0.0667 c	0.0691 b	0.0678 b
Rubber products, non-exporters	0.2639 a	0.2318 a	0.2497 a	0.1592 b	0.1866 a	0.1662 a
exporters	0.2084 a	0.1816 a	0.1830 a	0.1616 a	0.1354 a	0.1145 a
Plastics, non-exporters	0.0971 a	0.0522 c	0.0791 a	0.0797 c	0.0005	0.0103
exporters	0.0871 a	0.0919 a	0.0953 a	0.0672 c	0.0546 c	0.0700 a
Non-metallic mineral products, non-exporters	0.1136 c	0.0915 b	0.0910 b	0.0949	-0.0182	0.0308
exporters	0.0584	0.0266	0.0652	0.0726	0.1023	0.0903
Metals & metal products, non-exporters	0.0500 c	0.0594 a	0.0845 a	0.0629	0.0748 b	0.0957 a
exporters	0.0591 b	0.0586 a	0.0714 a	0.0429	0.0520	0.0683 b
Non-electric machinery, exporters	0.1464 c	0.1422 a	0.1229 a	0.1585	0.2070 a	0.2030 a
non-exporters	0.0654	0.0380	0.0548	0.0010	-0.0019	0.0273
Electrical machinery, exporters	0.1072 a	0.0636 a	0.0528 b	0.0795 b	0.0493	0.0218
non-exporters	0.0299	0.0395 b	0.0419 a	0.0165	0.0272	0.0304
Transportation machinery, non-exporters	0.1142	0.1109 c	0.1196 b	0.0942	0.1271	0.1674 b
exporters	0.1206 c	0.1282 b	0.1368 b	0.0786	0.0283	0.0674

Notes: a=signficant at the 1% level, b=significant at the 5% level, c=significant at the 10% level; results of the Breusch-Pagan Test indicate the null of no random effects is always rejected at the 1% level; other slope coefficients and equation statistics are presented in Appendix Table 4; full results including constants and coefficients on year, industry, and region dummies are available from the author.

Appendix Table 1a: Paid Workers in Plants with 20+ Paid Workers and Viable Data (thousands)

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Non-exporters, local plants	472.495	412.856	444.644	500.156	567.116	1,650	1,967
11 sample industries	429.229	372.812	402.042	456.090	522.106	1,455	1,682
Food & beverages	69.020	68.238	69.828	78.290	84.215	317.467	387.350
Textiles, apparel, leather, footwear	43.514	31.086	24.987	36.995	36.740	401.597	487.775
Wood, paper, furniture	74.425	75.276	82.068	86.534	91.792	162.166	216.926
Chemicals	14.827	11.763	16.266	16.998	20.271	84.615	93.572
Rubber products	17.240	13.028	12.052	17.312	20.468	31.455	40.773
Plastics	39.821	31.455	32.950	37.522	47.432	91.738	104.523
Non-metallic mineral products	23.171	23.938	23.581	26.796	28.333	104.574	88.390
Metals & metal products	43.071	40.985	48.251	50.170	63.591	109.521	105.969
Nonelectric machinery	15.934	15.466	14.945	14.758	22.685	31.836	27.213
Electronics-related machinery	59.071	31.725	42.385	48.849	50.654	53.551	58.481
Transportation machinery	29.135	29.853	34.729	41.865	55.925	66.975	71.018
5 excluded industries	43.266	40.043	42.602	44.066	45.010	194.035	285.317
Non-exporters, MNEs	109.750	108.016	96.366	140.268	299.433	132.448	309.628
11 sample industries	107.732	104.594	93.082	136.972	292.676	122.290	304.861
Food & beverages	5.025	4.673	3.902	4.004	8.011	11.568	39.773
Textiles, apparel, leather, footwear	8.532	5.329	5.375	9.541	35.210	46.673	82.692
Wood, paper, furniture	9.443	10.560	7.319	7.218	14.100	8.335	10.314
Chemicals	5.082	5.360	5.305	5.001	10.474	13.075	16.831
Rubber products	5.848	3.494	5.405	7.113	12.410	2.972	14.480
Plastics	5.692	7.759	6.141	6.015	13.360	3.466	14.416
Non-metallic mineral products	4.260	4.047	2.760	2.951	7.612	1.271	11.694
Metals & metal products	5.318	6.040	6.232	10.741	11.379	10.419	17.911
Nonelectric machinery	3.836	9.682	4.738	1.180	12.601	2.891	23.920
Electronics-related machinery	52.271	45.871	44.183	78.419	160.672	11.167	41.281
Transportation machinery	2.425	1.781	1.722	4.788	6.846	10.453	31.549
5 excluded industries	2.018	3.421	3.284	3.296	6.757	10.158	4.767

Appendix Table 1a (continued)

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Exporters, local plants	426.417	380.987	425.451	378.208	326.366	1,719	1,325
11 sample industries	412.303	368.419	411.678	365.375	316.480	1,610	1,244
Food & beverages	29.481	29.154	35.112	30.946	24.707	171.621	175.075
Textiles, apparel, leather, footwear	32.569	35.455	43.947	33.320	27.961	612.778	440.407
Wood, paper, furniture	108.940	92.330	95.349	90.271	95.665	429.413	303.724
Chemicals	13.449	12.894	11.522	13.284	10.983	69.037	67.518
Rubber products	29.457	29.434	28.288	23.680	23.367	67.337	56.197
Plastics	30.326	31.585	37.974	33.086	21.566	57.627	50.401
Non-metallic mineral products	20.044	18.949	18.779	14.904	12.813	55.799	49.668
Metals & metal products	28.908	26.527	28.493	26.400	21.117	60.106	29.491
Nonelectric machinery	6.277	8.405	11.629	13.195	7.748	3.526	26.778
Electronics-related machinery	95.269	61.074	71.304	64.497	59.636	36.315	24.858
Transportation machinery	17.583	22.611	29.282	21.792	10.917	46.873	19.738
5 excluded industries	14.114	12.568	13.773	12.833	9.886	108.278	81.085
Exporters, MNEs	489.204	438.911	474.711	433.521	307.611	454.081	656.203
11 sample industries	476.497	427.507	463.244	425.441	298.565	431.373	628.588
Food & beverages	10.419	11.458	11.373	10.309	7.872	23.950	62.820
Textiles, apparel, leather, footwear	36.476	38.505	50.057	32.190	20.767	207.333	241.375
Wood, paper, furniture	26.156	22.987	26.342	25.782	22.130	35.845	62.758
Chemicals	12.048	12.130	13.983	13.706	9.639	15.688	21.840
Rubber products	19.960	21.105	20.849	20.968	16.073	14.083	24.087
Plastics	15.616	11.642	21.304	24.520	17.817	9.774	15.720
Non-metallic mineral products	8.033	8.689	10.612	9.507	5.423	7.501	11.218
Metals & metal products	20.311	16.501	18.895	17.185	14.040	28.653	20.179
Nonelectric machinery	20.514	11.538	14.108	15.810	8.028	5.222	27.321
Electronics-related machinery	301.680	267.740	269.852	250.336	170.739	77.102	107.853
Transportation machinery	5.284	5.212	5.869	5.127	6.038	6.222	33.417
5 excluded industries	12.707	11.404	11.467	8.081	9.046	22.708	27.615

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years).

Appendix Table 1b: Output in Plants with 20+ Paid Workers and Viable Data

	Malaysia (billion ringgit)					Indonesia (trillion rupiah)	
Industry	2000	2001	2002	2003	2004	1996	2006
Non-exporters, local plants	102.311	81.465	101.757	141.274	187.780	87.079	489.431
11 sample industries	80.959	71.033	90.338	113.028	169.349	78.380	429.766
Food & beverages	23.275	20.807	28.062	38.099	46.539	17.887	128.403
Textiles, apparel, leather, footwear	3.398	2.381	1.661	2.679	3.256	10.868	46.543
Wood, paper, furniture	8.711	8.065	9.428	9.841	11.832	7.178	44.871
Chemicals	5.577	5.217	8.158	7.900	12.885	8.016	47.380
Rubber products	2.176	1.984	2.055	2.390	5.003	0.756	11.534
Plastics	4.764	3.394	3.925	4.889	6.820	3.512	15.982
Non-metallic mineral products	4.211	5.637	5.156	5.941	8.272	4.586	12.241
Metals & metal products	9.171	8.831	11.698	13.552	24.169	7.152	74.878
Nonelectric machinery	2.303	3.170	3.001	1.824	4.742	1.900	4.732
Electronics-related machinery	12.696	5.931	9.608	17.330	20.602	6.154	16.560
Transportation machinery	4.675	5.616	7.586	8.583	25.231	10.371	26.642
5 excluded industries	21.352	10.432	11.419	28.246	18.431	8.698	59.665
Non-exporters, MNEs	24.918	32.986	39.516	46.414	128.356	19.020	142.425
11 sample industries	24.483	28.230	32.856	45.672	119.592	18.118	140.743
Food & beverages	2.379	2.768	2.182	2.456	4.458	2.489	19.469
Textiles, apparel, leather, footwear	0.628	0.435	0.445	1.276	4.184	2.397	22.309
Wood, paper, furniture	0.933	1.286	0.626	1.009	2.197	1.044	3.070
Chemicals	2.136	1.876	2.047	1.849	9.827	3.544	21.834
Rubber products	0.764	0.543	0.914	1.077	2.897	0.117	6.131
Plastics	0.705	1.046	0.922	0.842	2.748	0.321	4.798
Non-metallic mineral products	1.038	0.800	0.775	1.058	2.874	0.095	2.265
Metals & metal products	1.884	1.468	1.375	3.373	4.736	3.600	6.114
Nonelectric machinery	1.194	3.421	1.651	0.215	5.389	0.815	3.529
Electronics-related machinery	12.509	14.266	21.588	29.633	78.140	1.115	15.777
Transportation machinery	0.313	0.323	0.330	2.885	2.143	2.580	35.447
5 excluded industries	0.435	4.755	6.660	0.742	8.764	0.903	1.682

Appendix Table 1b (continued)

	Malaysia (ringgit)					Indonesia (trillion rupiah)	
Industry	2000	2001	2002	2003	2004	1996	2006
Exporters, local plants	105.548	103.753	120.275	115.771	116.792	102.735	377.335
11 sample industries	99.536	90.060	104.037	104.946	85.359	92.737	340.545
Food & beverages	13.154	14.238	19.148	19.908	13.327	10.725	61.379
Textiles, apparel, leather, footwear	3.041	3.045	4.227	3.248	2.698	22.643	64.904
Wood, paper, furniture	12.749	10.458	11.717	12.261	13.672	17.355	54.199
Chemicals	6.701	5.139	5.336	9.949	9.914	6.915	52.557
Rubber products	4.993	4.745	5.041	5.815	4.719	5.658	34.058
Plastics	3.538	3.867	5.203	4.910	3.272	2.322	11.068
Non-metallic mineral products	4.251	2.930	3.850	2.939	2.222	3.630	19.327
Metals & metal products	9.469	8.018	9.072	10.498	10.527	12.822	17.855
Nonelectric machinery	1.186	1.398	3.220	3.453	1.514	0.126	6.500
Electronics-related machinery	28.812	21.989	19.060	20.299	20.470	2.603	9.433
Transportation machinery	11.642	14.234	18.163	11.668	3.023	7.938	9.264
5 excluded industries	6.012	13.692	16.238	10.825	31.432	9.997	36.789
Exporters, MNEs	197.891	172.304	190.534	205.870	163.187	34.160	273.967
11 sample industries	186.669	161.282	174.812	194.493	155.749	33.238	268.509
Food & beverages	8.055	7.116	9.145	9.934	9.892	2.458	51.901
Textiles, apparel, leather, footwear	6.136	5.624	5.617	4.239	2.765	7.152	36.452
Wood, paper, furniture	3.645	3.342	3.918	3.300	3.517	2.493	23.174
Chemicals	12.261	11.194	14.851	19.673	23.255	4.342	25.627
Rubber products	2.995	3.048	2.933	3.876	2.782	1.909	12.041
Plastics	2.365	1.930	5.915	6.526	3.674	0.563	3.354
Non-metallic mineral products	2.431	2.486	2.822	2.867	1.397	0.454	5.522
Metals & metal products	6.417	5.146	6.188	6.981	4.904	3.477	15.045
Nonelectric machinery	6.410	3.818	4.779	5.655	2.715	0.947	9.562
Electronics-related machinery	134.411	116.381	117.245	130.061	97.530	9.159	41.167
Transportation machinery	1.543	1.197	1.399	1.381	3.318	0.283	44.664
5 excluded industries	11.222	11.023	15.722	11.377	7.438	0.922	5.458

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years)

Appendix Table 1c: Exports in Plants with 20+ Paid Workers and Viable Data

	Malaysia (billion ringgit)					Indonesia (trillion rupiah)	
Industry	2000	2001	2002	2003	2004	1996	2006
Local plants	64.354	62.186	64.862	63.072	74.245	49.460	195.041
11 sample industries	60.865	50.417	52.246	56.833	51.007	48.271	182.788
Food & beverages	6.140	8.229	10.379	11.557	6.378	6.322	32.718
Textiles, apparel, leather, footwear	2.468	2.388	3.323	2.564	2.198	14.733	36.222
Wood, paper, furniture	9.050	7.328	8.128	8.451	9.808	13.177	36.586
Chemicals	3.203	2.284	2.494	3.894	4.233	1.841	13.929
Rubber products	3.604	3.397	3.758	4.425	3.650	4.987	29.698
Plastics	1.400	1.840	2.542	2.133	1.632	0.869	5.106
Non-metallic mineral products	1.799	0.800	1.617	0.798	0.623	0.968	7.849
Metals & metal products	3.603	2.767	2.186	3.600	3.627	1.628	9.132
Nonelectric machinery	0.468	0.572	1.322	1.685	0.593	0.021	3.314
Electronics-related machinery	26.396	20.095	15.569	16.930	17.841	1.404	4.283
Transportation machinery	2.735	0.717	0.928	0.796	0.424	2.320	3.951
5 excluded industries	3.488	11.769	12.616	6.239	23.238	1.189	12.253
MNEs	160.661	141.321	154.807	169.961	127.726	20.730	166.178
11 sample industries	157.937	138.310	150.316	166.815	124.179	20.015	161.063
Food & beverages	5.098	3.521	5.339	6.149	6.575	1.280	33.043
Textiles, apparel, leather, footwear	5.342	5.012	5.170	3.877	2.537	5.583	25.076
Wood, paper, furniture	3.227	2.881	3.295	2.708	3.010	1.787	18.075
Chemicals	6.224	6.104	7.965	10.831	12.490	0.899	11.299
Rubber products	2.475	2.503	2.397	2.865	2.531	1.010	9.176
Plastics	1.740	1.428	4.682	4.797	2.967	0.310	2.038
Non-metallic mineral products	1.032	1.456	1.754	1.983	1.170	0.112	1.697
Metals & metal products	4.344	3.321	4.093	4.140	3.343	1.609	11.655
Nonelectric machinery	4.915	2.447	4.109	4.735	2.472	0.334	4.315
Electronics-related machinery	122.441	108.757	110.489	123.767	86.076	6.897	35.314
Transportation machinery	1.099	0.880	1.022	0.963	1.008	0.194	9.375
5 excluded industries	2.724	3.011	4.491	3.146	3.547	0.715	5.115

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years)

Appendix Table 1d: Number of Plants with 20+ Paid Workers and Viable Data

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Non-exporters, local plants	5,068	4,264	4,340	4,587	4,979	14,991	18,306
11 sample industries	4,510	3,781	3,868	4,089	4,456	13,730	16,452
Food & beverages	909	904	915	900	948	3,505	4,612
Textiles, apparel, leather, footwear	407	317	271	308	375	3,087	4,408
Wood, paper, furniture	859	678	709	767	784	1,867	2,248
Chemicals	177	141	137	160	204	695	755
Rubber products	146	91	97	115	141	248	279
Plastics	414	287	289	330	356	850	1,040
Non-metallic mineral products	323	288	286	291	307	1,437	1,076
Metals & metal products	582	539	591	590	694	926	951
Nonelectric machinery	216	202	202	251	263	273	290
Electronics-related machinery	292	180	200	197	199	340	278
Transportation machinery	185	154	171	180	185	502	515
5 excluded industries	558	483	472	498	523	1,261	1,854
Non-exporters, MNEs	456	436	394	465	629	351	854
11 sample industries	432	408	368	440	593	333	824
Food & beverages	39	36	35	33	43	46	118
Textiles, apparel, leather, footwear	24	24	24	28	32	70	132
Wood, paper, furniture	50	44	31	38	58	19	49
Chemicals	47	42	49	49	77	64	91
Rubber products	24	18	15	24	35	7	16
Plastics	43	43	34	40	50	13	54
Non-metallic mineral products	22	22	18	18	29	12	40
Metals & metal products	49	52	47	66	73	41	90
Nonelectric machinery	29	36	25	14	41	17	84
Electronics-related machinery	97	84	82	118	133	27	87
Transportation machinery	8	7	8	12	22	17	63
5 excluded industries	24	28	26	25	36	18	30

Appendix Table 1d (continued)

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Exporters, local plants	1,942	1,768	1,832	1,578	1,270	3,451	3,647
11 sample industries	1,859	1,680	1,754	1,514	1,216	3,248	3,438
Food & beverages	217	201	222	186	146	477	536
Textiles, apparel, leather, footwear	142	154	154	117	91	827	646
Wood, paper, furniture	528	448	444	385	371	1,181	1,484
Chemicals	103	93	91	99	72	153	160
Rubber products	141	114	114	92	74	137	137
Plastics	185	173	199	159	128	101	98
Non-metallic mineral products	90	93	84	68	55	96	135
Metals & metal products	176	178	179	165	123	134	104
Nonelectric machinery	66	58	73	64	34	20	39
Electronics-related machinery	161	119	132	131	85	73	55
Transportation machinery	50	49	62	48	37	49	44
5 excluded industries	83	88	78	64	54	203	209
Exporters, MNEs	1,074	938	1,004	914	703	713	1,015
11 sample industries	1,017	891	958	868	666	666	974
Food & beverages	54	55	61	57	46	69	107
Textiles, apparel, leather, footwear	75	66	59	53	44	167	190
Wood, paper, furniture	101	89	104	88	72	85	172
Chemicals	81	81	88	84	57	68	88
Rubber products	74	71	66	52	41	27	30
Plastics	73	66	77	79	65	32	53
Non-metallic mineral products	28	30	35	33	24	17	16
Metals & metal products	122	101	102	96	75	61	84
Nonelectric machinery	58	46	54	50	36	17	43
Electronics-related machinery	332	266	292	255	189	106	136
Transportation machinery	19	20	20	21	17	17	55
5 excluded industries	57	47	46	46	37	47	41

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years)

Appendix Table 2a: Mean Annual Wages in Plants with 20+ Paid Workers and Viable Data

	Malaysia (ringgit)					Indonesia (1000 rupiah)	
Industry	2000	2001	2002	2003	2004	1996	2006
Non-exporters, local plants							
11 sample industries	15,828	16,428	17,053	17,811	19,034	2,235	11,980
Food & beverages	16,156	14,731	15,111	16,036	16,922	1,860	9,883
Textiles, apparel, leather, footwear	12,225	12,941	12,822	13,531	13,712	1,935	9,950
Wood, paper, furniture	13,451	14,645	15,290	15,412	16,099	2,112	12,765
Chemicals	23,000	24,294	25,700	26,183	28,506	3,806	19,793
Rubber products	14,415	15,524	16,560	16,094	17,423	2,252	12,271
Plastics	15,139	15,855	16,138	17,043	19,779	2,210	14,015
Non-metallic mineral products	17,137	17,448	18,360	20,144	21,283	1,935	9,658
Metals & metal products	17,502	18,833	18,967	19,741	21,381	3,092	18,129
Nonelectric machinery	19,550	21,904	22,345	22,392	24,125	3,310	15,484
Electronics-related machinery	16,923	17,649	19,292	21,341	23,385	3,222	18,135
Transportation machinery	20,165	19,065	20,571	20,165	22,443	3,047	17,202
5 excluded industries	14,230	15,737	16,368	17,366	17,457	2,349	12,185
Non-exporters, MNEs							
11 sample industries	22,102	23,259	24,867	25,759	28,098	7,154	20,789
Food & beverages	24,589	23,342	28,268	28,045	31,604	6,162	19,325
Textiles, apparel, leather, footwear	13,276	13,968	15,377	16,080	17,917	2,949	14,132
Wood, paper, furniture	15,355	18,146	15,448	20,192	19,717	4,515	18,490
Chemicals	35,163	28,627	31,356	33,739	41,264	14,630	27,544
Rubber products	18,482	23,018	24,506	20,109	26,877	3,242	15,006
Plastics	17,871	19,473	20,642	21,568	22,527	5,870	19,863
Non-metallic mineral products	29,685	31,562	32,018	31,850	31,474	4,280	19,845
Metals & metal products	25,306	25,609	24,634	27,726	27,679	8,188	27,145
Nonelectric machinery	27,867	31,419	36,137	43,046	37,073	6,170	20,384
Electronics-related machinery	18,844	19,859	20,869	24,577	24,544	6,095	21,555
Transportation machinery	24,168	22,133	25,437	26,553	27,217	6,755	22,778
5 excluded industries	18,595	26,160	30,855	24,473	28,798	4,361	16,027

Appendix Table 2a (continued)

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Exporters, local plants							
11 sample industries	18,220	18,923	19,956	21,740	21,305	2,981	13,471
Food & beverages	18,996	20,372	20,619	22,002	21,328	2,818	13,235
Textiles, apparel, leather, footwear	14,669	14,815	16,098	16,878	15,358	2,755	12,141
Wood, paper, furniture	14,365	14,106	15,179	15,922	16,311	2,414	10,810
Chemicals	28,689	28,775	31,199	34,576	34,722	5,764	25,061
Rubber products	16,303	16,212	16,905	18,088	18,598	2,971	15,783
Plastics	17,177	18,129	19,392	20,487	20,190	3,094	17,619
Non-metallic mineral products	19,987	20,795	21,282	22,399	22,543	4,098	15,644
Metals & metal products	21,900	23,099	23,719	25,252	25,453	4,209	22,656
Nonelectric machinery	24,225	26,847	28,090	29,845	29,695	4,304	19,532
Electronics-related machinery	20,370	22,561	21,705	22,834	23,789	4,073	21,086
Transportation machinery	18,024	19,652	20,917	24,696	19,878	5,408	23,792
5 excluded industries	20,829	21,004	24,252	31,070	35,117	2,544	11,023
Exporters, MNEs							
11 sample industries	23,673	25,997	26,427	27,771	27,742	5,631	21,286
Food & beverages	31,199	32,553	32,972	33,634	34,085	4,696	19,712
Textiles, apparel, leather, footwear	17,240	18,378	17,825	18,074	18,239	3,649	16,207
Wood, paper, furniture	17,436	18,082	19,384	19,611	19,371	3,653	14,381
Chemicals	38,001	40,619	46,079	48,692	50,614	12,583	38,560
Rubber products	20,456	20,483	20,662	22,713	20,720	4,826	18,366
Plastics	19,962	22,411	23,782	24,372	23,398	5,323	18,467
Non-metallic mineral products	27,871	29,883	28,755	35,815	37,346	5,618	26,039
Metals & metal products	25,187	26,888	26,411	27,426	27,329	6,202	25,294
Nonelectric machinery	29,706	33,532	33,386	35,425	35,464	7,573	25,475
Electronics-related machinery	21,320	24,226	23,505	23,170	24,235	5,825	22,973
Transportation machinery	25,372	24,157	30,308	31,424	29,478	7,644	25,199
5 excluded industries	26,329	31,216	26,761	31,107	31,840	3,016	14,556

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years).

Appendix Table 2b: Mean Shares of Workers with Tertiary Education in Plants with 20+ Paid Workers and Viable Data

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Non-exporters, local plants							
11 sample industries	9.79	8.46	8.74	9.50	10.92	2.33	3.81
Food & beverages	7.36	6.06	6.12	6.51	7.35	1.60	2.90
Textiles, apparel, leather, footwear	6.47	5.53	5.90	6.88	7.67	1.23	2.04
Wood, paper, furniture	7.44	6.17	6.14	6.81	7.94	1.92	3.19
Chemicals	18.93	17.22	18.59	19.35	22.29	6.36	12.03
Rubber products	9.66	7.64	8.74	9.83	9.37	2.62	4.40
Plastics	11.21	9.83	10.42	10.22	12.91	2.45	4.10
Non-metallic mineral products	9.04	8.36	8.30	8.81	10.58	1.60	3.06
Metals & metal products	12.46	10.06	9.80	9.99	11.50	4.01	6.63
Nonelectric machinery	11.90	10.72	12.45	12.82	15.45	5.53	8.61
Electronics-related machinery	14.66	12.91	14.24	18.26	19.68	6.51	9.89
Transportation machinery	11.33	10.33	12.86	12.42	13.29	4.24	7.28
5 excluded industries	9.63	9.90	8.97	10.58	11.82	4.53	8.79
Non-exporters, MNEs							
11 sample industries	15.06	15.43	17.27	18.35	18.98	9.44	10.28
Food & beverages	12.91	11.91	12.79	17.75	18.71	7.45	9.68
Textiles, apparel, leather, footwear	6.30	4.85	5.25	7.72	7.57	3.58	5.12
Wood, paper, furniture	10.01	9.19	7.85	12.23	11.08	4.80	7.62
Chemicals	26.77	27.44	26.03	28.64	33.55	21.61	21.47
Rubber products	9.18	11.50	11.66	8.54	13.74	0.98	3.45
Plastics	11.04	14.28	18.07	17.11	14.71	8.94	7.66
Non-metallic mineral products	18.08	18.00	17.79	25.32	17.54	3.09	9.28
Metals & metal products	16.78	13.47	17.77	18.50	17.18	8.98	9.43
Nonelectric machinery	25.50	24.76	30.76	36.02	29.26	12.25	10.98
Electronics-related machinery	13.91	14.26	17.08	18.40	18.89	7.52	12.94
Transportation machinery	13.03	10.67	8.23	15.92	14.36	7.97	9.39
5 excluded industries	14.42	19.40	20.40	17.28	18.27	4.96	8.54

Appendix Table 2a (continued)

	Malaysia					Indonesia	
Industry	2000	2001	2002	2003	2004	1996	2006
Exporters, local plants							
11 sample industries	10.32	10.15	11.21	12.43	11.60	3.57	5.66
Food & beverages	10.32	10.28	10.57	11.27	11.35	4.41	5.61
Textiles, apparel, leather, footwear	5.87	5.68	7.94	8.37	7.74	2.86	4.66
Wood, paper, furniture	6.13	5.53	5.96	6.62	6.36	2.36	4.07
Chemicals	18.30	17.37	19.29	21.48	20.93	8.92	15.64
Rubber products	8.19	7.44	7.78	9.18	8.31	1.77	4.43
Plastics	10.34	10.98	11.87	12.46	11.79	3.91	7.35
Non-metallic mineral products	10.80	8.69	10.67	9.57	9.43	4.47	6.74
Metals & metal products	13.89	14.11	13.45	16.67	16.07	5.70	10.89
Nonelectric machinery	17.49	19.11	21.01	20.05	23.00	6.06	15.03
Electronics-related machinery	15.93	17.63	19.08	19.72	20.22	7.92	9.86
Transportation machinery	12.42	10.88	12.73	13.67	12.26	8.92	9.21
5 excluded industries	12.24	12.54	14.92	17.43	17.11	3.43	5.92
Exporters, MNEs							
11 sample industries	16.40	17.47	18.29	18.93	18.77	7.48	10.09
Food & beverages	19.52	19.71	21.89	19.38	18.68	7.45	9.46
Textiles, apparel, leather, footwear	7.25	6.74	6.79	6.54	5.93	4.06	5.20
Wood, paper, furniture	9.00	8.20	10.44	9.78	9.01	4.37	7.74
Chemicals	29.30	29.75	33.29	33.79	34.97	18.36	25.08
Rubber products	11.23	9.19	8.74	11.04	7.29	2.43	3.05
Plastics	15.96	17.70	17.81	16.81	15.66	7.66	8.91
Non-metallic mineral products	19.45	20.26	20.34	24.88	25.43	8.08	8.85
Metals & metal products	15.93	18.18	17.53	18.65	19.66	8.26	10.68
Nonelectric machinery	26.81	30.15	30.68	34.70	34.02	11.80	13.54
Electronics-related machinery	16.14	18.66	17.98	17.95	19.95	8.35	11.24
Transportation machinery	15.25	15.32	21.00	18.89	19.28	7.85	10.49
5 excluded industries	18.42	16.97	18.09	20.20	19.24	3.33	4.97

Note: Plants with viable data are those with 20 or more paid workers, positive output, worker compensation, and fixed assets; exluded industries are tobacco, publishing, petroleum products, miscellaneous manufacturing, and recycling.

Source: Author's compilations from micro data underlying BPS-Statistics (various years); Department of Statistics (2002, various years).

Appendix Table 3: OLS Estimates of Conditionals MNE-Local Wage Differentials from Equation (1), Other Slope Coefficients, and Equation Indicators; p-values based on robust standard errors

Independent	1996				2006			
variable	Non-exporters		Exporters		Non-exporters		Exporters	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
11 SAMPLE INDUSTRIES COMBINED								
LKE	0.0583	0.00	0.0594	0.00	0.0503	0.00	0.0556	0.00
LO	0.1248	0.00	0.1083	0.00	0.1099	0.00	0.1010	0.00
S4	0.0087	0.00	0.0141	0.00	0.0076	0.00	0.0060	0.00
S3	0.0024	0.00	0.0023	0.00	0.0046	0.00	0.0027	0.00
S2	0.0012	0.00	0.0009	0.03	0.0031	0.00	0.0020	0.00
SF	-0.0028	0.00	-0.0043	0.00	-0.0024	0.00	-0.0039	0.00
DF	0.3180	0.00	0.2410	0.00	0.0578	0.01	0.1195	0.00
# Observations/R^2	13,941	0.48	3,901	0.47	17,006	0.48	4,343	0.44
# Industry Dummies	24	-	24	-	55	-	52	-
FOOD & BEVERAGES								
LKE	0.0761	0.00	0.0828	0.00	0.0700	0.00	0.0703	0.00
LO	0.1425	0.00	0.1242	0.00	0.1432	0.00	0.1566	0.00
S4	0.0067	0.04	0.0061	0.11	0.0034	0.05	0.0056	0.44
S3	0.0023	0.00	0.0049	0.00	0.0036	0.00	0.0034	0.00
S2	0.0017	0.00	0.0021	0.12	0.0028	0.00	0.0006	0.51
SF	-0.0021	0.00	-0.0054	0.00	-0.0026	0.00	-0.0041	0.00
DF	0.2969	0.00	0.1985	0.01	0.0471	0.42	0.0863	0.23
# Observations/R^2	3,526	0.44	543	0.44	4,671	0.42	634	0.46
# Industry Dummies	2	-	2	-	4	-	4	-
TEXTILES, APPAREL, LEATHER, FOOTWEAR								
LKE	0.0500	0.00	0.0549	0.00	0.0601	0.00	0.0596	0.00
LO	0.0746	0.00	0.0850	0.00	0.0649	0.00	0.0786	0.00
S4	0.0028	0.27	0.0122	0.04	0.0061	0.01	0.0042	0.18
S3	0.0012	0.00	0.0011	0.09	0.0042	0.00	0.0032	0.00
S2	0.0019	0.00	0.0016	0.05	0.0027	0.00	0.0022	0.02
SF	-0.0017	0.00	-0.0030	0.00	-0.0013	0.00	-0.0021	0.01
DF	0.0893	0.10	0.1378	0.00	0.0745	0.04	0.1622	0.00
# Observations/R^2	3,118	0.36	992	0.34	4,477	0.42	820	0.30
# Industry Dummies	2	-	2	-	7	-	5	-
WOOD, PAPER, FURNITURE								
LKE	0.0957	0.00	0.0563	0.00	0.0266	0.01	0.0386	0.01
LO	0.0874	0.00	0.1111	0.00	0.1001	0.00	0.1091	0.00
S4	0.0088	0.01	0.0132	0.01	0.0155	0.00	0.0028	0.13
S3	0.0017	0.00	0.0009	0.16	0.0067	0.00	0.0017	0.00
S2	0.0002	0.65	0.0009	0.20	0.0050	0.00	0.0024	0.00
SF	-0.0030	0.00	-0.0039	0.00	-0.0043	0.00	-0.0047	0.00
DF	0.1843	0.15	0.1526	0.00	0.0729	0.44	0.0647	0.11
# Observations/R^2	1,847	0.30	1,258	0.33	2,256	0.34	1,637	0.31
# Industry Dummies	2	-	2	-	3	-	3	-

Appendix Table 3 (continued)

Independent	1996				2006			
variable	Non-exporters		Exporters		Non-exporters		Exporters	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
CHEMICALS								
LKE	0.0562	0.01	-0.0019	0.97	0.0366	0.01	0.0582	0.04
LO	0.1991	0.00	0.2121	0.00	0.1457	0.00	0.1389	0.00
S4	0.0134	0.00	0.0225	0.00	0.0126	0.00	0.0052	0.20
S3	0.0020	0.01	0.0047	0.02	0.0055	0.00	0.0038	0.07
S2	0.0017	0.04	-0.0002	0.95	0.0045	0.00	-0.0012	0.60
SF	-0.0026	0.00	-0.0027	0.30	-0.0028	0.00	-0.0020	0.46
DF	0.5330	0.00	0.4272	0.00	-0.0325	0.65	0.1740	0.07
Observations/R^2	756	0.56	221	0.59	827	0.46	240	0.37
No. Industry Dummi	1	-	1	-	2	-	2	-
RUBBER PRODUCTS								
LKE	0.0608	0.01	0.0556	0.09	0.0789	0.00	0.0996	0.11
LO	0.1289	0.00	0.1200	0.00	0.0223	0.24	0.0446	0.25
S4	0.0015	0.47	0.0066	0.50	0.0025	0.25	-0.0053	0.61
S3	0.0032	0.00	0.0019	0.23	0.0025	0.04	0.0005	0.84
S2	0.0007	0.43	0.0008	0.73	0.0032	0.02	0.0000	0.99
SF	-0.0027	0.01	-0.0051	0.00	-0.0010	0.29	-0.0055	0.01
DF	0.1203	0.52	0.2891	0.00	0.1711	0.09	0.1640	0.25
# Observations/R^2	254	0.38	164	0.40	291	0.19	165	0.23
# Industry Dummies	0	-	0	-	0	-	0	-
PLASTICS								
LKE	0.0299	0.02	0.0077	0.79	0.0078	0.54	-0.0153	0.62
LO	0.0802	0.00	0.1040	0.01	0.0783	0.00	0.0933	0.00
S4	0.0018	0.46	0.0281	0.01	0.0066	0.01	0.0059	0.46
S3	0.0026	0.00	0.0032	0.07	0.0064	0.00	0.0004	0.92
S2	0.0011	0.07	0.0001	0.97	0.0053	0.00	0.0003	0.96
SF	-0.0033	0.00	-0.0048	0.00	-0.0025	0.00	-0.0016	0.34
DF	0.5362	0.00	0.2310	0.03	0.0815	0.29	0.0676	0.59
# Observations/R^2	863	0.43	133	0.52	1,080	0.31	147	0.18
# Industry Dummies	0	-	0	-	0	-	0	-
NON-METALLIC MINERAL PRODUCTS								
LKE	0.0330	0.00	0.0611	0.18	-0.0111	0.37	0.0415	0.18
LO	0.1728	0.00	0.1546	0.00	0.1678	0.00	0.0796	0.01
S4	0.0040	0.28	0.0170	0.17	-0.0027	0.43	0.0190	0.05
S3	0.0033	0.00	0.0009	0.65	0.0046	0.00	0.0045	0.01
S2	0.0009	0.12	0.0008	0.76	0.0015	0.00	0.0007	0.77
SF	-0.0041	0.00	-0.0075	0.00	-0.0027	0.00	-0.0054	0.01
DF	0.1926	0.09	0.2678	0.16	0.0709	0.53	0.1828	0.16
# Observations/R^2	1,443	0.51	113	0.56	1,100	0.49	151	0.63
# Industry Dummies	4	-	4	-	6	-	6	-

Appendix Table 3 (continued)

Independent	1996				2006			
variable	Non-exporters		Exporters		Non-exporters		Exporters	
statistic	Value	P-val.	Value	P-val.	Value	P-val.	Value	P-val.
METALS & METAL PRODUCTS								
LKE	0.0793	0.00	0.0757	0.06	0.0881	0.00	0.0584	0.09
LO	0.1394	0.00	0.1183	0.00	0.1030	0.00	0.0537	0.04
S4	0.0091	0.03	0.0115	0.42	0.0121	0.00	0.0236	0.01
S3	0.0022	0.00	0.0023	0.19	0.0042	0.00	0.0053	0.01
S2	-0.0012	0.07	0.0027	0.17	0.0033	0.00	0.0055	0.08
SF	-0.0023	0.00	-0.0059	0.00	0.0002	0.75	-0.0023	0.20
DF	0.3813	0.00	0.2232	0.02	0.1242	0.01	0.2026	0.01
# Observations/R^2	963	0.52	195	0.51	1,024	0.57	184	0.28
# Industry Dummies	2	-	2	-	4	-	4	-
NON-ELECTRIC MACHINERY								
LKE	0.0523	0.13	0.0760	0.18	0.0168	0.25	0.0283	0.32
LO	0.1846	0.00	0.1120	0.20	0.1022	0.00	0.0406	0.41
S4	0.0051	0.37	0.0140	0.34	0.0100	0.00	0.0081	0.24
S3	0.0039	0.00	0.0138	0.06	0.0044	0.01	0.0058	0.14
S2	0.0043	0.01	0.0081	0.37	-0.0011	0.59	0.0053	0.30
SF	-0.0087	0.00	-0.0360	0.01	0.0010	0.67	0.0004	0.87
DF	0.1338	0.26	0.3285	0.24	0.0759	0.23	0.1979	0.12
# Observations/R^2	288	0.56	37	0.56	353	0.42	79	0.27
# Industry Dummies	0	-	0	-	2	-	2	-
ELECTRONICS-RELATED MACHINERY								
LKE	0.0061	0.81	0.0658	0.03	0.0895	0.00	0.1412	0.01
LO	0.1292	0.00	0.0971	0.00	0.0953	0.00	0.0580	0.01
S4	0.0107	0.00	-0.0011	0.84	0.0013	0.78	-0.0079	0.29
S3	0.0026	0.00	-0.0033	0.41	0.0020	0.12	-0.0013	0.77
S2	0.0016	0.15	-0.0068	0.13	0.0006	0.72	-0.0055	0.25
SF	-0.0057	0.00	-0.0046	0.00	-0.0005	0.66	-0.0027	0.08
DF	0.2843	0.03	0.2219	0.01	-0.0409	0.57	-0.1135	0.24
# Observations/R^2	366	0.46	179	0.42	357	0.38	188	0.33
# Industry Dummies	0	-	0	-	12	-	12	-
TRANSPORTATION MACHINERY								
LKE	0.0714	0.00	0.1368	0.07	0.0707	0.00	0.0638	0.07
LO	0.1482	0.00	0.0496	0.31	0.1122	0.00	0.0430	0.29
S4	0.0026	0.61	0.0093	0.13	0.0034	0.17	0.0069	0.50
S3	0.0014	0.08	0.0032	0.24	0.0041	0.01	-0.0072	0.22
S2	0.0010	0.28	-0.0078	0.10	0.0047	0.02	-0.0105	0.14
SF	-0.0045	0.01	0.0001	0.97	0.0003	0.82	-0.0015	0.53
DF	0.0908	0.51	0.2282	0.20	-0.0650	0.39	0.0785	0.50
# Observations/R^2	517	0.54	66	0.53	570	0.42	98	0.42
# Industry Dummies	0	-	0	-	5	-	5	-

Note: estimates include 5 regional dummies; see the text for definitions of industry and region dummies; full results including the constant and all dummy coefficients are available from the author.

Appendix Table 4: Estimates of Conditional Multinational-Local Wage Differentials in Malaysia from Equation (1), Other Slope Coefficents, and Equation Indicators; p-values based on robust standard errors (clustered by plant for random effects)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
11 SAMPLE INDUSTRIES COMBINED, NON-EXPORTERS												
LKE	0.0214	0.00	0.0300	0.00	0.0312	0.00	0.0155	0.00	0.0335	0.00	0.0340	0.00
LO	0.1325	0.00	0.1379	0.00	0.1398	0.00	0.1154	0.00	0.1373	0.00	0.1408	0.00
SH	0.0061	0.00	0.0059	0.00	0.0074	0.00	0.0034	0.00	0.0055	0.00	0.0071	0.00
S3	0.0055	0.00	0.0067	0.00	0.0052	0.00	0.0041	0.00	0.0060	0.00	0.0044	0.00
S2	0.0011	0.00	0.0013	0.00	0.0004	0.00	0.0005	0.01	0.0011	0.00	0.0001	0.66
SF	-0.0041	0.00	-0.0034	0.00	-0.0035	0.00	-0.0035	0.00	-0.0027	0.00	-0.0026	0.00
DF	0.0733	0.00	0.0619	0.00	0.0751	0.00	0.0665	0.00	0.0470	0.00	0.0623	0.00
Observations/R^2	11,393	0.51	18,003	0.54	22,945	0.52	11,393	0.50	18,003	0.54	22,945	0.52
#Industry/Region Dummies	47	9	47	9	47	9	47	9	47	9	47	9
Breusch-Pagan test	-	-	-	-	-	-	3,509	0.00	5,316	0.00	6,823	0.00
11 SAMPLE INDUSTRIES COMBINED, EXPORTERS												
LKE	0.0251	0.00	0.0344	0.00	0.0347	0.00	0.0226	0.00	0.0401	0.00	0.0431	0.00
LO	0.0842	0.00	0.0895	0.00	0.0883	0.00	0.0871	0.00	0.0907	0.00	0.0920	0.00
SH	0.0080	0.00	0.0092	0.00	0.0095	0.00	0.0050	0.00	0.0076	0.00	0.0079	0.00
S3	0.0069	0.00	0.0071	0.00	0.0066	0.00	0.0051	0.00	0.0072	0.00	0.0064	0.00
S2	0.0012	0.00	0.0009	0.00	0.0009	0.00	0.0009	0.00	0.0005	0.01	0.0008	0.00
SF	-0.0036	0.00	-0.0032	0.00	-0.0033	0.00	-0.0037	0.00	-0.0027	0.00	-0.0026	0.00
DF	0.0899	0.00	0.0888	0.00	0.0918	0.00	0.0724	0.00	0.0775	0.00	0.0721	0.00
Observations/R^2	6,788	0.62	9,546	0.63	12,421	0.63	6,788	0.63	9,546	0.63	12,421	0.62
#Industry/Region Dummies	47	9	47	9	47	9	47	9	47	9	47	9
Breusch-Pagan test	-	-	-	-	-	-	2,230	0.00	3,536	0.00	5,546	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
FOOD & BEVERAGES, NON-EXPORTERS												
LKE	0.0155	0.00	0.0279	0.00	0.0263	0.00	0.0111	0.03	0.0298	0.00	0.0276	0.00
LO	0.1371	0.00	0.1393	0.00	0.1408	0.00	0.1216	0.00	0.1363	0.00	0.1367	0.00
SH	0.0083	0.00	0.0060	0.00	0.0068	0.00	0.0039	0.00	0.0039	0.00	0.0050	0.00
S3	0.0082	0.00	0.0099	0.00	0.0097	0.00	0.0062	0.00	0.0087	0.00	0.0083	0.00
S2	0.0013	0.00	0.0019	0.00	0.0016	0.00	-0.0001	0.87	0.0013	0.00	0.0009	0.01
SF	-0.0030	0.00	-0.0035	0.00	-0.0032	0.00	-0.0035	0.00	-0.0034	0.00	-0.0032	0.00
DF	0.0840	0.07	0.0967	0.01	0.0948	0.00	0.0619	0.38	0.1075	0.04	0.0783	0.10
Observations/R^2	2,696	0.56	3,814	0.57	4,672	0.56	2,696	0.52	3,814	0.56	4,672	0.55
#Industry/Region Dummies	4	9	4	9	4	9	4	9	4	9	4	9
Breusch-Pagan test	-	-	-	-	-	-	1,129	0.00	1,548	0.00	2,059	0.00
FOOD & BEVERAGES, EXPORTERS												
LKE	0.0584	0.00	0.0498	0.00	0.0492	0.00	0.0620	0.00	0.0756	0.00	0.0754	0.00
LO	0.1252	0.00	0.1271	0.00	0.1233	0.00	0.1279	0.00	0.1176	0.00	0.1145	0.00
SH	0.0114	0.00	0.0132	0.00	0.0128	0.00	0.0055	0.02	0.0107	0.00	0.0103	0.00
S3	0.0021	0.25	0.0030	0.02	0.0033	0.00	0.0022	0.22	0.0043	0.00	0.0046	0.00
S2	0.0005	0.45	-0.0002	0.77	0.0001	0.90	0.0004	0.52	-0.0005	0.43	0.0002	0.74
SF	-0.0025	0.00	-0.0026	0.00	-0.0027	0.00	-0.0030	0.00	-0.0030	0.00	-0.0028	0.00
DF	0.0564	0.08	0.0819	0.00	0.0937	0.00	0.0731	0.04	0.1158	0.03	0.1105	0.01
Observations/R^2	728	0.71	974	0.71	1,245	0.72	728	0.70	974	0.71	1,245	0.72
#Industry/Region Dummies	4	9	4	9	4	9	4	9	4	9	4	9
Breusch-Pagan test	-	-	-	-	-	-	316	0.00	445	0.00	714	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
TEXTILES, APPAREL, LEATHER, FOOTWEAR, NON-EXPORTERS												
LKE	0.0047	0.51	0.0291	0.00	0.0324	0.00	0.0047	0.57	0.0393	0.00	0.0405	0.00
LO	0.1310	0.00	0.1699	0.00	0.1639	0.00	0.1196	0.00	0.1814	0.00	0.1738	0.00
SH	0.0052	0.00	-0.0030	0.09	0.0003	0.87	0.0044	0.01	-0.0011	0.58	0.0032	0.09
S3	0.0079	0.00	0.0074	0.00	0.0042	0.01	0.0057	0.00	0.0059	0.00	0.0012	0.42
S2	0.0005	0.40	0.0008	0.12	-0.0007	0.15	0.0007	0.26	0.0005	0.31	-0.0009	0.10
SF	-0.0024	0.00	-0.0012	0.03	-0.0006	0.21	-0.0028	0.00	-0.0007	0.33	-0.0002	0.81
DF	-0.0024	0.95	-0.0656	0.10	-0.0196	0.56	-0.0645	0.27	-0.0800	0.05	-0.0037	0.94
Observations/R^2	802	0.52	1,379	0.52	1,810	0.47	802	0.52	1,379	0.51	1,810	0.47
#Industry/Region Dummies	5	9	5	9	5	9	5	9	5	9	5	9
Breusch-Pagan test	-	-	-	-	-	-	162	0.00	237	0.00	339	0.00
TEXTILES, APPAREL, LEATHER, FOOTWEAR, EXPORTERS												
LKE	0.0829	0.00	0.0397	0.00	0.0428	0.00	0.0727	0.00	0.0199	0.18	0.0211	0.17
LO	0.0515	0.00	0.0767	0.00	0.0840	0.00	0.0492	0.00	0.0886	0.00	0.0983	0.00
SH	0.0138	0.00	0.0157	0.00	0.0151	0.00	0.0082	0.00	0.0148	0.00	0.0139	0.00
S3	0.0045	0.07	0.0035	0.17	0.0030	0.14	0.0021	0.50	0.0040	0.26	0.0025	0.32
S2	0.0012	0.17	0.0011	0.10	0.0011	0.07	0.0009	0.39	0.0008	0.19	0.0005	0.35
SF	0.0020	0.06	0.0008	0.26	0.0009	0.17	0.0005	0.68	0.0012	0.42	0.0007	0.56
DF	0.0516	0.10	0.0916	0.00	0.0707	0.00	0.0790	0.07	0.1162	0.00	0.0855	0.01
Observations/R^2	487	0.36	738	0.41	955	0.43	487	0.34	738	0.40	955	0.42
#Industry/Region Dummies	5	8	5	8	5	8	5	8	5	8	5	8
Breusch-Pagan test	-	-	-	-	-	-	102	0.00	201	0.00	302	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
WOOD, PAPER, FURNITURE, NON-EXPORTERS												
LKE	0.0221	0.00	0.0289	0.00	0.0293	0.00	0.0242	0.00	0.0291	0.00	0.0310	0.00
LO	0.1124	0.00	0.1225	0.00	0.1291	0.00	0.0982	0.00	0.1331	0.00	0.1354	0.00
SH	0.0106	0.00	0.0115	0.00	0.0136	0.00	0.0046	0.00	0.0102	0.00	0.0120	0.00
S3	0.0000	0.99	0.0026	0.00	0.0006	0.48	-0.0006	0.60	0.0035	0.00	0.0013	0.24
S2	0.0021	0.00	0.0013	0.00	0.0002	0.60	0.0014	0.01	0.0010	0.01	-0.0001	0.85
SF	-0.0039	0.00	-0.0032	0.00	-0.0042	0.00	-0.0029	0.00	-0.0023	0.00	-0.0034	0.00
DF	0.0208	0.54	0.0239	0.41	0.0349	0.17	0.0437	0.22	0.0091	0.79	0.0236	0.43
Observations/R^2	1,929	0.43	3,109	0.45	4,108	0.45	1,929	0.42	3,109	0.45	4,108	0.44
#Industry/Region Dummies	3	9	3	9	3	9	3	9	3	9	3	9
Breusch-Pagan test	-	-	-	-	-	-	470	0.00	863	0.00	1,102	0.00
WOOD, PAPER, FURNITURE, EXPORTERS												
LKE	0.0209	0.01	0.0442	0.00	0.0437	0.00	0.0156	0.15	0.0635	0.00	0.0657	0.00
LO	0.0647	0.00	0.0643	0.00	0.0680	0.00	0.0614	0.00	0.0596	0.00	0.0674	0.00
SH	0.0061	0.00	0.0076	0.00	0.0090	0.00	0.0037	0.04	0.0055	0.13	0.0074	0.02
S3	0.0089	0.00	0.0104	0.00	0.0088	0.00	0.0057	0.00	0.0090	0.00	0.0068	0.00
S2	0.0012	0.02	0.0008	0.09	0.0009	0.02	0.0005	0.32	0.0010	0.05	0.0014	0.00
SF	-0.0031	0.00	-0.0028	0.00	-0.0030	0.00	-0.0028	0.00	-0.0020	0.00	-0.0020	0.00
DF	0.0675	0.00	0.0779	0.00	0.0760	0.00	0.0589	0.05	0.0869	0.00	0.0730	0.00
Observations/R^2	1,424	0.50	2,001	0.52	2,630	0.51	1,424	0.49	2,001	0.51	2,630	0.50
#Industry/Region Dummies	3	9	3	9	3	9	3	9	3	9	3	9
Breusch-Pagan test	-	-	-	-	-	-	356	0.00	497	0.00	829	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
CHEMICALS, NON-EXPORTERS												
LKE	0.0062	0.64	0.0073	0.51	0.0110	0.29	-0.0163	0.21	0.0231	0.02	0.0109	0.39
LO	0.1880	0.00	0.1782	0.00	0.1801	0.00	0.0898	0.00	0.1426	0.00	0.1767	0.00
SH	0.0056	0.25	0.0097	0.00	0.0101	0.00	0.0015	0.63	0.0091	0.00	0.0101	0.00
S3	0.0028	0.30	0.0036	0.00	0.0031	0.00	0.0047	0.11	0.0023	0.16	0.0037	0.05
S2	0.0010	0.24	0.0009	0.10	0.0005	0.32	0.0024	0.00	0.0007	0.40	0.0000	0.97
SF	-0.0060	0.00	-0.0043	0.00	-0.0040	0.00	-0.0051	0.01	-0.0038	0.00	-0.0035	0.01
DF	0.0639	0.24	0.0839	0.01	0.1021	0.00	0.0671	0.17	0.1026	0.03	0.1179	0.00
Observations/R^2	518	0.26	859	0.37	1,083	0.40	518	0.22	859	0.36	1,083	0.40
#Industry/Region Dummies	1	9	1	9	1	9	1	9	1	9	1	9
Breusch-Pagan test	-	-	-	-	-	-	134	0.00	238	0.00	264	0.00
CHEMICALS, EXPORTERS												
LKE	0.0303	0.04	0.0465	0.01	0.0428	0.00	0.0339	0.02	0.0426	0.07	0.0462	0.04
LO	0.1279	0.00	0.1308	0.00	0.1285	0.00	0.1377	0.00	0.1243	0.00	0.1301	0.00
SH	0.0045	0.00	0.0071	0.00	0.0070	0.00	0.0024	0.03	0.0067	0.00	0.0059	0.00
S3	0.0066	0.00	0.0069	0.00	0.0066	0.00	0.0041	0.00	0.0076	0.00	0.0064	0.00
S2	0.0010	0.23	0.0007	0.27	0.0009	0.15	0.0005	0.60	0.0006	0.48	0.0009	0.18
SF	-0.0040	0.00	-0.0030	0.00	-0.0028	0.00	-0.0041	0.01	-0.0021	0.07	-0.0023	0.03
DF	0.0984	0.01	0.0721	0.01	0.0756	0.00	0.0667	0.10	0.0691	0.04	0.0678	0.04
Observations/R^2	476	0.64	685	0.69	849	0.67	476	0.63	685	0.69	849	0.67
#Industry/Region Dummies	1	9	1	9	1	9	1	9	1	9	1	9
Breusch-Pagan test	-	-	-	-	-	-	198	0.00	303	0.00	0	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
RUBBER PRODUCTS, NON-EXPORTERS												
LKE	0.0540	0.01	0.0176	0.07	0.0189	0.01	0.0143	0.47	0.0063	0.43	0.0136	0.04
LO	0.1097	0.00	0.1143	0.00	0.1168	0.00	0.1154	0.00	0.1389	0.00	0.1388	0.00
SH	0.0026	0.51	0.0114	0.00	0.0139	0.00	-0.0021	0.59	0.0125	0.00	0.0147	0.00
S3	0.0052	0.03	0.0056	0.00	0.0023	0.19	0.0035	0.18	0.0055	0.03	-0.0003	0.88
S2	0.0017	0.04	0.0015	0.02	-0.0004	0.54	0.0012	0.14	0.0006	0.46	-0.0003	0.67
SF	-0.0072	0.00	-0.0054	0.00	-0.0060	0.00	-0.0054	0.00	-0.0034	0.00	-0.0044	0.00
DF	0.2639	0.00	0.2318	0.00	0.2497	0.00	0.1592	0.04	0.1866	0.00	0.1662	0.00
Observations/R^2	281	0.53	536	0.50	706	0.47	281	0.49	536	0.48	706	0.45
#Industry/Region Dummies	0	9	0	9	0	9	0	9	0	9	0	9
Breusch-Pagan test	-	-	-	-	-	-	77.33	0.00	171	0.00	220	0.00
RUBBER PRODUCTS, EXPORTERS												
LKE	-0.0136	0.01	-0.0057	0.20	-0.0063	0.09	-0.0110	0.01	0.0050	0.43	0.0039	0.45
LO	0.0713	0.00	0.0734	0.00	0.0794	0.00	0.0688	0.00	0.0810	0.00	0.0912	0.00
SH	0.0117	0.00	0.0125	0.00	0.0129	0.00	0.0099	0.00	0.0111	0.00	0.0113	0.00
S3	0.0076	0.00	0.0069	0.00	0.0075	0.00	0.0061	0.02	0.0070	0.00	0.0068	0.00
S2	0.0014	0.04	0.0005	0.40	0.0008	0.16	0.0009	0.18	0.0009	0.14	0.0006	0.26
SF	-0.0050	0.00	-0.0045	0.00	-0.0046	0.00	-0.0039	0.00	-0.0029	0.00	-0.0028	0.00
DF	0.2084	0.00	0.1816	0.00	0.1830	0.00	0.1616	0.00	0.1354	0.00	0.1145	0.00
Observations/R^2	428	0.52	624	0.51	839	0.49	428	0.51	624	0.49	839	0.47
#Industry/Region Dummies	0	9	0	9	0	9	0	9	0	9	0	9
Breusch-Pagan test	-	-	-	-	-	-	80.77	0.00	156	0.00	248	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
PLASTICS, NON-EXPORTERS												
LKE	0.0053	0.62	0.0237	0.00	0.0263	0.00	0.0074	0.36	0.0303	0.00	0.0339	0.00
LO	0.1079	0.00	0.1208	0.00	0.1197	0.00	0.0841	0.00	0.1166	0.00	0.1185	0.00
SH	0.0077	0.00	0.0107	0.00	0.0128	0.00	0.0023	0.12	0.0097	0.00	0.0127	0.00
S3	0.0091	0.00	0.0058	0.00	0.0044	0.00	0.0060	0.00	0.0046	0.00	0.0031	0.01
S2	0.0002	0.73	0.0005	0.16	-0.0006	0.06	0.0004	0.39	0.0002	0.57	-0.0008	0.03
SF	-0.0043	0.00	-0.0028	0.00	-0.0027	0.00	-0.0041	0.00	-0.0017	0.00	-0.0013	0.05
DF	0.0971	0.01	0.0522	0.05	0.0791	0.00	0.0797	0.08	0.0005	0.99	0.0103	0.76
Observations/R^2	829	0.48	1,429	0.49	1,886	0.47	829	0.45	1,429	0.49	1,886	0.46
#Industry/Region Dummies	0	9	0	9	0	9	0	9	0	9	0	9
Breusch-Pagan test	-	-	-	-	-	-	127	0.00	252	0.00	299	0.00
PLASTICS, EXPORTERS												
LKE	0.0753	0.00	0.0591	0.00	0.0642	0.00	0.0510	0.01	0.0569	0.00	0.0590	0.00
LO	0.0795	0.00	0.0827	0.00	0.0842	0.00	0.0793	0.00	0.0776	0.00	0.0822	0.00
SH	0.0109	0.00	0.0123	0.00	0.0123	0.00	0.0081	0.00	0.0090	0.00	0.0109	0.00
S3	0.0036	0.01	0.0041	0.00	0.0040	0.00	0.0026	0.07	0.0062	0.00	0.0052	0.00
S2	0.0003	0.67	0.0005	0.29	0.0006	0.17	0.0005	0.46	0.0000	0.99	0.0004	0.45
SF	-0.0032	0.00	-0.0032	0.00	-0.0031	0.00	-0.0038	0.00	-0.0030	0.00	-0.0029	0.00
DF	0.0871	0.00	0.0919	0.00	0.0953	0.00	0.0672	0.07	0.0546	0.08	0.0700	0.01
Observations/R^2	615	0.51	946	0.50	1,204	0.50	615	0.50	946	0.49	1,204	0.50
#Industry/Region Dummies	0	9	0	9	0	9	0	9	0	9	0	9
Breusch-Pagan test	-	-	-	-	-	-	137	0.00	273	0.00	403	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
NON-METALLIC MINERAL PRODUCTS, NON-EXPORTERS												
LKE	0.0451	0.00	0.0508	0.00	0.0544	0.00	0.0464	0.00	0.0757	0.00	0.0655	0.00
LO	0.1607	0.00	0.1572	0.00	0.1578	0.00	0.1392	0.00	0.1334	0.00	0.1381	0.00
SH	0.0015	0.27	0.0041	0.01	0.0045	0.00	0.0033	0.01	0.0052	0.00	0.0067	0.00
S3	0.0065	0.00	0.0065	0.00	0.0056	0.00	0.0054	0.00	0.0081	0.00	0.0060	0.00
S2	0.0011	0.13	0.0013	0.02	0.0011	0.05	-0.0001	0.83	0.0012	0.05	0.0006	0.34
SF	-0.0034	0.00	-0.0030	0.00	-0.0026	0.00	-0.0032	0.00	-0.0011	0.26	-0.0011	0.25
DF	0.1136	0.09	0.0915	0.05	0.0910	0.03	0.0949	0.10	-0.0182	0.67	0.0308	0.56
Observations/R^2	927	0.64	1,259	0.67	1,604	0.65	927	0.64	1,259	0.66	1,604	0.64
#Industry/Region Dummies	1	9	1	9	1	9	1	9	1	9	1	9
Breusch-Pagan test	-	-	-	-	-	-	323	0.00	429	0.00	561	0.00
NON-METALLIC MINERAL PRODUCTS, EXPORTERS												
LKE	0.0895	0.00	0.0937	0.00	0.0894	0.00	0.0712	0.00	0.1049	0.00	0.1100	0.00
LO	0.1104	0.00	0.1336	0.00	0.1174	0.00	0.1344	0.00	0.1394	0.00	0.1304	0.00
SH	0.0053	0.01	0.0057	0.00	0.0063	0.00	0.0016	0.21	0.0053	0.00	0.0066	0.00
S3	0.0142	0.00	0.0135	0.00	0.0125	0.00	0.0093	0.00	0.0077	0.00	0.0064	0.00
S2	0.0005	0.59	-0.0015	0.17	-0.0007	0.47	0.0009	0.19	-0.0010	0.30	0.0002	0.78
SF	-0.0003	0.83	-0.0002	0.85	-0.0004	0.59	-0.0013	0.43	-0.0004	0.72	-0.0002	0.90
DF	0.0584	0.25	0.0266	0.54	0.0652	0.10	0.0726	0.19	0.1023	0.16	0.0903	0.15
Observations/R^2	299	0.71	422	0.72	540	0.74	299	0.69	422	0.70	540	0.68
#Industry/Region Dummies	1	9	1	9	1	9	1	9	1	9	1	9
Breusch-Pagan test	-	-	-	-	-	-	166	0.00	218	0.00	371	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
METALS & METAL PRODUCTS, NON-EXPORTERS												
LKE	0.0338	0.00	0.0318	0.00	0.0333	0.00	0.0279	0.01	0.0340	0.00	0.0341	0.00
LO	0.1313	0.00	0.1485	0.00	0.1506	0.00	0.1070	0.00	0.1503	0.00	0.1494	0.00
SH	0.0030	0.00	0.0046	0.00	0.0059	0.00	0.0018	0.02	0.0038	0.00	0.0056	0.00
S3	0.0072	0.00	0.0078	0.00	0.0062	0.00	0.0042	0.00	0.0059	0.00	0.0047	0.00
S2	0.0014	0.00	0.0012	0.00	0.0005	0.08	0.0007	0.05	0.0007	0.04	-0.0001	0.82
SF	-0.0037	0.00	-0.0023	0.00	-0.0031	0.00	-0.0014	0.20	-0.0011	0.16	-0.0015	0.02
DF	0.0500	0.09	0.0594	0.01	0.0845	0.00	0.0629	0.13	0.0748	0.01	0.0957	0.00
Observations/R^2	1,547	0.50	2,652	0.51	3,283	0.49	1,547	0.48	2,652	0.50	3,283	0.48
#Industry/Region Dummies	4	9	4	9	4	9	4	9	4	9	4	9
Breusch-Pagan test	-	-	-	-	-	-	503	0.00	817	0.00	1,030	0.00
METALS & METAL PRODUCTS, EXPORTERS												
LKE	0.0421	0.00	0.0386	0.00	0.0419	0.00	0.0432	0.01	0.0549	0.00	0.0721	0.00
LO	0.0674	0.00	0.0838	0.00	0.0806	0.00	0.0809	0.00	0.0927	0.00	0.0873	0.00
SH	0.0068	0.00	0.0077	0.00	0.0083	0.00	0.0024	0.06	0.0054	0.00	0.0063	0.00
S3	0.0067	0.00	0.0082	0.00	0.0079	0.00	0.0043	0.00	0.0071	0.00	0.0064	0.00
S2	0.0012	0.06	0.0011	0.02	0.0011	0.01	0.0011	0.02	0.0005	0.25	0.0010	0.02
SF	-0.0028	0.00	-0.0026	0.00	-0.0025	0.00	-0.0033	0.00	-0.0015	0.08	-0.0011	0.14
DF	0.0591	0.03	0.0586	0.01	0.0714	0.00	0.0429	0.17	0.0520	0.11	0.0683	0.01
Observations/R^2	694	0.51	1,019	0.52	1,317	0.52	694	0.48	1,019	0.51	1,317	0.50
#Industry/Region Dummies	4	9	4	9	4	9	4	9	4	9	4	9
Breusch-Pagan test	-	-	-	-	-	-	183	0.00	312	0.00	508	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
NON-ELECTRIC MACHINERY, NON-EXPORTERS												
LKE	0.0349	0.01	0.0460	0.00	0.0498	0.00	0.0206	0.07	0.0417	0.00	0.0513	0.00
LO	0.1396	0.00	0.1509	0.00	0.1571	0.00	0.1039	0.00	0.1462	0.00	0.1480	0.00
SH	0.0033	0.06	0.0027	0.14	0.0032	0.03	0.0030	0.03	0.0043	0.00	0.0034	0.03
S3	0.0052	0.00	0.0069	0.00	0.0066	0.00	0.0040	0.01	0.0046	0.00	0.0044	0.00
S2	0.0016	0.03	0.0021	0.00	0.0014	0.01	0.0007	0.35	0.0014	0.02	0.0009	0.11
SF	-0.0031	0.00	-0.0032	0.00	-0.0045	0.00	-0.0010	0.47	-0.0018	0.12	-0.0023	0.08
DF	0.1464	0.05	0.1422	0.00	0.1229	0.00	0.1585	0.11	0.2070	0.00	0.2030	0.00
Observations/R^2	583	0.43	1,034	0.44	1,279	0.44	583	0.42	1,034	0.43	1,279	0.43
#Industry/Region Dummies	2	9	2	9	2	9	2	9	2	9	2	9
Breusch-Pagan test	-	-	-	-	-	-	174	0.00	283	0.00	342	0.00
NON-ELECTRIC MACHINERY, EXPORTERS												
LKE	0.0405	0.15	0.0351	0.03	0.0355	0.02	0.0320	0.36	0.0362	0.00	0.0344	0.00
LO	0.0590	0.00	0.0633	0.00	0.0655	0.00	0.0771	0.00	0.0908	0.00	0.1010	0.00
SH	0.0045	0.01	0.0065	0.00	0.0063	0.00	0.0041	0.01	0.0057	0.00	0.0047	0.00
S3	0.0071	0.00	0.0070	0.00	0.0062	0.00	0.0061	0.00	0.0065	0.00	0.0061	0.00
S2	0.0029	0.01	0.0049	0.00	0.0033	0.00	0.0019	0.07	0.0025	0.02	0.0019	0.03
SF	-0.0090	0.00	-0.0088	0.00	-0.0080	0.00	-0.0075	0.00	-0.0071	0.01	-0.0065	0.00
DF	0.0654	0.16	0.0380	0.39	0.0548	0.17	0.0010	0.99	-0.0019	0.97	0.0273	0.58
Observations/R^2	284	0.48	414	0.51	537	0.47	284	0.46	414	0.48	537	0.45
#Industry/Region Dummies	2	9	2	9	2	9	2	9	2	9	2	9
Breusch-Pagan test	-	-	-	-	-	-	77.05	0.00	144	0.00	232	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
ELECTRONICS-RELATED MACHINERY, NON-EXPORTERS												
LKE	0.0154	0.03	0.0192	0.00	0.0233	0.00	0.0160	0.04	0.0247	0.00	0.0265	0.00
LO	0.1194	0.00	0.1044	0.00	0.1113	0.00	0.1102	0.00	0.0940	0.00	0.1088	0.00
SH	0.0090	0.00	0.0072	0.00	0.0091	0.00	0.0041	0.01	0.0060	0.00	0.0084	0.00
S3	0.0022	0.07	0.0058	0.00	0.0034	0.00	0.0026	0.06	0.0065	0.00	0.0036	0.01
S2	-0.0009	0.12	0.0002	0.69	-0.0002	0.57	-0.0005	0.37	0.0011	0.03	0.0001	0.84
SF	-0.0056	0.00	-0.0049	0.00	-0.0047	0.00	-0.0050	0.00	-0.0044	0.00	-0.0040	0.00
DF	0.1072	0.00	0.0636	0.01	0.0528	0.02	0.0795	0.04	0.0493	0.13	0.0218	0.47
Observations/R^2	669	0.62	1,193	0.59	1,582	0.57	669	0.61	1,193	0.59	1,582	0.57
#Industry/Region Dummies	12	9	12	9	12	9	12	9	12	9	12	9
Breusch-Pagan test	-	-	-	-	-	-	130	0.00	271	0.00	388	0.00
ELECTRONICS-RELATED MACHINERY, EXPORTERS												
LKE	0.0456	0.01	0.0511	0.00	0.0555	0.00	0.0396	0.12	0.0534	0.00	0.0640	0.00
LO	0.0680	0.00	0.0736	0.00	0.0714	0.00	0.0710	0.00	0.0764	0.00	0.0748	0.00
SH	0.0070	0.00	0.0060	0.00	0.0067	0.00	0.0058	0.00	0.0059	0.00	0.0057	0.00
S3	0.0067	0.00	0.0077	0.00	0.0069	0.00	0.0051	0.00	0.0074	0.00	0.0067	0.00
S2	0.0008	0.09	0.0001	0.70	0.0005	0.10	0.0010	0.01	-0.0003	0.56	0.0002	0.61
SF	-0.0024	0.00	-0.0025	0.00	-0.0026	0.00	-0.0028	0.00	-0.0024	0.00	-0.0025	0.00
DF	0.0299	0.17	0.0395	0.03	0.0419	0.01	0.0165	0.47	0.0272	0.23	0.0304	0.12
Observations/R^2	1,084	0.52	1,469	0.56	1,962	0.56	1,084	0.51	1,469	0.55	1,962	0.56
#Industry/Region Dummies	12	9	12	9	12	9	12	9	12	9	12	9
Breusch-Pagan test	-	-	-	-	-	-	177	0.00	392	0.00	550	0.00

Appendix Table 4 (continued)

Industry, independent variable, indicator	Pooled OLS						Random Effects					
	Lagged		Contemporaneous				Lagged		Contemporaneous			
	2001-2004		2001-2004		2000-2004		2001-2004		2001-2004		2000-2004	
	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value	Coeff.	P-value
TRANSPORTATION MACHINERY, NON-EXPORTERS												
LKE	0.0219	0.11	0.0234	0.01	0.0281	0.00	0.0045	0.83	0.0196	0.07	0.0243	0.02
LO	0.1251	0.00	0.1212	0.00	0.1216	0.00	0.1255	0.00	0.1197	0.00	0.1260	0.00
SH	0.0050	0.03	0.0080	0.00	0.0089	0.00	0.0062	0.00	0.0077	0.00	0.0083	0.00
S3	0.0063	0.01	0.0028	0.05	0.0010	0.45	0.0042	0.08	0.0025	0.08	0.0006	0.70
S2	-0.0009	0.38	0.0010	0.19	0.0002	0.81	-0.0009	0.27	0.0013	0.06	0.0006	0.35
SF	-0.0043	0.01	-0.0025	0.04	-0.0025	0.02	-0.0042	0.00	-0.0024	0.03	-0.0022	0.06
DF	0.1142	0.22	0.1109	0.10	0.1196	0.04	0.0942	0.41	0.1271	0.11	0.1674	0.02
Observations/R^2	523	0.42	739	0.44	932	0.40	523	0.41	739	0.44	932	0.40
#Industry/Region Dummies	5	9	5	9	5	9	5	9	5	9	5	9
Breusch-Pagan test	-	-	-	-	-	-	92.11	0.00	154	0.00	203	0.00
TRANSPORTATION MACHINERY, EXPORTERS												
LKE	-0.0121	0.58	0.0068	0.74	0.0189	0.27	-0.0120	0.68	0.0769	0.02	0.0812	0.01
LO	0.1032	0.00	0.0919	0.00	0.0918	0.00	0.0917	0.00	0.0759	0.00	0.0697	0.00
SH	0.0024	0.26	0.0044	0.05	0.0054	0.01	0.0009	0.59	0.0033	0.25	0.0039	0.15
S3	0.0050	0.08	0.0076	0.01	0.0069	0.01	0.0025	0.27	0.0069	0.08	0.0064	0.06
S2	0.0012	0.19	0.0010	0.23	0.0008	0.27	0.0004	0.58	0.0010	0.31	0.0007	0.39
SF	-0.0039	0.02	-0.0042	0.01	-0.0037	0.00	-0.0022	0.24	-0.0010	0.74	-0.0026	0.27
DF	0.1206	0.10	0.1282	0.04	0.1368	0.01	0.0786	0.34	0.0283	0.71	0.0674	0.32
Observations/R^2	191	0.64	274	0.58	343	0.59	191	0.62	274	0.54	343	0.57
#Industry/Region Dummies	5	9	5	9	5	9	5	9	5	9	5	9
Breusch-Pagan test	-	-	-	-	-	-	66.52	0.00	74.76	0.00	96.42	0.00

Note: estimates include 9 regional dummies; see the text for definitions of industry and region dummies; full results including the constant and all dummy coefficients are available from the author.

Appendix Table 5: Industry definitions

Industry	ISIC revision 2 Indonesia 1996	ISIC revision 3 Indonesia 2006 Malaysia
11 sample industries		
Food & beverages	311+312+313	15
Textiles, apparel, leather, footwear	321+322+323+324	17+18+19
Wood, paper, furniture	331+341+332	20+21+361
Chemicals	351+352	24
Rubber products	355	251
Plastics	356	252
Non-metallic mineral products	36	26
Metals & metal products	37+381	27+28
Nonelectric machinery	3821+3822+3823+3824+3829	29
Electronics-related machinery	3825+383+385	30+31+32+33
Transportation machinery	384	34+35
5 excluded industries		
Tobacco	314	16
Printing & publishing	342	22
Oil & coal products	353+354	23
Miscellaneous manufacturing	39	369+37
Recycling	na	37

Note: There are numerous discrepancies between revisions 2 and 3 at the 3-, 4-, or 5-digit levels in revisions 2 and 3 that are impossible to resolve precisely; correspondingly, concordances often divide up categories arbitrarily among categories in the other classification; in 2006, 4-digit information is not reported for several plants in smaller 4-digit categories with relatively few plants.

Wages and Worker Quality in
Foreign Multinationals and Local Manufacturing Plants in Indonesia and Malaysia

平成 26 年 3 月発行

発行所　公益財団法人国際東アジア研究センター
〒803-0814　北九州市小倉北区大手町 11 番 4 号
Tel：093-583-6202／Fax：093-583-6576，4602
URL：http://www.icsead.or.jp
E-mail：office@icsead.or.jp