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Asian Growth Research Institute

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Abstract

Takatoshi Ito, who passed away in September 2025, was a leading scholar of macroeconomics and international finance. This column, written by a group of friends and colleagues, outlines his many contributions in a lifetime of research, teaching and policy-making in Japan, the United States and around the world. His work is particularly notable for challenging the widespread perception that standard economic analysis is somehow ill-suited for understanding the Japanese economy. Indeed, using the discipline's rigorous tools, he illuminated challenges that Japan faced earlier and more acutely than other countries – including population decline and ageing, ballooning government debt, the zero lower bound and unconventional monetary policies, real estate bubbles and their collapse, and the banking sector's problem of non-performing loans.

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Introduction

Takatoshi Ito – affectionately known as Taka among his friends and fellow researchers – opened new frontiers in the study of the Japanese economy throughout a lifetime of research, teaching and policy-making in Japan, the United States and around the world. He passed away on 20 September 2025, when he was still at the height of his career, showing no signs of slowing down.

For many years, the Japanese economy was regarded as exceptional – so exceptional that standard economic theories and analytical methods were thought not to apply. Taka challenged this perception. Using the rigorous tools of economics, particularly his expertise in macroeconomics and international finance, he illuminated challenges that Japan faced earlier and more acutely than other countries, such as population decline and ageing, ballooning government debt, the zero lower bound and unconventional monetary policies, real estate bubbles and their collapse, and the banking sector's problem of non-performing loans. Today, economists around the world discuss these challenges using a shared language, and this intellectual foundation owes much to Taka's pioneering work.

Professional career

Born in Hokkaido, Japan's northernmost island, in 1950, Taka grew up in an academic environment. His father, a management scholar, served as president of Otaru University of Commerce. It was in his father's study, Taka once recalled, that he first encountered Keynes's *General Theory of Employment, Interest, and Money*.

Taka studied mathematical economics at Hitotsubashi University under professors such as Fukukane Nikaidō, earning his bachelor's and master's degrees there in 1973 and 1975, respectively. He later earned his PhD in economics from Harvard University in 1979, where he was supervised by Nobel laureate Kenneth Arrow. Some of us have known him since his graduate student days, and we can attest that both his classmates and professors regarded him as being one of the most brilliant and promising members of his cohort, with wide-ranging interests that characterised his subsequent career. Along with Fumio Hayashi, Kazuo Ueda and Hiroshi Yoshikawa, he pioneered the path of Japanese students of economics coming to top PhD programs in the US.

Taka began his academic career in 1979 at the University of Minnesota, where he

earned tenure before returning to Japan. Over the following decades, he taught and conducted research at the Institute of Economic Research at Hitotsubashi University, the Research Center for Advanced Science and Technology, the Graduate School of Economics and the Graduate School of Public Policy (where he served one term as dean) at the University of Tokyo, and the National Graduate Institute for Policy Studies.

In 2015, Taka once again crossed the Pacific, joining Columbia University's School of International and Public Affairs as a professor and serving as director of the program on public pension and sovereign funds at the Center on Japanese Economy and Business (CJEB) at Columbia Business School.

Linking economists in Japan, East Asia and the West

Larry Summers, Taka's classmate at Harvard, once described him as follows: 'He has a network of colleagues who respect him greatly all over the world. He combines academic excellence with a steady, sober, central bankerly temper.' A hallmark of Taka's scholarly career was his ability to build networks that bridged divides – between Japan and the wider world, and between the realms of academic research and practical policy.

Among Taka's many contributions connecting Japan with the international community, perhaps the most significant was *The Japanese Economy* (Ito 1992; Ito and Hoshi 2020), the most widely used textbook for courses on the Japanese economy, which we discuss in more detail below.

Other ways in which Taka stimulated research on the Japanese economy was by serving as editor-in-chief of the *Journal of the Japanese and International Economies*, the most prestigious journal devoted to the Japanese economy, and as a co-organiser of the Japan Project meeting, probably the oldest and largest annual conference devoted to the Japanese economy, which was started by Anil Kashyap and which in recent years has been held every July in Tokyo. It is organised by the National Bureau of Economic Research (NBER) and (at various times) the Australia-Japan Research Centre at Australian National University, CEPR, CJEB, the European Institute of Japanese Studies at the Stockholm School of Economics, and the Center for Advanced Research in Finance at the University of Tokyo.

At Columbia, Taka became a core member of CJEB, where he helped to organise large conferences and popular webinars that brought together current and former

academic, business and government leaders, including prime minister Shinzo Abe, deputy prime minister Taro Aso, former Federal Reserve chair Janet Yellen and Bank of Japan governor Haruhiko Kuroda, among many others.

Taka also played a major role in stimulating research on the Asian economies more generally in at least two ways. First, he launched the East Asia Seminar on Economics (EASE) in 1990 with Anne Krueger under the auspices of the NBER, of which he was a research associate for many years. After Krueger moved to the International Monetary Fund (IMF), Taka continued to co-chair the seminar with Andrew Rose.

EASE fostered collaborations among economists based in North America and those based in East and Southeast Asia. Over the years, the seminar's proceedings were published in 20 volumes by the University of Chicago under the title *NBER-East Asia Seminar on Economics*, making it one of the Bureau's longest-running initiatives. Through EASE, Taka created a vibrant intellectual forum connecting emerging Asian economists with their Western counterparts, helping to elevate the study of East and Southeast Asian economies to global prominence.

Second, he served as co-editor of the *Asian Economic Policy Review* for nearly two decades from its inception in 2006. This journal, which is published by Wiley with funding from the Japan Center for Economic Research, a think tank of the Nihon Keizai Shimbun, is unique in that it consists exclusively of papers presented at semi-annual conferences about important and timely policy issues, and it brings together leading economists from around the world to analyse the challenges facing Japan and other Asian economies. This journal has further contributed to promoting collaborations and increasing mutual understanding among economists in Japan, Asia and the rest of the world.

A mediator between economic theory and policy practice

Taka also made vital contributions to public policy. He served as senior adviser in the IMF's research department, deputy vice-minister of finance for international affairs, member of the Japanese prime minister's Council on Economic and Fiscal Policy, and chair of the Council on Customs, Tariff, Foreign Exchange and Other Transactions, among other posts. In these roles, he applied economic principles to real-world policy-making challenges with clarity and integrity.

Among his many accomplishments, one that Taka himself spoke of with particular pride, was leading the 2013 reform of Japan's Government Pension Investment Fund

(GPIF). Confronted with Japan's ageing population and shrinking workforce, he recognised the need to secure the long-term sustainability of the public pension system. He advocated diversifying GPIF's portfolio – long dominated by domestic bonds – towards equities and foreign assets. Taka not only crafted the reform's intellectual foundation but also played a central role in persuading policy-makers and stakeholders who were initially resistant to the reform.

Taka earned many honours during his career, including the Medal with Purple Ribbon for exceptional academic achievement in 2011 and the Order of the Sacred Treasure, Gold Rings with Neck Ribbon, in 2024, both from the Japanese government, and an honorary doctorate from the University of Chile in 2015. He was also elected as a fellow of the Econometric Society in 1992 when he was only 42 and served as a council member of the Econometric Society for Asia for a total of 10 years. In addition, he served as vice-president and president of the Japanese Economic Association and was a member of the Eminent Persons Group of the G20.

Turning to Taka's research accomplishments, according to RePEc, he is among the most highly ranked Japanese economists and is in the top 0.5% of economists worldwide, regardless of which criterion is used. According to Google Scholar, his works have been cited 23,201 times, his h-index is 66 (meaning that he has 66 works that have been cited at least 66 times) and his i10 index is 344 (meaning that he has 344 works that have been cited at least 10 times) (as of 28 October 2025). Moreover, he has made pathbreaking contributions to a broad range of topics in economics, as we discuss in more detail below.

Studying the Japanese economy

Taka's early empirical research, published in *Economic Studies Quarterly* (now known as the *Japanese Economic Review*) in 1986, focused on Japan's capital controls and interest rate parity (Ito 1986). By the late 1980s, his publication list included extensive empirical research on various aspects of the Japanese economy. The topics included political business cycles under parliamentary cabinet systems, Japanese monetary policy, Japan's fiscal consolidation in the 1980s, Japanese labour practices, analyses of Japan's real estate markets (especially residential), and Japanese household saving and bequest motives.

By the early 1990s, Taka had become a leading authority on the Japanese economy. This culminated in the publication of *The Japanese Economy* (Ito 1992), which summarised his work up to that point. The book is, in part, a textbook on the Japanese

economy based on his lecture notes from his time at Harvard and Minnesota. At the same time, nearly every chapter serves as an extremely useful and insightful summary of its respective research topic, often based on Taka's own research achievements.

The book remains an essential reference for researchers focusing on any topic related to the Japanese economy. Indeed, until its publication, the Japanese economy had often been dismissed abroad as being unique or exceptional, beyond the reach of standard economic theory. Throughout the book, Taka demonstrated that the Japanese economy could indeed be understood through the lens of conventional economic theory, thereby shaping the direction of subsequent research on the Japanese economy for decades to come.

For example, in the chapter on Japan's distribution sector, Taka used theory and data to examine the prevailing view that Japan's small-scale retail outlets and multilayered wholesale system were less efficient than those in other countries. At a time when Japan's prices were notably higher and often blamed on distribution inefficiencies, his empirical analysis was particularly significant. Using three-digit SIC data, he compared value added, gross margins, operating expenses and labour costs between Japan and the US, finding no proof of lower efficiency in Japan's distribution sector.

Instead, he argued that the small size of retail outlets was an optimal response to Japan's structural and spatial limitations, such as limited household storage space that led to frequent, small-volume purchases. Even today, the sector faces new obstacles – delayed digital adoption and labour shortages – but Taka's analysis remains a key reference, continuing to influence research and policy discussions on the country's distribution efficiency.

Reviewers such as Paul Sheard (1994) have emphasised the book's 'impressive and authoritative' synthesis of Japan's post-war growth, macroeconomic policy and institutional structure. The macroeconomic chapters received the most praise, particularly their analysis of growth, business cycles, monetary and fiscal policy, and Japan's exchange rate policy in the context of the Plaza Accord.

The book sparked interest in the Japanese economy, making it accessible to any researcher trained in mainstream economics and liberating it from the sole domain of Japanologists. Inspired by Taka's analysis, economists in East and Southeast Asian countries that experienced remarkable economic growth and success in the 1980s and 1990s became more willing to analyse their own economies within the framework of

mainstream economics, coming to regard it as a matter of course. Taka's role as a policy adviser in Southeast Asian countries such as Indonesia, Myanmar, South Korea and Thailand – as well as the fact that the Chinese translation of the second edition of his book was published before the Japanese edition – speaks to the extent of his influence.

In retrospect, the chapter on asset prices and real estate was timely when the book was published in 1991, but it was quickly rendered obsolete. This was due to the collapse of Japan's asset bubble in the early 1990s and the subsequent period of stagnation and deflationary pressure, later termed Japan's 'lost two decades'.

A much-anticipated second edition (Ito and Hoshi 2020) was finally published in 2020 with Takeo Hoshi as co-author. This edition includes discussions of topics such as the impact of Japan's rapidly ageing population on its pension and social security systems, and the altered Japan-US economic relationship due to China's rise. It also adds a new chapter devoted to the chronology of the lost two decades, as well as a discussion of Japan's policy responses.

Analysing monetary policy

Taka was deeply involved in shaping Japan's economic policy in various capacities, but his most prominent role was in leading both domestic and international discussions on the conduct of monetary policy by the Bank of Japan. Two books he co-authored with Thomas Cargill and Michael Hutchison conducted a comprehensive and critical examination of Japan's monetary policy from multiple perspectives (Cargill et al. 1997, 2001). These volumes have since become essential reading for scholars and practitioners seeking to understand the evolution of Japanese monetary policy.

Among the topics that most strongly captured Taka's interest was inflation targeting. He later recalled that his interest originated in 1997, when, as an IMF adviser, he participated in the organisation's Article IV Consultation mission to Canada – a country that had already adopted an inflation-targeting framework. In 1999, Taka published an article in the *Financial Times* (Ito 1999) urging the Bank of Japan to adopt inflation targeting. This marked the beginning of his sustained and influential advocacy – both in Japan and abroad – for the adoption of an explicit inflation target.

At that time, the Bank of Japan had already introduced a zero-interest rate policy but was still struggling with persistent deflation. Amid growing pressures on the Bank of

Japan, several economists – including Paul Krugman – argued that Japan could escape deflation by committing to a higher inflation target.

But Taka's argument was distinct. He contended that by setting a numerical inflation target and publicly committing to it, the Bank of Japan could insulate itself from excessive political intervention – what he called 'shaking off the political sharks'. At the same time, such a framework would ensure the Bank of Japan's instrument independence, allowing it to choose the appropriate policy tools to achieve the announced target. He laid out his proposed framework for Japanese monetary policy in a chapter co-authored with Frederic Mishkin in a book that he edited with Hugh Patrick and David Weinstein (Ito et al. 2005).

Ultimately, the Bank of Japan adopted an inflation-targeting framework in January 2013. Under the then-new governor, Haruhiko Kuroda, the Bank began an unprecedented phase of monetary easing, using unconventional policy tools to reach the 2% inflation target. Although inflation stayed below the target during a decade of monetary easing, starting in the spring of 2022, post-pandemic global inflation pressures began to spill over into Japan, and a more sustained price inflation took hold.

In a paper completed from his hospital bed in June 2025, Taka assessed Japan's progress towards the normalisation of inflation and monetary policy (Ito 2025). While he welcomed these developments, he emphasised that achieving a stable 2% inflation rate would require institutionalising annual wage increases through *shuntō* (Spring wage negotiations). At present, Japan's inflation rate has remained above the 2% target for an extended period. Thus, inflation targeting has been fulfilling precisely the role that Taka envisioned: shielding the Bank of Japan from political interference.

Understanding exchange rate fluctuations, financial market microstructure and choice of invoicing currency

Taka's exploration of the microstructure of foreign exchange markets began in the late 1980s, a formative period for the field. He believed that even seemingly random, short-term price fluctuations – often dismissed as mere 'noise' – could, when carefully analysed, reveal the economic principles shaping traders' behaviour and the incentive structures embedded in market institutions. This insight allowed him to connect macroeconomic fundamentals with exchange rate dynamics and to design models that explained short-term fluctuations with greater precision. Within this

emerging area of inquiry, Taka played a truly pioneering role.

Among Taka's most influential and most frequently cited works (co-authored with Nobel laureate Robert Engle), he used GARCH models to show that volatility migrates across markets such as New York, Europe and Tokyo like 'meteor showers' (Engle et al. 1990). This work extended his earlier collaboration with Vance Roley (Ito and Roley 1987) and was followed by Lin et al. (1994), which documented the international transmission of volatility between the New York and Tokyo stock exchanges. These studies laid the empirical foundations for key questions that continue to define market microstructure research – such as trading-hour differentials, overlapping listings and market fragmentation.

A further landmark paper (Ito et al. 1998) examined how changes in Tokyo's trading hours altered volatility structures, uncovering price formation mechanisms not explained by public information alone. This study foreshadowed later research by Richard Lyons and others (Evans and Lyons 2002) emphasising the role of order flow in exchange rate determination, and it marked a paradigm shift in understanding exchange rate dynamics.

Taka was also deeply committed to improving the quality of market data. In Goodhart et al. (1996), he and his co-authors manually extracted transaction prices from videotaped Reuters screens to compare them with quoted prices – a remarkable methodological innovation at the time. Later, as high-frequency data became available, he and his collaborators examined intraday market seasonality (Ito and Hashimoto 2006), and institutional effects related to Tokyo's exchange rate fixing (Ito and Yamada 2017).

As the field evolved from theory-driven inquiry in the 1980s to large-scale empirical analysis in the 2000s, Taka remained a central figure. His work on the Tokyo market's distinctive features paralleled the market's own transformation over nearly half a century. His intellectual rigour, creativity and policy insight earned deep respect from both scholars and practitioners, leaving a lasting bridge between economic theory and market practice.

Taka also made pioneering contributions to the study of foreign exchange interventions, shaping the direction of subsequent research in the field. From 1999 to 2001, Taka served as deputy vice-minister of finance for international affairs at Japan's Ministry of Finance. Although this position did not directly involve decision-making regarding foreign exchange interventions, his close interactions with figures

such as Haruhiko Kuroda – then vice- minister of finance for international affairs and later Bank of Japan governor – allowed him to gain deep, practical insights into the conduct of interventions and their impact on exchange rate dynamics. Taka later told his students that these experiences profoundly shaped his subsequent academic research on foreign exchange market interventions.

In 2001, Japan's Ministry of Finance released – for the first time – daily data on foreign exchange intervention amounts covering the preceding decade. Ito (2003) was the first study to make use of this dataset to estimate the effects and profitability of official interventions. This analysis demonstrated that Japan's monetary authorities sold US dollars during periods of dollar appreciation and purchased dollars during periods of dollar depreciation, thereby contributing to exchange rate stabilisation while simultaneously generating profits.

This study also revealed a structural evolution in the nature of intervention operations. In the early 1990s, interventions were relatively small in scale but frequent, whereas in the subsequent period they became large-scale yet infrequent – a transformation later analysed in greater detail by Ito and Yabu (2007). In contemporary Japan, this latter pattern of large-scale and infrequent interventions has remained the dominant operational strategy. This approach embodies Taka's insight that rare but substantial interventions can exert a stronger influence on exchange rates by altering market participants' expectations.

Taka also made fundamental contributions to research on the choice of invoicing currency in international trade. It is well-established that Japanese exports to the United States are typically invoiced in dollars. Even in exports to Asian markets, Japanese firms tend to use the dollar more frequently than the Japanese yen as the invoicing currency. But the question of why the dollar predominates in Japanese exports remains an open and important question in international economics.

To address this question, Taka initiated a research project on the invoice currency choices of Japanese firms. His first investigation, based on interviews with Japanese machinery manufacturers conducted in 2007 (Ito et al. 2012), revealed that Japanese parent firms exhibit a strong tendency to assume exchange rate risk by invoicing in the importer's currency. Moreover, they tend not to adjust export prices in response to exchange rate fluctuations – behaviour consistent with the pricing-to-market (PTM) hypothesis widely discussed in the literature.

Building on this foundation, Taka launched a large-scale questionnaire survey of

Japanese manufacturing firms (Ito et al. 2018) and later sought to advance this research using transaction-level customs data. After years of persistent requests to the customs authorities, access was finally granted in 2022. Using these newly available data, Taka and his collaborators showed that intra-firm trade increases the likelihood of dollar invoicing and promotes PTM-type pricing strategies, helping to explain why Japanese exports do not necessarily rise when the yen depreciates.

Concluding remarks

At the time of his untimely passing, Taka was hard at work co-editing the *Oxford Handbook of the Japanese Economy* with Jennifer Corbett and John Tang. Many of the most prominent Japanese and foreign experts on the Japanese economy have contributed chapters about their areas of expertise, and several conferences have been held bringing together the authors of individual chapters.

It is unfortunate that Taka will not be able to hold this volume in his hands, but his co-authors are striving to fill his large shoes, and the book is scheduled to be published in 2026 by Oxford University Press. There is no doubt that this handbook will further solidify the economic profession's understanding of the workings of the Japanese economy.

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