Article Type: Book Review

Book review for *Economic Record*

Title: *Regional Inequality and Industrial Structure in Japan: 1874-2008*

Authors: Kyoji Fukao, Jean-Pascal Bassino, Tatsuji Makino, Ralph Paprzycki, Tokihiko Settsu, Masanori Takashima, and Joji Tokui

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Biographical statement:

John P. Tang is a senior lecturer of economics in the Research School of Economics at the Australian National University. His research interests include Japanese economic history, international trade, and growth and development. His publications include articles in the *Journal of Economic History*, the *Economic History Review*, the *Financial History Review*, and *Ecological Economics*. He also directs the Centre for Economic History at the Australian National University.

Review text (1236 words):

Income inequality has in recent years received considerable attention, with many studies attempting to identify its causes within and between countries. Given this context, Kyoji Fukao and his coauthors have produced a timely volume that documents Japanese regional income inequality spanning the country's rapid industrialization in the late 1800s to its economic stagnation in the present-day. In putting together this book, Fukao et al address some basic questions about long-run Japanese economic growth: did income inequality increase (and then decrease) as Japan grew; and what were the determinants to regional trends? The authors base their analysis on a trove of painstakingly assembled data that have two novel

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features: the subnational economic indicators disaggregated by industry and the extraordinary length of coverage. These are documented in the appendices and bibliography, which will help ensure a long shelf life for the volume. This study not only contributes to understanding how one of the world's leading economies overcame rising inequality during its passage through industrialization, but also serves as a reference for countries seeking to emulate or avoid different stages of the Japanese experience.

While most economists are aware that Japan experienced unprecedented growth at the turn of the twentieth century and continued to develop following World War Two, less clear is what occurred at the regional level. Motivating Fukao et al's analysis and data collection is Simon Kuznets' hypothesis that regional income inequality follows an inverted U-shaped curve as an economy develops. In Japan's case, this corresponded with structural changes in the economy (e.g., labor reallocation between sectors, capital accumulation, and industrial agglomeration) that initially increased regional disparities and were gradually remedied by factor price differentials, migration, and government policies. Over seven chapters and four appendices, the authors present a broad overview of the Japanese experience, then drill down into the four topics of industrial structure, migration, regional factor inputs, and sectoral differences that contributed to the patterns observed starting from the late nineteenth century.

Fukao et al present their arguments methodically, with the first two chapters showing regional inequality rose significantly before the Second World War (albeit starting from a fairly equitable base); declined by a similar magnitude during the next two decades of high growth; and then began to increase modestly starting in the 1970s. The authors illustrate this trend both in tables and figures using data for benchmark years before 1955 (i.e., 1874, 1890, 1909, 1925, 1935, 1940, 1950) and periodically (annual or quinquennial) thereafter. Their findings in early years are

corroborated by alternative regional measures of living standards, such as average male height and rice consumption.¹

What accounts for the initial rise in regional inequality? Chapter 3 details what may be the most obvious factor in the pre-war period, the shift away from primary sector to industrial activity. This transition raised average income levels, but exacerbated regional differences as manufacturing agglomerated in urban areas, increasing their relative wealth, and tertiary sectors with high productivity were also found in richer prefectures. The concentration of physical capital, technology, and skilled labor may have owed partly to specialization and path dependence as well as to price differences between primary and secondary products, but the authors were constrained by the detail available in pre-war data.

Softening this growing inequality was migration, which reduced relative factor prices between regions and increased productivity across sectors even as economic activity and population continued to concentrate along the coast between Tokyo and Osaka. More surprising is that while the authors find that migrants tended to be younger, they were no better educated, and thus had an impact largely on demographic trends throughout the period. Their contribution to regional income convergence, however, started to diminish in the 1970s due to excess demand for housing in the core prefectures of Tokyo and Osaka, with neighboring areas gaining migrants commuting to those cities as a result but not their generated output locally.

Even with the mitigating role of migration, Fukao et al find that regional income inequality began to decline only after the Pacific War when total factor productivity and capital-labor differences narrowed between prefectures. As described in chapter 5, these two forces were due to labor shortages in established industrial

¹ The richest prefectures throughout the period are the greater metropolitan areas of Tokyo and Osaka, although prefectures in the lower income distribution exhibit some churn over time.

areas, environmental protection policies encouraging rural industrialization, the expansion of high-productivity firms in those areas, and public infrastructure investment and wealth redistribution. The following chapter explains how in the last four decades, prefectures have seen a homogenization of industrial structure, but little convergence in productivity differences within industries, which may be due to higher labor quality in wealthier prefectures. Coupled with the shift toward skill intensive services and high domestic factor mobility, regional income inequality has risen and may continue to do so, and the authors discuss extensions for their research in the concluding chapter.

What Fukao et al accomplish in their book is commendable, bringing together disparate historical data sources to provide a consistent and well-defined narrative about the country's long-term economic development. At the same time, this focus may come at the cost of depth and complexity, with discussion on some topics tantalizingly brief. The latter includes the roles of international trade and foreign policy on Japan's industrial structure, technological and productivity differences, and migration patterns, since these would likely have influenced the types of sectors to emerge and the location decisions of firms and workers. Also somewhat circumscribed is discussion about the government's involvement in abetting or aggravating regional differences in the pre- and postwar periods. Given its pervasive influence throughout the decades, this could be shown through the share of revenues transferred between regions and expenditures on public works, infrastructure, and education.

Regarding methodology, the authors compare the top and bottom quintiles of prefectures ranked by income. However, since these quintiles use thresholds based on cumulative populations, their composition of prefectures also changes, with Tokyo and Osaka increasingly dominating the top-performing bracket (given their population inflows and above-average birth rates) while the lower bracket experiences significant turnover. Aside from whether this approach introduces a comparative inconsistency over time, it also raises the question whether a

prefectural versus a per capita comparison is more meaningful. In other words, should one care more about the relatively few Okinawans and Kagoshimans than the larger numbers of poor Tokyoites, and does regional inequality matter with mobile labor and capital? Finally, how valid is the Kuznets relationship in the very long run? Instead of an inverted U-shaped curve, Japan's past 130 years looks more like a sine wave, with the pre-war and current periods of rising inequality coinciding with globalization. Based on this evidence, what historical lessons can one draw on to tackle the current economic situation?

Overall, the book is a worthy companion to other English-language studies on Japanese economic growth, such as Ohkawa and Shinohara (1979), Ohkawa and Rosovsky (1972), and Rosovsky (1961), with the added value of regional disaggregation and the additional decades of data. These data will also be available for public access in the near future, which will allow further scholarship on the topics identified by the authors and others related to the Japanese economy. Whether one agrees with the authors' interpretations or assumptions, what is undisputed are the meticulousness and transparency of their work. This volume promises to reinvigorate interest in Japanese economic history and is worth a close reading.

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Author/s:

Tang, JP

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