

Income Distribution of Japan: Historical Perspective and Its Implications

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I. Introduction

The rapid rise in income inequality in Japan since the 1980s is attracting strong attention. In what now seems like a world apart, inequality during the preceding periods of high followed by stable growth was low, and Japan was regarded as being the most egalitarian country in the world. During the prewar period and especially during the interwar years, inequality was marked, and this period is drawing interest for its contrast with contemporary Japan.

This author has calculated estimates of the income distribution in prewar Japan, compilation and organization of the materials for which commenced in the 1970s, and the results of estimates and analysis were published in book form in 1996 (Minami 1996).¹ Compilation of data continued, and final estimates were published in 2000 (Minami 2000). This paper reviews this research and compares and contrasts the situation then with that in contemporary Japan.

Section II of this paper reviews the basic sources used to calculate these estimates, and summarizes the estimation methods. The period covered is from the end of the 19th century to the end of the 1930s. Section III consists of an analysis of the estimate findings, and examines how income distribution changed and explores the factors underlying these changes. Section IV describes the gap between the prewar and postwar periods, and changes in the postwar period. Lastly, Section V offers some conclusions and their implications.²

¹ For a summary of this, see Minami (1998).

² This paper is a translation of Minami (2007), revised and expanded upon by the author.

II. Summary of Data Sources and Estimation Methods for the Prewar Period

1. Data Sources

The estimates were calculated using data from *Kojin Shotoku-zei Tokei* (Personal Income Tax Statistics) and *Kosuwari-zei Tokei* (Household Tax Statistics).

Personal income tax (Class 3 national income tax) is a tax that was levied on high-income earners with an annual income in excess of ¥1,200 (¥1,000 from 1938). Although paid by only a very small proportion of households (4.1% in 1937), a major advantage of the information on these taxpayers is that it is available on a national basis.

Household tax was a form of local taxation introduced in 1878, the tax base for which was standardized in 1921. A conspicuous feature of this tax is that all households were assessed. Municipalities thus surveyed and estimated all households' incomes through interviews and similar means, and determined the amount payable by each household by multiplying its income by a uniform tax rate.

Household data are recorded in municipalities' council papers, and so we contacted municipal governments throughout Japan in 1974 to determine whether such materials survived. Over the next two decades or so, data were then compiled on 213 municipalities (18 cities, 46 towns, and 149 villages³).⁴

However, this source also presents a number of problems. The first is that statistics on the amount of tax paid and income were not recorded for individuals until 1922, and it is only possible to obtain the number of households in each class. Secondly, this tax was not levied in major cities such as Tokyo and Osaka, which are consequently not included in the data collected. In the largest regions for which materials were obtained, such as Yokosuka, Shizuoka, and Kumamoto, the number of households was 40,000 at most.

2. Estimation of Income Distribution

Full-scale estimates were performed using the years 1923, 1930, and 1937

³ The number of municipalities in 1939 was significantly reduced by mergers after the war.

⁴ Compilation of these materials required considerable manpower, time, and funds, and access to them has recently been further complicated by concerns about privacy.

as three benchmarks taking into consideration the limitations of the household data.

All households in Japan were divided into two groups—high-income earners (i.e., persons earning ¥1,500 or more) and non-high-income earners—and the income distribution according to the national personal income tax statistics used as the income distribution for high-income earners. For the income distribution of non-high-income earners, the number of households in each income bracket estimated from the household statistics⁵ and extrapolated nationwide was employed. By combining the number of persons by income bracket in these two groups, it was possible to obtain the income distribution of all households in Japan. The Gini coefficients thus obtained for the three benchmark years were, respectively, 0.530, 0.537, and 0.573.

For previous years the Gini coefficients are estimated by linking with the average of the Gini in 39 municipalities calculated from the number of taxpayers by class based on the total amount of tax levied (combining taxes on both income and assets). The results are 0.432, 0.473 and 0.526 in 1895, 1905 and 1915 respectively.

III. Prewar Changes and Causes

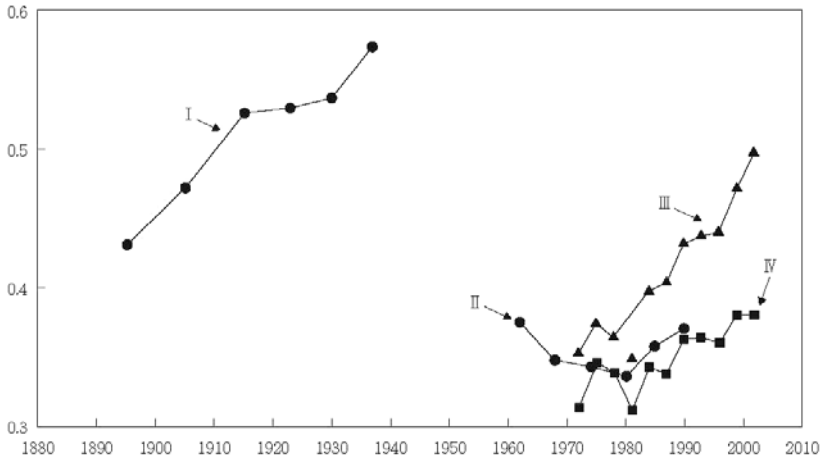
1. Long-term Changes

Figure 1 depicts long-term trends in inequality in Japan by concatenating these estimates for the prewar period (series I) with postwar series. For the postwar period, estimates by Mizoguchi and Terasaki (series II) and Tachibanaki (series III and IV) were used. (Although the latter two series are calculated from the same statistics, series III uses incomes before redistribution and series IV uses incomes after redistribution.) Three important points may be drawn from this.

Firstly, there is a clear rise in the Gini coefficient for around 40 years from the end of the 19th century to the end of the 1930s, indicating that there was a long-term rise in income inequality in the prewar period. Secondly, the Gini coefficient gradually declined from the 1960s to the 1970s, before beginning

⁵ 141 municipalities were used for the estimation of income distribution (section C1 of Table 1). Data were available for all three benchmark years on 82 of these, and these were used to estimate the Gini coefficients for the benchmark years (section 2). This is because income distributions vary when different municipalities are sampled.

Figure 1. Long-term changes in the Gini coefficient



Notes and Sources: I. Estimated by Minami (2000), 44, table 5.

II. Estimated by Mizoguchi and Terasaki (1995), 61, table 1 based on the National Livelihood Survey.

III. Estimated by Tachibanaki (2006), 8, table 1-1 based on incomes before redistribution according to the Income Redistribution Survey.

IV. Estimated by Tachibanaki (2006), 8, table 1-1 based on incomes after redistribution according to the Income Redistribution Survey.

to rise sharply again from the 1980s. And thirdly, the Gini coefficient drops considerably after World War II from 0.573 (series I) in 1937 to 0.313 (series II) in 1956, evidencing that inequality was far greater before the war than after.

2. Inequality between the Wars: Regional Disparity

Growth in inequality in a country can arise from (i) a widening income gap between urban and rural areas, (ii) a widening income gap within urban areas, and (iii) a widening income gap within rural areas. Below, we analyze the interwar period, for which there is a comparative abundance of data.

Sections A and B of Table 1 show the Gini coefficients for urban areas (cities and towns) and rural areas (villages) calculated based on household data, and section C shows the coefficients for the two categories combined. Each has two sections. Section 1 shows the results for all municipalities in the three benchmark years, and section 2 shows the results for municipalities for which data exist for all three years. The latter, despite the small sample size, is

Table 1. Income distributions and related indices by category of municipality, 1923-37

Region	Year	Gini coefficient	Change in coefficient (1923-37)	Industrialization rate (%)	Number of taxpaying households	Number of municipalities	
A. Cities and towns	1	1923	0.569		67.8	102,083	38
		1930	0.582	0.037	72.9	178,827	45
		1937	0.606		74.6	262,066	44
	2	1923	0.578		70.7	42,707	20
		1930	0.603	0.060	72.3	49,959	20
		1937	0.638		75.2	61,016	20
B. Villages	1	1923	0.534		29.7	53,633	86
		1930	0.544	0.001	30.1	67,342	106
		1937	0.535		29.6	66,758	97
	2	1923	0.584		31.9	38,882	62
		1930	0.602	0.008	30.6	40,565	62
		1937	0.592		31.4	41,768	62
C. Municipalities	1	1923	0.544		41.4	155,716	124
		1930	0.555	0.013	42.9	246,169	151
		1937	0.557		43.7	328,824	141
	2	1923	0.585		49.9	81,589	82
		1930	0.607	0.039	51.9	90,524	82
		1937	0.624		54.4	102,784	82

Sources: Gini coefficients, average incomes, and numbers of taxpaying households are according to the household data for each year, and industrialization rates are based on the 1920, 1930, and 1940 National Censuses.

Notes: 1. Section 1 gives the simple arithmetic averages of the results for all municipalities obtained from the data in each year, and section 2 gives the results obtained by pooling the taxpayers in municipalities for which data are available for all three benchmark years.

2. The industrialization rate is the percentage of persons who are employed in non-primary industry among all employed persons. Figures for 1923 and 1937 are the results for 1930 and 1940.

appropriate for analysis of changes over time.

In 1923, the Gini coefficient is higher for rural areas than urban areas; thereafter, however, the coefficient for urban areas rises considerably while it is practically the same as that for rural areas. The scale of the increase during this period is 0.060 in urban areas and 0.008 in rural areas. As a consequence, the coefficient for urban areas overtakes that for rural areas in 1937. The

industrialization rates (defined as the proportion of persons employed in non-primary industry among all employed persons) of urban and rural areas shown in the same table also differ substantially. While the rate rises markedly in urban areas, it remains almost unchanged in rural areas, resulting in a large gap between the two (75% compared with 31%) in 1937. In other words, while industrialization advanced rapidly in urban areas during the period, rural areas experienced no change, and the likelihood is that it is this that gave rise to the urban-rural gap that characterizes the pattern of change in income distribution.⁶

From this analysis, it can be seen that the key factors behind the rise in inequality in Japan as a whole were the widening income gap between urban and rural areas, and growing inequality within urban areas. As one measure of the income gap between rural and urban areas, let us first consider the ratio of farming households' per capita income to that of non-farming households. As the bottom row of section 1 in Table 2 shows, this declines consistently between 1910 and 1935. The relative decline of farming household incomes accelerated, and underlying this was the gap in labor productivity between the agricultural and non-agricultural sectors. Technological advances and capital accumulation progressed more rapidly in non-agriculture, as a consequence of which labor productivity, too, rose rapidly. The ratio of productivity in primary industry to that in non-primary industry shown in the last row of section 4 consistently falls during this period.

Concerning the stagnation of agricultural productivity, and by extension farming household earnings, it is impossible to ignore the role played by the existence of surplus labor in rural areas. Lewis-type surplus labor (unlimited labor supply), where marginal labor productivity does not reach the conventional minimum standard of living and wages are pegged to the minimum living standard, accounted for a little under 60% of agricultural labor in prewar Japan according to calculations by this author and others (Minami and Ono 1977, table 1). In the face of this large excess of labor, income increases were inhibited. The real average income of farming households shown in section 1 rose as a result of the economic boom following World War I, but fell sharply in the 1920s, and was lower in 1935 than in 1910. The real wages of agricultural day laborers shown in section 2 exhibit a similar pattern,

⁶ For a strict factor analysis based on a decomposition of the logarithmic distribution, see Minami (1996), 42-43.

Table 2. Income and wage gaps between agriculture and industry in the interwar period and causes thereof

	1910	1915	1920	1925	1930	1935
1. Per capita real incomes (yen/year)						
Farming	602	655	700	653	571	593
Non-farming	1,024	1,124	1,317	1,352	1,489	1,593
Farming/non-farming	0.59	0.58	0.53	0.48	0.38	0.37
2. Real wages (yen/day)						
Agricultural day laborers (male)	0.93	0.95	1.17	1.21	1.10	0.89
Non-agricultural laborers (male)	1.06	1.00	1.41	1.77	1.64	1.34
Agricultural/non-agricultural	0.88	0.95	0.83	0.68	0.67	0.66
3. Real wages (yen/year)						
Agricultural annual laborers (male and female)	126	122	145	167	153	131
Manufacturing workers (male and female)	214	229	336	400	439	436
Agricultural/manufacturing	0.59	0.53	0.43	0.42	0.35	0.30
4. Real labor productivity (yen/person)						
Primary industry	161	182	197	203	210	225
Non-primary industry	517	571	678	729	777	862
Primary/non-primary	0.31	0.32	0.29	0.28	0.27	0.26

Source: Minami (2007), 36, table 2.

Note: The figures shown in sections 1, 2, and 3 are adjusted for changes in the consumer price index (1934-36 = 100). Section 4 shows GDP (1934-36 prices) divided by the number of workers. Seven-year average.

and the real wages of agricultural annual laborers in section 3 were only slightly higher in 1935 than in 1910.

3. Growing Inequality between the Wars: The Income Gap in Urban Areas

Two factors may be identified as contributing to growing inequality in urban areas. The first is the decline in labor's relative share, i.e., the decline in labor income's share of non-primary industry in GDP (Minami 1994, figure 9-5; Minami 1996, appended table 4). This declined rapidly in the first half of the 1910s, rose sharply in the second half of the decade, and then remained largely constant in the 1920s before declining considerably in the second half of the 1920s. The decline in labor's relative share, which slumped from 62.2% in 1910 to 49.7% in 1937, was due to wage increases' failure to keep pace with the rapid rise in labor productivity during the period.

The second factor is the widening wage gap within industry. There are two

types of worker to be found on the labor market—skilled and unskilled—and below we use blacksmith wages as an index of the wages of the former (Okawa et al. 1967, 245) and the manufacturing laborers' wages as an index of the latter. The ratio of the two was 0.93 in 1920 (seven-year average), but this shrank substantially in the late 1920s to 0.56 in 1935. Other wage disparities exhibit a similar trend, and it is widely recognized that a gap in wages between manufactures of different sizes that was non-existent in 1909 and 1914, for example, had become clearly evident in 1932 (Minami 1994, 238).

The decline in labor's relative share and widening wage gaps between different classes of workers in the latter half of the 1920s are both related to the existence of surplus labor. Surplus labor continued to supply low-wage unskilled labor to urban industry,⁷ inhibiting wage growth in urban industry and leading to a decline (or preventing an increase) in its share. Also in the cities, the wage gap between skilled and unskilled labor widened. In short, growing inequality in urban areas was closely linked to the existence of the surplus labor that characterized the Japanese labor market.

IV. Postwar Changes and Causes

1. Gap between the Prewar and Postwar Periods

As already observed, there was an enormous gap in the level of inequality between the prewar and postwar periods. Calculating the Gini coefficients by industry based on the *Shugyo Kozo Kihon Chosa* (Employment Status Survey) for 1956, we find the coefficient to be 0.316 for primary industry and 0.335 for non-primary industry (Minami 1996, table 7-1). By contrast, the coefficients calculated based on the household data for the town of Shirakawa-cho in Nishi-shirakawa-gun, Fukushima Prefecture, for the period 1936-39 are respectively 0.453 and 0.666 (Minami 1996, table 4-1). While it can be seen that income equality has grown in both sectors, the improvement is more conspicuous in non-primary industry. In other words, the gap between the prewar and postwar periods affected primarily the non-agricultural sector, which in turn indicates that growing equality in urban areas is of greater

⁷ According to section 2 of Table 2, the wage gap between agricultural day laborers and non-agricultural laborers was extremely stable. This indicates that the two belonged to the same labor market.

significance.

Growing equality in urban areas was due in large part to two factors: (i) the air raids on major cities and hyperinflation of the closing stages of World War II, and (ii) the decline of the affluent class as a result of economic democratization in the aftermath of the war (Minami 1996, chap. 7). While as much as 78.8% of privately-owned buildings, which make up the bulk of personal assets, were destroyed or damaged by the war, losses were concentrated in and around Tokyo and Osaka, and the owners of such properties naturally belonged to the high-income class. Hyperinflation in 1946-48 resulted in huge profits for black marketeers, who traditionally belonged to the non-high-income class, while the traditional high-income earners found their deposits closed, limiting scope for investment activity and accelerating their decline.

The main instruments of economic democratization were the dissolution of the *zaibatsu* and expulsion of their directors. This contributed to the waning of the *zaibatsu* families and limitation of increases in company directors' bonuses, equalizing the distribution of incomes. The factor that had a definitive impact in terms of increasing equality, however, was the levying of personal asset taxes: *zaisan-zei* (tax on assets) in 1946-51, and *fuyu-zei* (tax on the rich) in 1950-52. Of particular importance was the former, which broadly encompassed high-income earners (13% of taxpayers).

Major changes also took place in rural areas. Firstly, agrarian land reform in 1946 resulted in the confiscation of all agricultural land in the hands of absentee landowners and the purchase of agricultural land in excess of one hectare (four hectares in Hokkaido) owned by resident landowners, destroying the prewar tenant farming system and producing greater social and economic equality within rural areas. And secondly, a policy of price maintenance kept the price of agricultural produce high, dramatically shrinking the income gap between urban and rural areas.

However, increased postwar equality cannot be ascribed entirely to postwar policies, as some increased equality had been set in train during the war. In 1939-40, dividends were regulated, company directors' bonuses reduced, and the landowner-tenant relationship was already exhibiting signs of change. Under the National Mobilization Law (1938), tenant rents were frozen at 1939 levels, in addition to which rents for approximately 330,000 hectares of agricultural land were lowered by gubernatorial order until 1943. Nevertheless, these developments by no means diminish the significance of the effects of

postwar policies.

2. Transition from Rising Equality to Rising Inequality

Series II in Figure 1 shows a clear increase in equality from the 1950s to the 1970s. Significantly, these decades include the high-growth period of the 1950s and 1960s, indicating that high growth and rising equality went hand in hand. Rapid urban industrialization prompted rural labor to move en masse to the cities, causing the rural labor force to decline dramatically and raising productivity. Around 1960, the surplus labor that had characterized Japan's modernization disappeared; the turning point was passed (Minami 1973, chap. 12; Minami 1994, 228-30). In the cities, moreover, the decline in the unemployment rate and shrinkage of the income gap between enterprises of different sizes accelerated growing equality. Thus by around 1970, Japanese society came to be regarded as being "all middle class," and it gained a reputation around the world as an egalitarian society. The Gini coefficient in 1972 (series IV) was 0.314.

According to series IV, however, inequality began to rise again from 1980, causing the Gini coefficient to reach 0.381 in 1999. The rise per year is an astonishing 0.0045, which exceeds even the 0.0031 rise per year recorded in the prewar period. Tachibanaki and a number of other scholars have propounded the existence of this remarkable phenomenon and its causes.⁸ Despite the counterargument that the rise in inequality has been due to factors including population aging and that the rise is not so clear if the effects of these factors are removed from the equation, this view, together with that of the new social phenomenon of increasing irregular employment of primarily young people, is now the accepted one.

NEETs (young people not in education, employment, or training) and "freeters" (young people who are not permanent employees) are growing rapidly in number and, it is argued, sinking to the bottom of society, leading to increased inequality (Hashimoto 2006, 124-29; Tachibanaki 2006, 138-43). The advent of the "divided society" may thus be put down to fierce inter-firm competition resulting from deregulation, and is a global phenomenon that has occurred along similar lines in the United States, United Kingdom, and numerous other countries.

⁸ See, for example, Tachibanaki (1998, 2006) and Otake (2005).

V. Conclusions and Their Implications

The principal conclusions that may be drawn from the preceding analysis are as follows: prewar Japan was unequal and rapidly becoming increasingly so; equality increased enormously as a result of postwar reforms (though this process had already begun to some extent during the war years); equality increased under conditions of high and then stable growth in the initial period after the war; and inequality began to rise again at a pace to rival the prewar period from the 1980s. Below, we examine the implications of these conclusions.

Firstly, the rises in inequality before the war and after differed in substance. The prewar growth in inequality is explained by the existence of surplus labor in agriculture and some urban industry, and the unlimited supply of labor from these sectors held down wage increases in urban industry. In the postwar period, the rise in equality was due to surplus labor being soaked up and eliminated by high economic growth. It has already been noted, however, that the cause of the contemporary rise in inequality lies elsewhere. Despite the resemblance to prewar inequality, rising inequality in its postwar guise has to be explained employing a different theoretical framework.

Secondly, the movements in income distribution in Japan are of international significance. The rise in inequality before the war and rise in equality during the period of high growth after the war are evocative of Kuznets' "inverse U hypothesis." While Kuznets did not fully explain the reasons behind the curve and numerous subsequent studies have drawn critical conclusions concerning it (Minami 1996, 1-3),⁹ the Japanese experience described above nevertheless provides a fairly good fit with the hypothesis, and it is possible that the explanation offered in this paper may be directly applicable to the situation in developing countries that have succeeded in

⁹ These studies fall into two types. Those in the first type analyze historical changes in several countries, from which they draw positive conclusions about the Kuznets hypothesis. The second type are international comparisons at a given point in time, and these are largely dismissive of the hypothesis in their conclusions. Their precise conclusions vary, however, depending on the years and types of data chosen. Grouping the Gini coefficients of 81 countries between 1998 and 2002 into deciles according to per capita GNP using World Bank statistics, the author found that there was a clear peak at the fifth decile, supporting the Kuznets hypothesis (Minami 2005, figure 13-2).

industrializing. This is that such countries experience a rise in productivity, but the existence of surplus labor means that wages cannot keep up with this rise and the distribution of income deteriorates. As the process of industrialization reaches maturity, however, the surplus labor disappears and the income distribution improves.¹⁰

However, how should the new phenomenon described above—i.e., the rise once again of inequality observed in many developed countries, including Japan—be interpreted and theorized? Opinion is divided on whether this is entirely incompatible with the Kuznets hypothesis, or whether the hypothesis may be generalized by adding a reversal in the trend of rising equality to turn the “inverse U” shape into an “N” shape. If inequality continues to grow in a number of countries, the argument in favor of such a refinement of the hypothesis is likely to strengthen.

Thirdly, there is the question of the entrenchment or magnification of intergenerational inequality. The existence of a cycle whereby highly-educated high-income earners invest heavily in their children’s education, who in turn become highly educated and earn high incomes (Kariya 2001; Kikuchi 2003; Minami, Makino, and Luo 2008, chap. 10), means that educational background accelerates social stratification and magnifies growth in inequality.

On this point, a quantitative study of the poor in prewar Tokyo by Yazawa (2004, 332-33, 349) offers an intriguing perspective. Yazawa argues that the poor pruned their food expenses, putting spending on education first with the aim of achieving a long-term (spanning two households) improvement in their economic position through their children’s education. However, the fact that the proportion of spending on education increases as income falls is observable also in rural communities in present-day China (Minami, Makino, and Luo, 2008, chaps. 4 and 10). Education is thus a form of forced expenditure (regardless of education being compulsory, families still have to pay for sundry expenses instead of school fees), and the proportion of this spending is greater when income is lower. Although hard to prove, a similar situation may have pertained to the poor in prewar Japan.¹¹ Whether or not this is so, discussion

¹⁰ Contemporary China is an exemplar of this (Minami 2005; Minami, Makino, and Luo 2008, chap. 10).

¹¹ Even if school fees are not charged, families still have to spend on education in order to buy stationery and other supplies if their children are to remain in compulsory education.

of changes in income distribution must also tackle the subjects of social stratification and education.¹²

Fourthly, there is the impact on the economy of income distribution. It has been noted elsewhere that rising inequality in the prewar period (particularly the wage lag in relation to increases in productivity) has an advantageous effect on economic growth due to the generation of increases in the savings and investment rates (Minami 1996, 160-63). If this is so, however, there arises the question of how to explain the parallel high growth and rise in income equality after the war.

It has also been boldly proposed that inequality in prewar society raised social vitality—in other words, people's motivation—and so contributed to higher growth (Yazawa 2004, 573-75). However, it is quite probable that extreme disparities dampen people's desire to improve their social and economic positions, thus exerting a negative influence on economic growth (Hashimoto 2006, chap. 7). This is why growing inequality will be the biggest issue that confronts Japan in the future. How then can the widening disparity and rise in the growth rate in prewar Japan be explained? One interpretation is that, as suggested above, wages' relative decline spurred saving and investment, and another employs the opposite logic that new business opportunities expanded under conditions of rapid economic growth, acting as a stimulus on people. Whichever the case, this question awaits further research.

Fifthly, there is the social and political impact of income distribution. The impoverishment of the peasant population that was one of the factors contributing to rising prewar inequality is thought to have simultaneously engendered envy of and animosity toward the cities, generating despair in the party politics that allowed this situation to arise and a yearning for totalitarianism and a controlled economy (Minami 1996, 140-45; Minami and Jiang 1999, 53-57). The repeated coups d'état by young officers (most of whom were themselves from rural communities) arose out of and won public sympathy under these conditions. The prewar descent into militarism and its tragic consequences were thus not unrelated to the growing inequality during this period. After the war, however, a more equal income distribution generated social stability and a certain advancement of democracy that, it is thought, had

¹² Regarding social stratification theory, see Hashimoto (2006).

a positive impact on economic growth.¹³

Question marks remain, however.¹⁴ One possible viewpoint is that it is not increasing inequality, or relative impoverishment, that gave rise to public discontent, but rather changes in real income itself, and it is certainly the case that real incomes dropped considerably in the latter half of the 1920s. According to the former position, rising inequality in contemporary Japan therefore exerts some kind of negative influence on society and politics, while according to the latter, Japan's well-being is assured provided that real incomes at the bottom of contemporary society do not decline. Exploring this question will be an important avenue of research on the subject of income distribution.

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¹³ Regarding the relationship between income distribution and democracy, see Minami and Kim (1999).

¹⁴ Regarding rising inequality and its consequences in countries including Japan, see the papers in Minami, Kim, and Falkus (1999) (particularly the introduction by Minami and Kim [1999]).

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