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The Evolution of Income Concentration in Japan, 1885-2002: Evidence from Income Tax Statistics

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Abstract

In this paper, we construct the long-run series of top income shares and wage income shares in Japan using income tax statistics and investigate the evolution of income concentration in Japan from 1885 to 2002. We find that (1) a degree of income concentration was extremely high throughout the pre-WWII period during which the nation underwent rapid industrialization; (2) a drastic de-concentration of income at the top had taken place during and immediately after WWII; (3) a degree of income concentration has remained low throughout the post-1950 period despite the high economic growth; and (4) a major component of the top income in Japan has shifted dramatically from capital income to employment income over the course of 20th century. We attribute the dramatic fall in income concentration primarily to the collapse of capital income due to wartime taxation, war destruction, hyperinflation, and, to a lesser extent, postwar occupational reforms. We argue that the fundamental change in the institutional structure after WWII made the one-time income de-concentration difficult to reverse. In contrast to the sharp increase in wage income inequality observed in the United States since 1970, the top wage income shares in Japan have remained remarkably stable over the recent decades. We show that the change in technology or tax policies alone cannot account for the comparative experience of Japan and the United States. Instead we suggest institutional factors such as corporate governance and union structure as important determinants of wage income inequality.

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1. Introduction

Following the seminal work by Kuznets (1955), the evolution of income inequality during the process of economic development has attracted much attention in the economics literature. Some argue that concentration of wealth biases the political process in favor of the rich that in turn perpetuates the inequality, calling for progressive taxation as a necessary counter-measure. Others view concentration of wealth as a natural if not necessary outcome of economic growth. Thus, progressive taxation may redistribute income and reduce wealth concentration, but may also reduce economic growth by depressing entrepreneurship and capital accumulation.

To cast better light on the on-going debate, it is critical to understand the empirical relationship between economic growth and income distribution. To this end, economic historians have studied changes in income and wealth inequality over centuries in leading industrial nations such as Britain and the United States (e.g., Soltow (1968, 1969); Williamson and Lindert (1980); Williamson (1985); Lindert (1986, 2000)). Historical studies, however, were often hampered by the absence of long-run homogeneous series of income and wealth. Recently, a number of studies have used income tax statistics to generate such series for several European and Anglo-Saxon countries (see a collective volume by Atkinson and Piketty (2005)). Although these studies focus on only the shares of top income groups due to the data limitation, they provide the first consistent series of income inequality measure in these countries that cover most of the 20th century.

The objective of this paper is to construct the long-run top income shares series for Japan and evaluate Japan's experience from historical and comparative perspectives. The data for Japan are of particular interest, not only because Japan is the world's second largest economy after the United States today, but also because its process of industrialization was compressed within a very short time period. After the 1868 Meiji Restoration, modern economic growth in Japan took off circa 1886, and the nation underwent three industrial revolutions – from textiles, heavy industries, to high-tech industries – within less than 100 years. To illustrate this point, **Figure A** depicts the real GDP per capita in Japan, 1820-2004, against that in the United States, 1790-2004. Japan's GDP per capita in 1890 was at the level of U.S. GDP per capita in 1790, or about $1,200 in 2004 dollars which is roughly comparable to the GDP per capita of the poorest countries in the world today. By 1970, however, Japan has caught up with other developed countries, and now has a GDP per capita only slightly lower than the United

States. Real GDP per capita in Japan grew at the annual compound rate of 2.7% in 1885-1940 and at the rate of 4.7% in 1948-2002. Because the Japanese government introduced a comprehensive income tax system in 1887 – a remarkably early date by international standards[1] – we can trace the evolution of income concentration during the entire process of industrialization using the Japanese tax statistics. As the top income shares series compiled so far for the Western countries span only part of their industrialization process, the Japanese data provide us with a unique opportunity to examine the relationship between income concentration and modern economic growth. To complement the top income share series and investigate the causes of dynamic changes in income concentration, we also provide the series of income composition, top estates, and top wage income shares based on tax statistics.

From our data, three main findings follow. First, a degree of income concentration in Japan was extremely high throughout the pre-WWII period with some short-term fluctuations. This finding is somewhat contrary to the Kuznets hypothesis that associates an initial phase of industrialization with a rise in income inequality. Top income shares in Japan then declined abruptly and precipitously during WWII and remained relatively low for the rest of the 20th century. Our data thus indicate that the defining event for income concentration in Japan was a historical accident, namely the Second World War, and the institutional reforms triggered by the war.

Second, using income composition data, we show that the dramatic fall in income concentration at the top was primarily due to the collapse of capital income caused by wartime taxation, war destruction, and postwar hyperinflation. Evidence from estate tax statistics confirms the drastic and permanent decline in top wealth during WWII. We argue that the changes in the institutional structure after WWII, such as the introduction of progressive taxes, new inheritance laws, and tax incentives for small asset owners, prevented the re-accumulation of large wealth. Importantly, such redistributive government policies, which likely hampered the "natural" process of capital accumulation, were accompanied by one of the most impressive and sustained economic growths in modern history.

Third, according to our wage income data, a degree of wage income concentration also fell dramatically in the late 1930s and during WWII, but recovered somewhat in the

[1] For example, comprehensive income tax was instituted in Prussia in 1891, in the U.K. in 1909, in the U.S. in 1913, and in France in 1914.

1950s, and declined again in the 1960s. In sharp contrast to the United States (and other Anglo-Saxon countries), top wage income shares in Japan have remained remarkably stable and low over the last three decades. As employment income became a major component of the top income after WWII, in addition to the collapse of capital income, the fall in wage income inequality also contributed to the permanent decline in income concentration. Comparing the Japanese and U.S. data in more detail, we find that technological progress (i.e., skill-biased technological change) or tax incentives (i.e., the reduction in marginal income tax rates) alone cannot account for the divergent experience of the two countries. Instead we suggest institutional factors such as corporate governance and internal labor markets as important determinants of wage inequality.

The rest of the paper is organized as follows. Section 2 summarizes the preceding literature on income inequality in Japan. Section 3 describes the data and estimation methods. Section 4 presents our findings from the top income shares for the period 1885-2002, and Section 5 investigates the causes of the observed changes in income concentration. Section 6 presents the top wage income shares for the period 1924-2002. Section 7 provides comparative perspectives and concludes. The details of our estimation methods are presented in the Appendix.

2. Literature Review

By international standards, modern Japan has been widely perceived as a society of relatively high income equality (e.g., Sawyer (1976)). Although comparing income statistics across nations is notoriously difficult and must be interpreted with caution, recent OECD reports (Atkinson et al. (1995); Burniaux et al. (1998)) and Japanese government studies (Nishizaki et al. (1998); Kokumin Seikatsukyoku (1999)) together offer a better comparative picture. As **Table A** shows, in the mid 1980s, Japan's Gini coefficient of the distribution of household income *before* tax and government transfers was one of the lowest among major industrial economies. When we consider the distribution of income *after* tax and government transfers, as one may expect, Northern European welfare states scored below Japan (**Table B**). According to Burniaux et al. (1998), although the income inequality in Japan rose during the asset price appreciation in the late 1980s, Japan's ranking among the OECD countries remained approximately the same in the 1990s. In other words, one of the distinct characteristics of Japan today is its low income inequality in the absence of government redistribution. When did Japan become a nation of low

income inequality? Or has Japan always been an equal society? To provide a historical perspective, we review the related literature.

There is an extensive body of empirical work – albeit published mostly in Japanese – examining Japan's income distributions during the 20th century.[2] The lack of household survey data has been a major obstacle in estimating the income distribution before WWII, however. In the absence of such data, some scholars used income tax statistics.[3] Most notably, Shiomi et al. (1933) and Hayakawa (1951) combined national income tax statistics and local income tax records to estimate the income distributions of all households in selected cities and years. Using similar methods and compiling comprehensive local income tax data, Minami (1995a,b) has recently provided the estimates of the income distribution of all Japanese households in selected years. By contrast, Ono and Watanabe (1976) studied the long-run changes in income inequality during the pre-WWII period, using several indirect measures such as urban-rural and intra-industry wage differentials. They also estimated the Pareto coefficients of the income distributions of high-income earners based on national income tax data and found that the time trends in these coefficients coincided with those indicated by the indirect measures. Otsuki and Takamatsu (1982) calculated the Pareto coefficients from 1887 to 1940 using the average and minimum household incomes based on the *Long-term Economic Statistics* (Ohkawa et al. (1974)).

For the post-WWII period, several types of survey data became available. Wada (1975) estimated the income distribution in the 1950s using the *Employment Status Survey* and *Farm Household Economics Survey*. Mizoguchi and Takayama (1984) used the *Survey of People's Living Conditions* and other surveys to examine the changes in income inequality from 1962 to 1974. Mizoguchi and Terasaki (1995) subsequently extended their analysis to 1990. The income distribution of Japanese households can be also estimated from the *Household Survey* (e.g., Ohtake (2000)) and the *Income Redistribution Survey* (e.g., Tachibanaki (2000)). Because these surveys employ disparate sampling methods and income definitions, the resulting estimates of income inequality can differ considerably (see Mizoguchi and Takayama (1984) and Funaoka (2001)).

[2] For a comprehensive survey of income distribution before WWII, see Terasaki (1986); Minami (1995a), Chapter 1. For the post-WWII period, see Mizoguchi and Takayama (1984), Chapter 1; Mizoguchi and Terasaki (1995).
[3] See, for example, Shiomi et al. (1933); Hayakawa (1951); Takahashi (1959).

Figure B summarizes the long-run changes in income inequality based on the above studies (for simplicity, we use the Gini coefficient to present their main findings).[4] Although the Gini coefficients in the same year differ across studies, they display coherent time trends. First, the income inequality in Japan rose sharply from 1890 to 1940. Second, after WWII, the income inequality peaked around 1960, declined in the 1960s, and stabilized in the 1970s. Third, the income inequality has been on the rise since 1980, although scholars have disagreed over the extent of the increase. For example, in his recent study, Tachibanaki (1998) has declared Japan as an equal society a "myth," provoking a lively (and continuing) debate among Japanese scholars.

It is important to note that the Gini coefficients before 1940 and after 1955 in **Figure B** cannot be compared due to the data discontinuity. Nevertheless, a general consensus among scholars based on indirect evidence is that the income inequality dropped substantially between 1940 and 1955, presumably due to WWII and/or post-war occupational reforms (Mizoguchi and Terasaki (1995), p.61). One of the objectives of this study, therefore, is to compile new data that enable us to directly compare the level of inequality between the pre- and post-WWII periods and shed better light on the process of the alleged fall in income inequality. Note also that most of the pre-WWII studies provide the estimates only for a handful of years that may or may not be representative data points. Furthermore, since most of the existing studies concern with the income distribution of entire population, we know relatively little about high-income groups.[5] In particular, due to the problem of small sample and top coding, household surveys cannot be used for a study of high income earners.

To fill these gaps, we construct continuous and homogeneous series of the top income shares, i.e., the shares of total income accruing to the upper groups of the income distribution, from 1885 to 2002. Although top income shares are not necessarily an ideal measure of income inequality – as it does not reflect the shape of the bottom 95% of the income distribution – they nonetheless provide valuable information about the degree of income concentration that likely affects entrepreneurial incentives and capital accumulation in a capitalist economy. Finally, because we employ the same methodology

[4] Pareto coefficients are converted to Gini coefficients by the formula g=1/(2*p-1) assuming the Pareto Law.
[5] Notable exceptions are Takahashi (1959) and Yazawa (1992). We discuss their findings in a later section.

used in the recent high income studies, we can compare our data with that of other industrial nations and offer a comparative historical analysis of income concentration.

3. Data and Methodology

In this section, we describe briefly the nature of our data and the broad steps of our estimation methodology. Readers interested in the details of the methods are referred to the Appendix at the end of the paper. Our estimations of top income rely on tax statistics published annually by the Japanese fiscal administration since the introduction of comprehensive and progressive income tax in 1887. They report the number of taxpayers, the amount of income reported, as well as taxed paid and the composition of income.[6] We define the fiscal year as the year in which the tax was collected by the administration and the actual year as the year(s) when the income was earned. Actual and fiscal years are reported in Columns 1 and 2 of **Table 1**. As shown in **Table 1**, before the end of WWII, the tax in fiscal year *t* was collected based on income earned in year *t*-1.[7] Starting in 1947, the income tax system became pay-as-you-earn (through the development of an extensive tax withholding system as in the United State), and fiscal and actual years coincide.

Before 1950, the tax unit was the family defined as a married couple with dependents or a single head of household with dependents. Incomes of family members in a single household were aggregated for tax purposes. Because of high exemptions levels, only a small fraction of households filed income tax returns in pre-WWII years. As a result, our analysis is restricted to the high end of the income distribution. That is, we can only provide estimate of the top 1% income share from 1885 to 1903, and from 1904 on, within the top 5% income share. Only after 1947, more than 10% of households in Japan filed income tax returns.

Starting in 1950, the income tax became individual, whereby spouses were taxed separately on their incomes. In order to produce homogeneous series over the entire period, we estimate top income shares at the individual level. Thus, our top groups are defined relative to the total number of adults (defined as those aged 20 and above) in Japan. The total number of adults is obtained from official population statistics. During the pre-1950 period, for the most years, the tax statistics breakdown total income into the

[6] Income composition is available by income brackets only after 1947.
[7] For fiscal years 1887 to 1898, the tax was based on the average income earned in the previous three years. As a result, our first income distribution is for years 1884-1886.

income of household head and the income of dependents. The income of dependents is very small relative to the head of household income and can be subtracted in order to obtain estimates of top individual incomes.[8]

Income, in our definition, is computed before individual income taxes and individual payroll taxes but after employers' payroll taxes and corporate income taxes. We use a gross income definition, including all income items reported on tax returns and before all deductions: salaries and wages, small business and farm income, partnership and fiduciary income, dividends, interest, rents, royalties, and other small items reported as other income. Realized capital gains are not an annual flow of income (in general, capital gains are realized by individuals in a lumpy way) and form a very volatile component of income with large aggregate variations from year to year depending on stock and land price variations. Furthermore, realized capital gains were not taxable before WWII. Therefore, in this study, we focus on series that exclude capital gains.[9]

As the top tail of the income distribution is very well approximated by a Pareto distribution, we use simple parametric interpolation methods to estimate the thresholds and average income levels for each of our top income groups. For example, as **Table 0** shows, in 2002 the top 0.01% income group consisted of approximately 10,000 individuals whose average income was $1.2 million. We then estimate shares of income by dividing the income amounts accruing to each fractiles by total personal income computed from National Income Accounts.[10] The total and average real income per adult from 1885 to 2002 are reported on Columns 7 and 8 of **Table 1**. We convert current incomes to real incomes (in 2002 yen) using the CPI deflator from *Long-Term Economic Statistics* (Ohkawa et al. (1967) and *Historical Statistics of Japan*), which is reported on Column 9 of **Table 1**.

We also construct top estate series using estate tax statistics published annually since 1904 (**Table 4**). Top estate groups are defined relative to the total number of adult (age 20 and above) deaths in each year obtained from official population statistics. Due to the difficulty in estimating total national wealth, the top estate series are expressed in the level, as opposed to the share, in real yen using the CPI deflator.

[8] This correction method is appropriate as long as the share of dependent income is small. After 1950, the tax statistics, based on individual income, do not allow to reconstruct household income.
[9] For comparison, we provide top income series with and without capital gains in Figure 6.
[10] Note that National Income Accounts in the pre-WWII period are not as accurate as in the post-WII period, introducing potentially large errors in our estimates. We plan to find alternative estimates of household income.

Finally, we compute top wage income shares using the similar methodology (**Tables 5 and 6**). For the post-WWII period, wage income data are compiled from the *Survey on Private Wages and Salaries* published by the tax administration annually since 1951 that covers all employees excluding government employees and temporary employees.[11] Wage income in our definition includes wages, salaries, bonuses, and allowances, but does not include benefits in kind, pensions, and retirement benefits. Top groups are defined relative to the total number on employees in the statistics, and the total wage income denominator is simply the total wage income reported in the statistics. For the pre-WWII period, we use salary and bonus data reported in the annual income tax statistics for the years 1930-45. For earlier years, we use wage distributions published in the *Report on the Census of Labor* in 1924, and 1927. Because these wage surveys report monthly cash wages that do not include bonuses, we use the data from the income tax statistics to correct for the omission (see the Appendix for details).

Over the 115 years of our sample period, not only the format of tax statistics was revised several times, but also there have been numerous changes in income and estate tax laws. These changes potentially affect the comparability of our data across years. Therefore, to construct homogeneous series, we make a number of careful adjustments to the original data (see the Appendix for detail descriptions). In particular, there are two major challenges in constructing the top income shares series that call for special attention.

First, after the introduction of an extensive withholding system (*gensen choshu seido*) in 1950, most individuals with only employment or pension income were no longer required to file self-assessed income tax returns.[12] As a result, even though most income earners pay income taxes in Japan, only a minority of taxpayers (approximately 10 to 15% of all adults) is required to file a self-assessed tax return. Fortunately, the Japanese tax administration publishes the statistics from the withholding tax system on wages and salaries that include virtually all wage earners in the private sector. We thus use these data to complete the self-assessed income tax statistics.

[11] We discuss how the exclusion of those groups might affect our results and comparability with the U.S results from Piketty and Saez (2003) in a later section.

[12] The withholding system incorporates a year-end adjustment that typically makes total taxes withheld correspond to total income taxes due. In such a case, no income tax return has to be filed, and the person does not appear in the official statistics of income tax returns.

The second and perhaps more serious issue is tax avoidance and evasion, i.e., lawful and unlawful under-reporting of income by taxpayers. Because the self-assessed income tax statistics are based on reported income, there is a concern that our data might reflect trends in tax avoidance or evasion rather than true changes in income inequality. To counter this problem, we propose some remedies and sensitivity analysis in Section 5.

4. Top Income Shares in Japan, 1885-2002

4.1 Background

To provide a historical background, **Figure 1** depicts the average real income per adult and the CPI in Japan from 1885 to 2002. The average real income more than quadrupled between 1885, the onset of industrialization, and 1938, the peak year before WWII. The real income grew particularly fast during WWI (1914-18) and during the period of aggressive military expansion (1932-38), but declined sharply towards the end of WWII (1939-45) that destroyed much of the nation's physical and human capital. The two World Wars were accompanied by high inflation. In particular, Japan experienced hyperinflation in 1944-48 during which consumer prices rose by 5,300%. After the postwar U.S. occupation (1945-52), the average real income per adult recovered quickly, surpassing the 1938 level by the mid 1950s. During the subsequent high-growth period (1955-73), the real income increased by a factor of six, achieving one of the fastest sustained economic growths in modern history. Since the collapse of the asset bubble in 1991, however, the average Japanese adult experienced a moderate decline in real income.

4.2 Trends in Top Income Shares

Figure 2 reports our estimates of the top 1% income share from 1885 to 2002 and the next 4% (denoted as "top 5-1%") income shares from 1904 to 2002. We first focus on the top 1% income share series. From 1885 to 1941, the top 1% adult population in Japan received as much as 15 to 20% of total personal income. The share, however, fell abruptly and precipitously from 1941 to 1945 by a factor of two, and remained relatively stable at around 8% throughout the postwar period. There are fairly large fluctuations in the top 1% income share before WWII: after a steep fall in 1886-90, it declined temporarily during the Russo-Japanese War (1904-05), WWI (1914-18), and the Great Depression (1929-31), each time followed by an immediate recovery. In terms of the long-run trend, the top 1%

income share was high from the very beginning of industrialization in Japan, and we detect no rise in income concentration associated with the initial stage of economic development. Similarly, the extraordinary economic growth from 1950 to 1973 was accompanied by little change in the top 1% income share. We observe only a modest increase in the top 1% income share in the 1990s.

The next 4% income share series displays a substantially different pattern. Throughout the pre-WWII period, the share was consistently smaller than the top 1% income share, where the next 4% population received about 12% of total income. After WWII, by contrast, it has been consistently and substantially higher than that of the top 1% and rose from 12% to 16% between 1970 and 2000, almost twice as large as the top 1% share. Most striking difference is that the next 4% share did not fall during WWII and spiked in the immediate postwar years. **Figure 2** thus suggests that the income de-concentration that took place during WWII in Japan was limited to the very top income groups within the top percentile.

Figure 3 demonstrates this point further by decomposing the top percentile into three subgroups: the bottom half ("top 1-0.5%"), the next 0.4% ("top 0.5-0.1%"), and the top 0.1%. Although the three series exhibit similar overall patterns, the *higher* income group experienced the *larger* fall in their share during WWII. While the share of the top 1-0.5% declined by less than 30% between pre- and post-WWII periods (from 3.5% to 2.5%), it was substantial for the next 0.4% (from 6% to 3%), and was enormous for the top 0.1% (from 9% to 2%).

Finally, **Figure 4** displays the income share of the top 0.01% adult population (corresponding to roughly the richest 10,000 taxpayers today) in Japan. As one may expect, the fall in the income share during WWII and immediate postwar years was even more pronounced for the top 0.01% group: it collapsed from the pre-WWII peak of 3.8% in 1937 to 0.5% in 1950 and has remained around the same level for the rest of the 20th century. To provide a comparative perspective, **Figure 4** also plots the top 0.01% income share series in the United States estimated by Piketty and Saez (2003). Although cross country comparisons entail some problems, the data indicate that the top 0.01% income share in Japan was comparable to, if not higher than, that in the United States during the interwar period. Recall that the United States in the 1920s was the world's technological leader, characterized by giant corporations in capital-intensive industries that tended to generate enormous fortunes and high income concentration. Therefore, it is perhaps

surprising to observe that Japan, whose major exports were textiles and light machinery during the same period, exhibited a similarly high level of income concentration.[13] The figure also illustrates a sharp contrast in the evolution of income concentration between the two countries in recent years. After plummeting to the historic low of 0.5-1.0% during WWII, the top income shares in both Japan and the United States had remained low at that level from the 1950s to the 1970s. However, the share in the United States has risen by a factor of five in the last 20 years, returning to the pre-WWII level, while the share in Japan has remained stable.

4.3 Trends in Income Composition

To better understand the mechanisms that led to the drastic and permanent decline in the top 1% income share during WWII in Japan, we use composition data from the income tax statistics from 1885 to 2002.[14] Generally speaking, income can be divided into capital income (defined broadly as returns on assets, including dividends, interest, and rents) and labor income (defined broadly as returns on labor, including business and employment incomes). In **Figure 5,** we decompose the top 1% income share into four categories: (a) dividend income. (b) interest income, (c) rental income,[15] (d) business income (profits from unincorporated businesses, self-employment income, and farm income), and (e) employment income (wages, salaries, bonuses, and pensions). We make the following three observations

First, from 1885 to 1940, the two major components of the top 1% income were capital income and business income. While employment income grew in its importance during this period, the share of land rental income declined steadily. As discussed later in detail, this trend likely reflects the gradual shift from an agrarian economy with concentrated land ownership and privately owned businesses towards an industrial economy with larger incorporated businesses. However, as noted above, this shift was not accompanied by any discernable increase in the top 1% income share.

[13] Although not shown in Figure 4, the top 0.1% and 1% income shares in Japan and the United States during the interwar period were also comparably high.
[14] Unfortunately, no composition data are available before 1900 except for 1885. From 1947 and on, composition by income brackets is available. For the period 1950-2002, we have estimated composition only twice a decade. Complete annual series will be estimated in a subsequent revision.
[15] Before World War II, rents include only land rent and residential and business building rents are included in business. After World War II, all rents are included in rents.

Second, during the First World War, the land rental, capital, and employment income components fell. This can be attributed primarily to high inflation in 1916-20 (see **Figure 1**), as it likely reduced the real value of fixed claim assets (e.g., interest and rents) and salaries (assuming nominal rigidity). Note that these components returned to their original levels shortly after WWI as inflation subsided. Similarly, during the Second World War, the capital and employment income components collapsed. As a result, during 1945-48, the top 1% income was almost entirely composed of business income. In a sharp contrast to the previous war, however, the employment income component rose dramatically, comprising one half of the top income by 1950, whereas the land rental and other capital income components never returned to their pre-WWII level. In other words, WWII seems to have had a permanent and irreversible effect in wiping out high-income rentiers in Japan, indicating some structural change accompanied by it.

Finally, from 1950 to today, within labor income, the share of employment income in the top income has increased steadily at the expense of business income. This shift is likely due to the continuing shift towards highly industrialized economy with large corporations in capital and R&D intensive industries. It is worth noting, however, that the United States in the similar developmental stage exhibited much higher level of income concentration.

The above observations provide better insights as to why the precipitous decline in top income shares during WWII was concentrated *within* the top 1% income group. Because generally the share of capital income in total income is an increasing function of the income level, WWII likely had a larger effect in reducing the income of higher income earners.

4.4 Evidence from Top Estates

Our top income shares and income composition data suggest that capital income (dividends, interest, and rents) accrued to the top income groups declined once and for all during and immediately after WWII. According to the National Account data, however, capital income per se did not disappear from the economy after WWII. Interestingly, National Accounts data show the fraction of capital income (interest, dividends, and rents) in personal income also collapsed at the end of World War II but that it recovered to its pre-war level by the 1980s (see Figure A4 in appendix). This suggests that capital income in the 1980s was distributed much more equally than in the pre war period.

In other words, the fall in the top capital income must have been caused by a permanent decline in wealth concentration. In order to test this hypothesis, we turn to estate tax statistics available since 1905 with the introduction of national estate tax in Japan.

Table 4 presents the sizes of average real estates (in 2002 yen) for five different upper groups from 1905 to 2002.[16] The upper groups are defined relative to the total number of adult decedents reported in Column 1. **Figure 7** displays the averages of the top 0.01% estates and the bottom half of top 1% estates ("top 1-0.5%") in logarithmic scales. Note that the top 0.01% estates correspond to the estates of the top 100 decedents today, whose average was about 5 billion yen or $40 million in 2002. By contrast, the average of the bottom half of top 1% estates was about $2.5 million in 2002. Although this still is a large number, given the high real estate prices in Japan, an upper middle income class family could accumulate an estate of that size.[17]

According to **Figure 7**, both the average top 0.01% and 1-0.5% estates increased rapidly from 1905 to 1937.[18] The top 0.01% estates then declined precipitously by a factor of 100 from 1937 to 1948, while the top 1-0.5% estates declined by a factor 12 during the same period. Note that the very top estates not only fell more dramatically during WWII than the moderately high estates, but continued to fall during the postwar reforms. In the post-WWII period, both estate levels grew very fast during the high economic growth period of 1960-73 and declined after the burst of the asset bubble in 1991. Although the level of the bottom half of top 1% estates surpassed the pre-WWII peak by 1970, the level of top 0.01% estates in the early 2000s was still smaller (in real terms) than in the late 1920s in spite of a ten-fold increase in GDP per capita during this period.

Figure 8 plots the *ratio* of the average top 0.01% estates to the average top 1-0.5% estates from 1905 to 2002. It shows that the top 0.01% estates were about 60 times larger than the bottom half of top 1% estates in the early part of the 20th century. As the very top estates grew faster on average than the moderately high estates, by the late 1930s, the top 0.01% estates were more than 100 times larger than the top 1-0.5% estates. However, because of the differential impact of WWII on the two estate levels, by

[16] Missing years are due to some data inconsistency. Continuous series will be presented in a revised version.

[17] For example, 2,000 square feet apartments in downtown Tokyo could sell for comparable prices (check).

[18] Because the top 0.01% estate series is based on a small sample (50 to 100), annual estimates can be sensitive to the presence of a single extremely large wealth holder in any given year.

1947, the former were only about 20 times larger than the latter. Moreover, this ratio has remained relatively constant from 1960 to 2002 despite the change in Japan's macro economic conditions, such as the high economic growth and the post-bubble stagnation.

In summary, the evidence from estate tax statistics indicates a permanent reduction in the level of very high wealth holdings relative to moderately high wealth holdings during and immediately after WWII in Japan. This dramatic fall in wealth concentration at the very top is consistent with our findings from the top income shares and confirms that top capital incomes declined permanently after WWII.

5. Understanding the Evolution of Income Concentration

Using the income tax statistics, we have documented that (1) a degree of income concentration in Japan was extremely high before WWII, from both historical and comparative viewpoints, but without any positive time trend; (2) the drastic de-concentration of income at the top had taken place during and immediately after WWII; (3) a degree of income concentration has remained low throughout the post-1950 period; and (4) the major component of the top income has shifted dramatically from capital and business incomes to employment income over the course of 20th century. In this section, we explore the causes of the evolution of income concentration documented above.

5.1 High Income Concentration in pre-WWII Japan

One of the merits of our data is that it facilitates a quantitative comparison of income concentration before and after WWII. Our data strongly confirm the received view based on qualitative and circumstantial evidence that there was high concentration of income and wealth among the elite class in prewar Japan. Existing studies suggest three major constituencies of the very rich, i.e., landlords, shareholders, and corporate executives.

First, there was a concentration of land ownership to a small number of "absentee landlords" (*fuzai jinushi*) mostly in rural areas whose lands were cultivated by a large number of tenant farmers. Especially in the earlier years, landowners enjoyed social and economic privileges over their tenants. After WWI, however, both the commercialization of agriculture and the rise of tenant unions led to lower rents and stronger tenancy rights (Waswo and Nishida (2003), pp.14-7). These observations are consistent with the

substantive land rental income component in the top 1% income during 1885-1915 and a gradual decline thereafter shown in **Figure 5**.

Second, before WWII, large firms raised its capital primarily from stock markets, and the business ownership was heavily concentrated on a small number of shareholders. For example, in 1935, at ten largest *zaibatsu* and ten largest non-*zaibatsu firms*, top 10 shareholders held 66% and 32% of total stocks, respectively (Okazaki (2000), pp.103-5). In addition, prewar firms paid high dividends to their shareholders. For example, dividends at major companies routinely exceeded 10% of equity (Okazaki (2000), p.108). At leading manufacturing firms, the average dividend to profit ratio was nearly 70% in the 1930s in contrast to less than 50% in the 1950s (Okazaki (1993), p.184).

Third, during the interwar period, top management at large corporations received extremely high compensation. For example, at five leading electric power companies, executive bonus was 28 times larger than the average income per capita in 1936, while in 1955 it was only 1.5 times larger (Minami (1995a), p.123). At leading manufacturing firms, directors received 6% of profit in the form of bonus in the 1930s, while they received only 2% of profit in the 1960s (Okazaki (1993), p.184). Moreover, large shareholders themselves were often corporate directors in prewar firms, exacerbating the income concentration. For example, at twenty leading manufacturing firms, top ten shareholders held 23% of the director positions in 1935, while they held none in 1947 (Okazaki (2000), pp.103-5).

In a unique study using individual-level data, Yazawa (1992) compares the 5,000 highest income taxpayers in 1936 and 1982 based on *Who's Who* that published their names, the amounts of income tax paid, addresses, and occupational titles. According to the study, in 1936, the average income of the top 1,000 income earners was 164 times higher than the national average, whereas in 1982 it was only 37 times higher (p.155). Out of the top 5,000 income earners in 1936, 31% were in retail business, 22% were in manufacturing, 22% were in finance, and 7% had no occupation (p.159). The study also shows that these top income earners were concentrated in metropolitan areas, such as Tokyo (45%) and Osaka (25%).[19] Only 2.2% of them, however, were the members of aristocracy and only 3.0% were affiliated with *zaibatsu* holding companies, which indicates that the importance of aristocrats and *zaibatsu* families among the elite class should not

[19] Note that his sample covers 26 major prefectures out of total 47 prefectures in Japan, under-representing rural prefectures (p.149).

be overstated (pp.160-6). Yazawa (1992)'s findings are broadly consistent with our data and underscore the importance of business and capital income components in the top income in the late 1930s.

Finally, the legal system in prewar Japan was favorable to the affluent class. In addition to the absence of highly progressive income tax as discussed later, the prewar inheritance law was based on primogeniture that allowed the first-born son (or a designated legal heir) to inherit the entire family estate ("*ie*") under preferential estate tax rates.

In contrast to the preceding studies, we do not find a sharp increase in income inequality (measured by top income shares) between 1890 and 1940. This is not necessarily contradictory if a rise in income inequality documented by the previous studies was driven by the change in the lower end of the income distribution. For example, Mizoguchi and Terasaki (1995) and Minami (1995a) attribute the rising inequality during this period to the widening rural and urban income gap and the increasing intra-industry wage differentials by firm size. If the very top income groups were made up mostly of absentee landlords, large shareholders, and high-powered executives as suggested above, these factors might have had little impact on the income concentration at the very top. Nevertheless, our findings cast some doubt on the Kuznets hypothesis that associates an initial phase of industrialization with rising income concentration.[20]

5.2 The Mechanisms of Income De-concentration in 1938-47

Our data indicate that the top income shares fell precipitously and disproportionately during WWII and continued to fall somewhat in the immediate postwar years. We assess the impact of WWII separately from the impact of postwar occupational reforms in the following analysis.

WWII likely caused the drastic income de-concentration through three main channels. First, after the 1937 China Incident and the promulgation of the 1938 National General Mobilization Law, the military government implemented a set of regulations that placed tight control over landowner rights, shareholder rights, and wages (including executive compensation). For instance, to increase food production, the government expanded its land distribution policy in 1938, and again in 1943, which encouraged tenant

[20] By contrast, British and U.S. historical data provide some empirical support to the Kuznets hypothesis (Lindert (2000)).

farmers to gain ownership of the land they cultivated. State controls on rents and land prices after 1939 also increased the value of tenancy rights vis-à-vis landowner rights. In 1941, the government introduced a two-tier rice pricing system that paid a considerably higher price to owner-farmers and tenants who actually cultivated the land than to landlords who did not (Waswo and Nishida (2003), pp.22-3). Similarly, the government not only intervened in stock markets, but also effectively capped dividend rates at 8% of equity after 1940 and 5% of equity after 1945. Furthermore, starting in 1940, the government regulated wage, salaries, and executive bonuses that tended to reduce intra-firm wage inequality (Okazaki (2000), pp.114-120). These wartime regulations may explain the fall of land rental, capital, and employment income components in the top income starting in the late 1930s.

Second, to finance the rapid military expansion, the government increased tax rates on personal and corporate incomes in 1937, 1938, 1940, 1942, 1944, and in 1945 (Okurasho Shuzeikyoku (1988); see Columns (4)-(8) in **Table 2**).[21] As shown in **Figure 9**, marginal income tax rates for the top 0.01% income earners rose sharply from 39% to 64% during this period. As higher tax rates reduced the net returns on assets, these changes might have made it more difficult for high income rentiers to sustain their assets, further reducing their subsequent capital income.

Third, WWII resulted in a large-scale destruction of wealth, including 25% of physical capital and 668,000 civilian casualties (Keizai Antei Honbu (1947)). In particular, repeated air raids of major cities by the U.S. air force starting in early 1945 likely had a devastating effect on the high income earners who were concentrated in the metropolitan areas (Yazawa and Minami (1993), p.366). Finally, the business income component of the top income remained largely intact during WWII, presumably because the wartime government reintroduced profit motives to induce higher outputs in strategic industries as well as in agricultural production (Okazaki (1993), p.198; Waswo and Nishida (2003), p.22).

Upon Japan's surrender in August 1945, the nation was placed under the indirect governance of the Supreme Commander for the Allied Powers from 1945 to 1952. As Yazawa and Minami (1993) point out, hyperinflation in 1944-48 and postwar occupational reforms together potentially had a large effect in equalizing the income distribution. Three powerfully redistributive measures were implemented during this period.

[21] The government also raised estate (and probably property) tax rates. Find more data.

First, the land reform in 1947-50 mandated landlords to sell their farmlands to ex-tenants, eliminating virtually all large- and medium-sized landowners. As a result, the percentage of land cultivated by tenants declined sharply from 46% in 1941 to 9% in 1955. Importantly, due to hyperinflation, the amount of compensation paid to landowners was negligible (Minami (1995a), p.115). Second, the government imposed extremely heavy and highly progressive property tax (*zaisan zei*) from 1946 to 1951. Because the exemption level was set relatively low, the property tax affected approximately 13% of all households in the initial year. On average the tax amounted to 33% of households' property values, while for the top 5,000 households it was more than 70% (Minami (1995a), pp.125-6). Third, under the dissolution of *zaibatsu* in 1946-48, not only ex- and current directors of *zaibatsu* firms were expelled, but also their shares were confiscated and redistributed to a large number of employees and other investors at a market price (Minami (1995a), pp.121-3). As a result, these reforms likely transferred a significant amount of wealth from the high to the lower end of income distribution. Last but not least, the hyperinflation was a final blow to the high income earners who relied on capital income. By contrast, farmers and small business owners who sold their products in underground markets were said to have earned substantive income in the immediate postwar years.

Despite the emphasis placed on the importance of the occupational reforms in reducing income inequality by the preceding studies, our data show that their impact was limited to the top 0.1% income shares and was modest compared to the impact of WWII (**Figures 3 and 4**). Namely, we find WWII, rather than the occupational reforms, as the single most important event in reducing income concentration. Our finding may seem surprising at first. Yet, it is consistent with the comparative evidence that indicates the universal role of WWII in reducing income concentration in industrial nations, including the United States who won the war (Piketty and Saez (2003)). Furthermore, our finding is also consistent with the view that the postwar reforms were in many ways a continuation of the wartime policies (e.g., Okazaki (2000)). That is, the restrictions on landowner and shareholder rights, the redistribution of farmland, the adoption of progressive taxation, and the check on executive compensation had already begun during WWII, which likely had set off the process of income de-concentration well before the postwar democratization and demilitarization. In short, WWII and the occupational reforms can be seen as a one-

time shock that evened out wealth inequality in Japan through the combination of regulations, destruction, inflation, and confiscation.

5.3 Low Income Concentration in Post-WWII Japan

The more difficult question to answer is why large fortunes did not recover from the profound yet temporary shock of WWII in the decades that followed. Why has the degree of income concentration in Japan remained at the historic low reached in the late 1940s? After all, much of the postwar reforms were either temporary (e.g., property tax and dividend controls) or subsequently reversed (e.g., the formation of corporate groups, *keiretsu*, and the rise of large institutional shareholders). In the following analysis, we argue that the postwar reforms were accompanied by the fundamental change in institutions that prevented the re-accumulation of high wealth.

First, the fiscal reforms in 1950 made progressive taxation a permanent feature of the Japanese tax system. Recall that the enormous fortunes that generated the large top 0.1% income share in the pre-WWII period had been accumulated at the time when progressive taxation hardly existed and capitalists could reinvest almost all of their incomes for further capital accumulation. The fiscal environment faced by capitalists after WWII was vastly different. As shown in **Figure 9**, the marginal income tax rate for the 0.01% top income group rose sharply in the late 1930s and (after a spike in 1945-50 due to temporary tax increases and hyperinflation) remained high at around 60% from the 1950s to the 1980s. In a parallel development, corporate income tax also became progressive after the 1930s. Moreover, new inheritance laws in 1947 abolished primogeniture and mandated the division of estate among children and a spouse. After 1950, the government instituted highly progressive estate and gift taxes that made inter-generational transfer of large wealth much more difficult.

The permanent decline in the capital income component at the top after 1950 can be also attributed to the development of tax-exempted saving instruments for small asset holders. Since the 1960s, the government introduced various measures that made interest income accruing from postal savings, small accounts and investments, and employee savings non-taxable. Although these measures were abolished by the 1988 tax reforms, they had encouraged capital accumulation among the middle income families relative to the high income earners, contributing to more equal wealth distribution in Japan.

Second, the changes in corporate governance, human resource management, and union structure in Japan likely had an impact on the distribution of wages and executive compensation within and across corporations. In a contrast to the interwar period, corporate governance of major Japanese companies after WWII was characterized by long-term relations with main banks based on debt finance (rather than equity finance) and cross shareholdings by large and stable institutional investors (e.g., banks, insurance companies) (Teranishi (2000)). As the so-called "lifetime employment" became a hallmark of human resource management at large- and medium-sized firms in the 1960s, most if not all company directors positions were filled by long-term employees promoted from within, resulting in a stronger voice of employees vis-à-vis shareholders in corporate decision making (Okazaki (2000)). Moreover, after WWII, most large corporations were organized by single enterprise unions, which consisted exclusively of employees of the company including not only blue- and white-collar employees but also middle managers. By the 1970s, Management regularly consulted with, and disclosed financial information to, unions over personnel matters including wages and promotions (Morishima (1991); Moriguchi (2000); Kato and Morishima (2002)). As a result, despite the re-emergence of powerful corporate groups in the post-WWII period, the changes in corporate governance and union structure might have contributed to lower dividend rates, less concentration of shares among individual shareholders, and more equal wage distributions within firms. We will turn to wage income data to examine these possibilities more closely in Section 6.

5.4 The Effects of Tax Evasion and Avoidance

Tax Evasion

In the above analysis, we provided explanations for the changes in the top income shares we have documented using income tax statistics. As discussed briefly in Section 3, however, the incomes reported by individuals for tax purposes might be biased by unlawful and lawful under-reporting, and hence may not reflect their true economic incomes. In this section, we discuss what is known about the extent of tax evasion and avoidance, and provide some sensitivity analysis to show whether our findings can be explained away by these phenomena.

The precipitous and permanent drop in income concentration after WWII could be explained by tax evasion (i.e., unlawful under-reporting of income) only if the evasion

among top income groups increased dramatically during WWII and remained high ever since. One may assume that tax evasion must have been rampant during WWII when labor and material shortages disrupted normal functioning of any administration. Yet, seeking additional sources for war finance, the government imposed various temporary taxes and tightened the monitoring over tax collection during the war (Japan Ministry of Finance (1988)). Second, it is unlikely that tax evasion was lower in the prewar period when the tax administration was smaller and when most businesses did not compile systematic accounting records. By contrast, after WWII, both the enforcement power and technology available for the tax administration were considerably expanded, and most economic transactions took place within large corporations or financial institutions that used accounting methods leaving records that the tax administration could examine.

For instance, it is widely believed that there is little tax evasion in Japan today concerning employment, dividend, and interest incomes precisely because the withholding system established in 1950 captures these incomes at source with the cooperation from corporate employers and financial institutions. By contrast, tax evasion is considered to be substantially higher for business and farm incomes for which the withholding system does not apply. According to the most recent estimate by Hayashi (1987), while nearly 100% of employment incomes were captured, only 50% of business income and 10% of farm income were reported to the tax administration. However, both business and farm income components in the top income are so small today that it would require rates of evasion an order of magnitude higher than these estimated rates to generate the top income shares as high as in the pre-WWII period. For example, if we assume that only 10% of farm income and 50% of business income is reported in 1999, the top 1% income share including non-reported farm and business income would increase modestly from 7.8% to 8.5%.[22] In summary, it is difficult to argue that the apparent permanent decline in income concentration was due to tax evasion.

Tax Avoidance and Evidence from the Family Saving Survey

In addition to tax evasion, individuals may under-report their true income using legal means and instruments (i.e., tax avoidance). Over the last fifty years, various

[22] In 1999, business income and farm income represent 8.3% and 0.1% of reported incomes in the top 1%. With no evasion, they would represent 16.6% and 1% respectively, and the top 1% income share would be about 9% higher.

exemptions and special treatments have been given to different components of income in Japan, especially to interest income and real estate capital gains. In particular, as discussed above, the development of tax-favored saving instruments since the 1960s sheltered a significant fraction of interest income from the progressive income taxation. These treatments effectively gave taxpayers the option of paying a separate tax rate at source (*gensen bunri kazei*) on those components, instead of aggregating them to their other incomes and facing the progressive tax schedule. As a consequence, the self-assessed income tax statistics do not report those components that are taxed separately. However, because most of the saving instruments favored small asset owners, this reporting bias is likely to be rather modest at the top income in the post-war period. Nonetheless, it is important to carefully evaluate the impact of tax avoidance. Ishi (1979, 2001) has attempted to estimate a comprehensive income base in order to assess the extent of tax erosion, using household surveys and unpublished data obtained from the tax administration. Ishi's primary interest was to estimate the tax lost through all special treatments given to various forms of income. Therefore, his estimates cannot be used directly to estimate the extent of capital income not reported on the progressive income tax.

Realized capital gains are taxable and reported on income tax statistics since 1947. The series we have reported so far completely excluded capital gains. It is possible, however, to estimate top income shares including realized capital gains. Figure 6 plots the top 0.1% income share series including and excluding capital gains. The figure shows that capital gains had a very large but temporary effect on top shares in the early 1970s and the late 1980s, at the times of the asset bubbles. Even at the peak of the asset bubble in 1990, the top 0.1% income is much lower than during the pre-war period. Outside those bubble years, capital gains have only a modest impact of the top income shares. This implies that taking into account capital gains does not change our central conclusion that income concentration has decreased drastically from the pre-war to the post-war period.

The best alternative source on the distribution of capital income in Japan comes from the family income and expenditure survey (FIES) and the related family saving survey supplement. The family saving survey reports tabulations by size of income, of average income and average holdings of various financial wealth components, such as time deposits, bonds, corporate stock, life insurance savings, and debts. We can use the tabulation by size of income of the head of household in order to (1) re-estimate top

income shares with the survey data, (2) estimate how much net interest income, dividend income, and returns from life insurance savings those top income groups are getting.[23] Table C reports such figures, along with our tax statistics results for 1999. Three findings should be noted.

First, the levels of incomes in the top income groups from the survey and from tax statistics are relatively close below the top 1%. It is not surprising that the survey underestimates incomes at the very top relative to tax statistics. This is primarily due to the fact that the survey is a small representative sample of about 50,000 and hence contains very few observations in the very top groups, and therefore cannot generate accurate estimates for groups smaller than the top 0.5%.[24] This suggests that there is no systematic downward bias from income tax statistics relative to the survey and that claims that the income tax statistics are useless due to tax evasion or avoidance are not valid.

Second, the table shows that capital income estimated from the survey is also extremely low relative to total income: even for the top 0.5%, the sum of interest, dividends, and returns from insurance policies is about 7.5%. More importantly, the fraction of capital income at the top (equal to 7.5%) is actually very close to the average among all households equal to 7.1% (Panel A). This suggests that today, capital income is not especially concentrated at the top of the income distribution.

Third, it is true that income tax statistics do not include any interest income or returns from insurance policies. However, if, as shown in Panel A and C, interest income and returns from insurance policies are not disproportionately earned by high income individuals, then adding back those incomes in the top groups would lead to increase the top shares we estimate by about 5% only and would certainly not change our main conclusion that top income shares are much lower today than in the pre-war period.

Dividends are also under-reported below the top 0.5% on income tax returns. This is primarily due to the fact that wage earners with dividend or other income less than 200,000 Yen in 1999 are not required to file a tax return. Therefore, those individuals

[23] We assume that the FIES represents all Japanese households. We also assume that all household savings reported in the survey belong to the head of household. We make this extreme assumption in order to generate an upper bound on capital income estimated from the survey. Capital income corresponding to reported savings is estimated proportionately so that the sum of capital income matches the totals of net interest income, dividend income, and returns from life insurance savings in total personal income from National Accounts.

[24] The same phenomenon is true in other countries such as United States where tax return data generate higher top incomes than the Current Population Survey.

appear only in the wage income statistics and their dividend income does not appear on the tax statistics we use. In contrast, individuals with large dividend income in general report those dividends for the progressive income tax and are included in the tax statistics we use.[25] The tax statistics show indeed that the fraction of dividend income increases with income: dividends represent only 2.1% of income for the top 0.5% but they represent 4.2% of income for the top 0.1%. Thus, dividends are definitely earned disproportionately by the rich. However, they represent only 0.9% of all personal income in the economy (Panel A). Therefore, even if we made the extreme assumption that nearly all dividends go to the top 1%, that would increase the top 1% share by at most 0.9 percentage point, a rather modest increase.

In summary, the evidence from the family saving survey is broadly consistent with the tax data and suggests than capital income is not heavily concentrated at the top of the income distribution. Therefore, although some components of capital income are not reported on income tax returns, adding those back to our estimates would lead to relatively small upward adjustments for top income shares (perhaps around 5 to 10%). Hence, this would not change our main conclusion that Japan experienced a drastic reduction in the concentration of capital income from the pre-war period to the post-war period.

6. Top Wage Income Shares in Japan, 1924-2002

6.1 Trends in Wage Income Concentration

In this section, we present our estimates of top wage income shares in Japan to investigate the role of employment income in the evolution of income concentration. Wage income in our definition includes wages, salaries, bonuses, and allowances. For the pre-WWII period, we use wage distribution tables published in the *Report on the Census of Labor* in 1924, and 1927, and salary and bonus data reported in annual income tax statistics in 1929-1944. For the post-WWII period, we use the *Survey on Private Wages and Salaries* published annually by the tax administration since 1951. **Figures 10 and 11** present the top 5% and 1% wage income shares in Japan from 1924 to 2002, together

[25] In 1999, dividends could be taxed separately at a rate of 35% (and not reported on individual returns). However, with a top marginal tax rate of 39% and a tax credit equal to 5% of dividend income, it is more advantageous to report dividends under the progressive income tax.

with equivalent series in the United States from 1927 to 2002 from Piketty and Saez (2003).[26]

First, during 1924-1935, Japan exhibited a high degree of wage income concentration where the top 5% received more than 20% of total wage income and the top 1% received about 8% of total wage income. As one might expect, the degree of wage income concentration is smaller than that of income concentration during the same period (8% versus 16% for the top 1% group), yet it is higher compared to the post-WWII period. High wage income inequality in Japan during the interwar period can be explained by large intra-firm, and to a lesser extent, inter-firm wage differentials. As discussed above, wages and bonuses paid to top management, white-collar employees, and production workers within the same firm were widely dispersed before WWII, resulting in high intra-firm wage inequality (Showa Dojinkai (1960), p.269 and p.263). In addition, with the growth of heavy industries with high capital intensity, productivity gap by industry as well as by firm size had widened since the First World War, resulting in substantial inter-firm wage differentials (Yasuba 1976).

Second, we observe a sharp decline in wage income concentration from 1935 to 1944, as the top 5% wage income share fell from 24% to 9% and the top 1% share from 8.6% to 3.2%. According to our income composition data in **Figure 5**, the share of employment income in the top 1% income remained fairly stable until 1940 then dropped sharply until around 1947. In light of this observation, we attribute the initial decline in wage income concentration in 1935-40 to the tightening of labor markets due to military expansion that compressed the wage distribution from below. The further decline in 1940-44 is likely due to the wartime regulations that capped executive compensation as well as reduced wage differentials across firms by imposing stringent wage control. Compared to the top income shares, the decline in top wage income shares during WWII was smaller yet substantial. It shows that, although the decline in income concentration was largely a capital income phenomenon, employment income also played a nontrivial role.

Third, after WWII, top wage income shares had recovered somewhat by 1951, rose until 1961, and then declined gradually over the next two decades. This initial increase is consistent with our income composition data that show the immediate recovery

[26] Discuss comparability between Japanese and U.S. data.

of the employment income component in top incomes after WWII.[27] It is worth noting that the trends of the top wage income shares parallel the trends in the income inequality of all households in Japan reported in the previous studies (see **Figure B**). It implies that while capital income played a major role in determining the evolution of the top income shares, employment income played a more important role in determining the overall income inequality in the economy. Minami (1995b) attributes the rise in income inequality in the 1950s and its decline in the 1960s primarily to the Japan's transition from the chronic labor surplus before 1960 to the chronic labor shortage after 1960. Concerning the top wage income shares, their decline can be explained by the institutionalization of lifetime employment and enterprise unionism in the 1960s that compressed intra-firm wage dispersion. In particular, by this period, executives at large firms were entirely promoted from within and received relatively modest compensation. According to our income tax statistics, for example, bonuses were no longer concentrated on the top wage earners but distributed proportionately to wages and salaries.

Finally, despite the concern about the rising income inequality in Japan over the last two decades (Tachibanaki (1995)), in terms of wage income, we find only a slight increase in the top 5% and 1% wage income shares.

6.2 Comparative Analysis of Japan and the United States

As shown in **Figures 10 and 11**, the top wage income shares were roughly comparable in the United States and Japan during 1924-35. Then wage income concentration in both countries fell sharply by the end of WWII. In contrast to Japan, however, the U.S. top wage income shares remained low in the 1950s and 1960s. As a result, Japan and the United States exhibited the similar degree of wage income concentration at the end of the 1960s. The pattern of wage income concentration, however, has sharply diverged between the two countries since the 1970s. While the top 1% wage income share in Japan has been nearly constant at around 5% from 1970 to 2000, the share in the United States has risen exponentially from 5% to 12% during the

[27] Top wage income shares never reached again the pre-war levels even at their post-war peak of 1961. This is possibly due to the rise of unions and the purge of top management in major firms immediately after WWII, as well as the much more equal distribution of bonuses after world war II than in the pre-war period.

same period. Consequently, today, the United States exhibits a much higher degree of wage income concentration than in Japan.

What explains the sharp divergence? Note that it occurred at a time when Japan had virtually caught up with the United States in both the level of income per capita and the stage of industrialization, as both countries entered the third industrial revolution based on high technology. Therefore, in contrast to what recent skill-biased technological progress theories have posited (see Acemoglu (2002) for a survey), the comparative experience of the United State and Japan suggests that technology alone cannot account for the change in wage inequality. At the very least, elements other than technology – demographic changes (e.g., female labor force participation, aging), government policies (e.g., tax incentives, minimum wages), and institutional factors (e.g., internal labor markets, social norms regarding pay inequality) – have to be taken into consideration. Although understanding the relative contributions of those elements is beyond the scope of this paper, below we briefly examine the effect of income tax policies on wage inequality.

To assess the impact of income tax rates on wage income distribution, **Figure 12** presents the top 0.1% wage income share and the average marginal income tax rates faced by this group in Japan (**Panel A**) and the United States (**Panel B**) from 1960 to 2002. In the United States, a number of influential studies, such as Lindsey (1987) and Feldstein (1995), have argued that the reductions in the top marginal tax rates since the 1970s – especially the sharp reduction in the late 1980s – were the key factor that drove up high incomes. According to their view, referred to as supply-side theory, lower income tax rates would increase reported incomes through higher labor supply and/or a shift from tax-exempted forms of compensation to taxable cash compensation. Their conclusions have been challenged by subsequent studies and remain controversial (see Saez (2004) for an extensive survey). It is in this context that Japan's experience may offer new insight. As shown in **Panel A**, the marginal tax rate faced by the top 0.1% wage earners in Japan has also declined by 2% between 1980 and 2000, the magnitude roughly comparable to that in the United States between 1970 and 1987. However, these reductions have failed to generate any supply-side effects in Japan.[28] The comparative

[28] In this context, it is ironic to re-read Lindsey (1990) who predicted that supply-side effects would be very large in Japan. The prediction was based on the fact that large Japanese companies relied

experience of Japan and the United States thus also rules out income tax incentives as the primary determinant of wage inequality. In the case of Japan, highly developed internal labor markets and the resulting absence of competitive markets for corporate executives might have played an important role in preventing the rise in wage inequality.

7. Concluding Remarks

In this paper, we document the evolution of income concentration in Japan from 1885 to 2002, using the series of top income shares and wage income shares we have constructed from income tax statistics. To conclude our study, we review Japan's experience from a comparative perspective.

According to our data, Japan was a nation of high income concentration throughout the pre-WWII period. Although the degree of income and wealth concentration in Japan was extremely high during the early part of the 20th century by historical standards, it was comparable to that of other industrial nations, such as Britain, the United States, France, and Germany, during the same period (Atkinson (2002); Piketty and Saez (2003); Piketty (2003); Dell (2004); see also **Figure 13**). These countries experienced a substantial decline in income concentration during the interwar period, due largely to the Great Depression and the introduction of highly progressive income and estate taxation. By contrast, as we have shown, income and estate taxes remained low in Japan until the late 1930s, and the impact of the Great Depression on the Japanese economy was far milder (Moriguchi (2003)). As a result, even by international standards, Japan exhibited a high degree of income concentration at the eve of WWII. For example, as late as in 1939, the top 1% income earners received almost 20% of total income in Japan, whereas the share was only about 15% in France, the United States, and even in Nazi Germany.

As in the other countries, the top income shares (especially the very top shares) in Japan fell abruptly and dramatically during WWII. Our income composition data and estate tax data indicate that this sharp reduction in income concentration was due primarily to the collapse of capital income, as large fortunes were hit hard by the wartime taxation, war destruction, post-war hyperinflation, and redistributive policies implemented under the U.S. occupation. Due to the higher level of income concentration prior to WWII,

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extensively on tax-exempt forms of compensation, such as business meals, vacation, and corporate cars.

the impact of WWII in reducing income concentration was much more pronounced in Japan than in the United States, or even Britain, France, and Germany.

Our data show that this one-time income de-concentration process had a long lasting impact in Japan. We argue that the structural change of the economy that had taken place in the post-war period transformed the temporary effect into a permanent one. In particular, we suggest that the fundamental changes in government tax policies, corporate governance, and union structure likely have kept wealth concentration in Japan at the low level. Interestingly, Japan achieved the most impressive and sustained economic growth under the environment unfavourable to capital accumulation and without significant increase in income or wealth concentration. Our findings thus raise some doubt on the view that free accumulation and transfer of wealth is a necessary condition for macro economic growth.

According to our wage income series, the degree of wage income concentration in pre-WWII Japan was high and roughly comparable to that in the United States during the same period. Top wage income shares fell sharply in the late 1930s and during WWII due to tight labor markets and wartime regulations, but they recovered quickly and peaked in the early 1960s. After a decline in the subsequent two decades, wage income inequality has increased only slightly since the 1980s. This recent increase in Japan, however, is very small compared to the recent surge in wage income concentration in Anglo-Saxon countries (e.g., the United States, Britain, Canada). Based on our comparative analysis, we argue that neither technology nor tax policy alone can explain the change in wage income inequality. Instead we emphasize the importance of understanding the interactions between technology, government policies, and institutional factors governing corporate compensation policies.

APPENDIX

A. Top Income Shares

Our data are from personal income tax return statistics compiled annually by the Japanese taxation authorities since 1887.[29] The Tax Bureau of the Ministry of Finance (renamed the National Tax Administration in 1947) has published *Annual Statistical Report* since 1883 to date for every single year. The annual reports contain the distributions of reported incomes by brackets, which can be used to construct top income share series (see below). The breakdown by sources of income (such as wages and salaries, business income, dividends) is available by income brackets after 1947. Before 1947, the composition of income is only available at the aggregate level for fiscal years 1887, and 1901-1946.

A1. Tax Units

From 1887 to 1949, the tax unit was the family defined as a married couple with dependents (such as children or old parents), or a single head of household with dependents. Incomes of cohabitating family members in a single household were aggregated for income tax purposes. Starting in 1950, the income tax became individual, whereby spouses are taxed separately on their incomes. In order to produce homogeneous series over the entire period, we have decided to estimate top income shares at the individual level. Thus, our top groups are defined relative to the total number of adults (defined as those aged 20 and above) in Japan. The total number of adults is obtained from official population statistics (based primarily on census data) and is reported in Table 1.

For the pre-1950 period, for most years (1903-1938, and 1949), the tax statistics distributions breakdown total income into head of household income and the income of dependents. The income of dependents is very small relative to the head of household income and can be subtracted in order to obtain estimates of top individual incomes.[30]

For the pre-1950, it is also possible to compute top income shares using the household as the tax unit. Total households in Japan can be obtained from Otsuki and Takamatsu (1978), Table 1, p. 340. We have computed such top income shares. Those results are not reported in the present paper but will be used later on for performing a careful comparison with studies on pre-war inequality, which focus in general on the household unit. The pattern of household top income shares is very close to the pattern of individual top income shares because the ratio of adults to households is very stable across the period 1885 to 1950 (it fluctuates between 2.65 and 2.95 but with no trend over the period).

A2. Total Income Denominator

In order to obtain top income shares, we need to estimate the total income denominator. This denominator should ideally be total personal income reported on tax returns had

[29] Japan Ministry of Finance, Tax Bureau (1988) provides detailed history of income tax system, including tax laws and aggregate statistics.

[30] This correction method is appropriate as long as the share of dependent income is small. After 1950, the tax statistics, based on individual income, do not allow to reconstruct household income. That is why we focus on individual income in this study.

everybody been required to file an income tax return. As only a small fraction of households filed income tax returns in the pre-war period, the income tax statistics cannot be used to estimate the denominator and we have to rely on National Accounts data.

1) System of National Accounts since 1930

The Japanese System of National Accounts (SNA) provides comprehensive estimates since 1930. There are three partially overlapping series: (1) the old SNA (1930-1976, reported in Historical Statistics of Japan, Volume 3, Section 13-5), (2) the 68SNA (1955-1998, reported online in Historical Statistics of Japan, Chapter 3, at http://www.stat.go.jp/english/data/chouki/index.htm, Table 3.6), (3) the 93SNA (1980-2002, also reported online in Historical Statistics of Japan, Chapter 3, Table 3.24). National Accounts are relatively detailed and provide the breakdown of personal income into the main components: wages and salaries, social contributions of employers and employees, personal capital income (dividends, net interest income, rents received), unincorporated business income (agricultural business income, imputed rents of homeowners, and other business income).[31] Social contributions of employers, imputed rents (included in unincorporated business income) are not part of the individual taxable income. Hence we define our personal income denominator as the sum of wages and salaries, employees' social security contributions, personal capital income (the sum of dividends, rents received, and net interest income), and unincorporated business income (excluding imputed rents). The 93SNA reports the returns on insurance policies separately (this item was included in personal capital income in the old SNA and the 68SNA). We had back returns on insurance policies to personal capital income to obtain consistent series. Our personal income denominator is obtained from the 93SNA for the period 1999-2002, the 68SNA for the period 1955-1998, and from the old SNA for the period 1930-1954. The 93SNA and 68SNA personal income denominators are extremely close in 1998 (less than 1% difference) so we do not make any correction to paste the 68SNA and 93SNA in 1998.

The old SNA personal income denominator in 1955 is 4.4% higher than the 68SNA in 1955. Therefore, in order to obtain homogeneous series, we have reduced old SNA personal income by 4.4% so that the old SNA matches the 68SNA exactly in 1955. The old SNA does not provide estimates for 1945. Therefore, we have assumed (as in Maddison, 1995), that real income in 1945 is one half of real income in 1944 based on partial estimates from other authors.

Figure A4 in appendix displays the composition of the personal income denominator into dividends, interest, rents, business income, and employment income.

2) Personal Income Denominator before 1930

[31] The old SNA does not report break down separately imputed rents from received rents for the period 1946-1976. We have estimated imputed rents for the old SNA using the 68SNA and assuming that the fraction of imputed rents in total rents for the period 1946-1955 is equal to the fraction from 68SNA in 1955, the first year the 68SNA becomes available. Similarly, the old SNA does not report separately social contribution from employees and social contribution from employers. We assume that social contributions from 1930 to 1954 are divided as in year 1955. Social contributions were very small during that period and therefore this imputation issue has a very small effect on the total denominator.

Japan did not produce official National Accounts estimates before 1930. Therefore, we have estimated the denominator before 1930 based on the series of personal disposable income from 1885 to 1930 from Ohkawa, Shinohara, and Umemura (1974), Volume 1, Table 8, col. (9). Personal disposable income in 1930 is 11.5% higher than the personal income denominator estimated above from the old SNA. Therefore, in order to obtain homogeneous series, we have reduced personal disposable income from 1885 to 1929 by 11.5%. The income for fiscal years 1887 to 1898 was based on the average income earned during the previous three years (for example, income tax for year 1898 was based on the average income earned in 1895, 1896, and 1897). Therefore, the corresponding personal income denominator is taken as the average of the nominal annual personal income denominators previously estimated.

It is important to note, however, that there is considerable uncertainty in total income estimates for pre-war Japan as no elaborate system of National Accounts existed in that period. Okhawa et al. (1974) have proposed the most recent and authoritative estimations, which have been used for example as the main source in Maddison (1995) estimates. Other National Income series have been proposed previously by other authors, which diverge substantially from Okhawa et al. (1974). The main other pre-war estimates of National Income are presented in the Historical Statistics of Japan, Volume 3, Table 13-3 (pp. 344-349). The estimates from Yamada (from 1875 to 1948) are about 10 to 15% percent higher than Okhawa et al. estimates before 1900, comparable during the 1900-1915 period, and about 10 to 20% lower during the 1915-1930 period. Using the Yamada estimates would have produced a more markedly increasing pattern of top income shares during the period 1885 to 1930 but would not have changed the conclusion that top incomes shares were much higher in the pre-war period than in the post-war period.

Hijikata estimates from 1900 to 1937 are substantially lower than Okhawa et al. estimates during the period 1900 to 1920 (about 40 to 50% lower) and somewhat lower from 1920 to 1937 (about 20% lower). Thus Hijikata estimates would have lead to even higher top income shares in the period 1900 to 1937 and more declining pattern of top income shares over the period 1900 to 1937.

Finally, the Cabinet Bureau of Statistics series from 1887 to 1935 obtain substantially larger estimates in the period 1887 to 1895 (about 40% higher) and then much lower estimates in the period 1900-1935 (about 30% lower). Those estimates are obtained directly from taxable income and are therefore the least appropriate to use as an independent denominator for our study.

3) Consumer Price Index

We use a consumer price index (CPI) to deflate our nominal income series in Tables 1 and 4. Our CPI estimates for the period 1885 to 1950 are from Okhawa et al. (1967) *Estimates of Long-Term Economic Statistics of Japan since 1868*, vol. 8 Prices, p. 135, col. (1). For the period 1950 on, our CPI estimates are from the *Japan Statistical Yearbooks.* The price index (with base 100 in 2002) is reported in Table 1 column (9). The total real personal income denominator and average personal income per adult are reported in columns (7) and (8) in Table 1.

A3. Construction of Top Income Shares

Our series are constructed using a simple Pareto interpolation method as in Piketty and Saez (2003). There are a number of important changes in the tax law that affect the comparability over time of the income tax statistics we use and which must be corrected for in order to obtain homogeneous series over the full period.

1) Combining Self-assessed Income Statistics and Wage Income Statistics (1950-2002)

Because of the development of an extensive withholding system in Japan, most individuals with only employment or pension income are not required to file self-assessed income tax returns starting in 1950. At the end of the year, there is an adjustment in the last amount withheld so that total taxes withheld correspond exactly to total income taxes due. In that case, no income tax return has to be filed and the person does not appear in the official statistics of self-assessed income tax returns. As a result, although most income earners pay income taxes in the 1950-2002 period, only a minority of taxpayers (about 10-15% of all adults) is required to file a self-assessed tax return. Therefore, the official tax statistics are missing a large number of income earners. Fortunately, the Japanese fiscal administration also publishes statistics from the withholding tax system on wage earners which include virtually all wage earners in the private sector and which we use to complete the self-assessed income tax statistics. Those wage income statistics are summarized in the main *Annual Statistical Report* of the fiscal administration (where the statistics on self-assessed income tax returns also appear). They are also published in much more detail in the annual (since 1951) *Survey on Private Wages and Salaries.* Those statistics report the distribution (by wage income brackets) of annual wage income for all employees in Japan but excluding employees in the public sector (government employees) and temporary workers. It also excludes retirees. We inflate the survey distribution by a uniform 10 percent factor in order to account for the fact that government workers and retiree employees are not included in the wage survey distribution (TO BE DONE).[32]

We need to combine the self-assessed income tax statistics and the survey of private wages and salaries statistics in order to obtain a complete income distribution as follows. The key difficulty is that a number of wage earners file self-assessed tax returns (primarily because they have other sources of income). Those wage earners appear in both the self-assessed and the wage survey statistics. Thus, before combining the wage survey with the self-assessed statistics, we need to subtract wage earners filing self-assessed returns from the wage survey. We use the composition information by income bracket from the self-assessed income tax statistics to do so. Those composition tables report, by income brackets, the number of wage earners (defined as taxpayers with any wage income) and the wage income reported for each income bracket. From those statistics, we estimate a distribution of wage income earners (by wage income brackets) for those self-assessed wage income earners. We obtain such a distribution by assuming that the ranking by total income and the ranking by wage income is the same. We then subtract out this distribution from the wage income distribution from the wage survey report. This net distribution represents all wage income earners who did not file a self-

[32] This amounts to assuming that government employees and retirees have the same income distribution as private sector employees, which probably introduces a slight upward bias in our estimates.

assessed income tax return. We then add the net distribution to the original self-assessed income distribution.

2) Tax Erosion (1950-2002)

The potentially more serious issue is the erosion of the tax base. Over the years, special treatment has been given to various components of income, especially interest income, and some forms of realized capital gains. In particular, the development of tax favored saving instruments shelters an important fraction of interest income from the progressive income tax. In effect, those special treatments in general give taxpayers the option of paying a separate tax rate at source on those components instead of aggregating them to their other incomes and facing the progressive tax schedule. As a result, the self-assessed income tax statistics do not report those components taxed separately. Ishi (2001) has attempted to compute comprehensive measures of income in order to assess the effects of tax erosion on taxes collected using unpublished data obtained from the fiscal administration. We build upon his methodology and use alternative sources such as the Survey of Private Savings in order to correct for the missing income components. (TO BE DONE)

3) Treatment of Capital Gains (1947-2002)

Before 1947, realized capital gains were not included in the income tax base. From 1947 on, realized capital gains have been taxable (often with special tax rates and special exemptions varying over time). Realized capital gains are included in the income tabulations for the 1947-2002 period. Therefore, in order to obtain consistent series with the pre-1947 period, we need to remove capital gains from our top income share estimates. We use the composition tabulations by income brackets to do so.

We first compute the share of realized capital gains in each top income groups using the composition tabulations and a straightforward linear interpolation method (as in Piketty and Saez, 2003). Second, we subtract 80% of the realized capital gain component from our top income share estimates. For example, if the top 1% income share with capital gains is 6%, and the share of capital gains is 50%, we estimate the top 1% income share as 6*(1-0.5*0.8)=3.6%. Removing 100% of the capital gain component would bias the income shares downward as the ranking of taxpayers by income excluding capital gains is not necessarily equal to the ranking including capital gains. This issue also arises in U.S. study by Piketty and Saez (2003) and the Canadian study by Saez and Veall (2003). Using micro-data where it is possible to estimate income shares with and without capital gains, they conclude that the 80% rule is giving quite good estimates.

We have also estimated income share series including capital gains. For those, we still need to adjust the capital gain component (and the income share series) upward to reflect the fact that, in a number of years, only a given fraction of realized capital gains is taxable and hence included in the published statistics.

4) Capital Income Exclusions (1899-1939)

In the pre-war period, the treatment of dividends, executive bonuses, and interest income changes over the period. From fiscal years 1887 to 1898, the income tax base is comprehensive and fully includes dividend, bonus, and interest income. However, from fiscal years 1899 to 1920, dividend, bonuses, and some interest income were excluded

from the comprehensive individual income tax base and hence disappear from the comprehensive income tax statistics. From 1921 to 1936, 60% of dividend and bonus income is included in reported income, 80% from 1937-1939, and 100% after 1940. Interest income is fully included again starting in 1940. Those changes create large discontinuities in the data, especially for very top groups. We correct for those discontinuities as follows.

First, we estimate the total amount of missing dividends and bonuses on individual tax returns due to those exemptions. For years, 1921 to 1939, we can obtain missing dividends and bonuses from total reported dividends and bonuses as we know that a fixed percentage of dividends and bonuses are reported (60% in 1921-1936 and 80% in 1937-1939). For years 1899 to 1920, no dividends or bonuses at all are reported, and therefore we have to rely on the alternative source of corporate income tax statistics to estimate dividends and bonuses. From 1899 to 1938, corporate profits were taxed separately as Class I income. For years 1921 to 1939, we can therefore estimate both corporate profits from Class I (corporations) tax statistics and total dividends and bonuses paid out from Class III (individual) tax statistics. During the period 1921-1935, about 50% of corporate profits were paid out as dividends and about 20% were paid out as bonuses. For years 1936-1938, corporate profits were very high (around 12-15% of total personal income) but dividends did not go above 5% of total personal income. Therefore, we assume that 50% of corporate profits are paid out as dividends in the period 1899 to 1920, up to 5% of total personal income (the 5% rule is binding during the high profit years of 1915 to 1918). We also assume that 20% of corporate profits are paid out as bonuses in the period 1899 to 1920, up to 2% of total personal income.

Second, we assume that 75% of those missing dividends and bonuses go to the top 1% income earners, 68% to the top 0.5%, 52% to the top 0.1%, 43% to the top 0.05%, and 27% to the top 0.01%. Those percentages are based on the relative composition of dividend income in top groups in the United States in 1916 in the analysis of Piketty and Saez (2003). This is a very rough and unfortunately not testable assumption as no composition data by income brackets has been published by Japanese income tax statistics before 1947. Our method smoothes most the discontinuities in the raw data due to changes in exemptions and seems therefore acceptable.

We have not made any correction for exempted interest income from 1899 to 1939. First, from 1899 to 1919, only a small fraction of interest income (interest income from public bonds only) was excluded from Class III (individual income). This interest income was taxed separately as Class II interest income and represents less than 1% of total personal income. Starting in 1921, not only public bond interest but also interest from bank deposits is excluded from Class III income and included in Class II income. As a result, the ratio of Class II income to total personal income jumps from less than 1% to about 5%. However, the series on total interest income reported on individual income tax returns show not break when bank deposits interest moves from Class III to Class II implying that the high income earners filing income tax returns did not have much bank deposit interest. Therefore, no correction is necessary for interest from bank deposits.

Below some threshold, a fraction (between 10 and 20 percent) of wage and salary income could be deducted from reported income, and hence does not appear in the statistics. This deduction is not significant at the very top for which employment income is minimal. Therefore, we do not correct for this exemption.

Figures A1, A2, and A3 in appendix graph top 1%, 0.1%, and 0.01% respectively, before and after the capital income exclusions have been corrected.

5) Fiscal Years versus Effective Years

For 1887 to 1898 taxation years, incomes reported for tax purposes are based on the average of the previous 3 years (i.e., for year 1887, incomes reported are the average of incomes earned in 1884, 1885, 1886). From 1899 to 1946 tax years, the incomes reported correspond incomes earned in the previous year only. Starting in 1947, a withholding system is created and the income tax becomes a pay-as-you earn system. Thus, since 1947, income statistics correspond exactly to the tax year. Because of the switch to the pay-as-you earn system in 1947, incomes earned in 1946 were not subject to the progressive income tax, and hence no income statistics are available for that year. The correspondence between taxation years and years in which income is earned is reported in Columns 1 and 2 of Table 1. In principle, averaging over 3 years should lower top income shares because of fluctuations in income. We do not correct for this, and thus our top shares for the years 1885-1897 are probably slightly biased downward.

A4. Construction of Top Income Composition Series
[TO BE COMPLETED.]

B. Top Estates

B1. Construction of Top Estate Series

Japan has imposed a national estate tax on an annual basis since 1905. Statistics on the estate tax have been consistently reported in main tax statistics report. Those statistics report the distribution of estates for a wide range of brackets. We use those statistics to estimate series of the level of estates for various groups at the top of the estate distribution. Those groups are defined relative to the total number of adults (aged 20 and above) decedents in Japan. The series of adult decedents in Japan is obtained from published vital statistics of number of deaths by age and gender groups in the *Japan Statistical Yearbook* (from 1985 to 2002) and in the *Historical Statistics of Japan*, pp. 218-219 for the period 1900-1985. The total number of adult deaths in Japan is reported on col. (1) in Table 4. The number of estate tax returns in reported on col. (2). Col. (3) shows that the estate tax returns cover only a minority of deaths (about 5% in the recent period).

For the period 1905-1949, we assume that estate tax statistics reported for year t correspond to deaths taking place mostly in year t-1 (NEED TO DOUBLE CHECK). For the period 1950-2002, estate tax statistics reported in year t correspond to deaths occurring in year t.

Estate tax statistics present the tabulations by size of estates. Estates are defined as the sum of all properties (all real estate and household properties, unincorporated business assets, stocks of closely held and publicly traded corporations, bonds, cash, deposits, value of remaining pension rights, etc.) net of all debts and liabilities. Therefore, virtually all components of transmittable wealth are included in the determination of the net estate for tax purposes and hence should give an accurate estimate of the value of wealth held by decedents. Although there are large exemptions for spousal bequests and substantial standard deductions for each heir, tabulations are reported by size of net

estates before computing all those deductions. As a result, our series report the economic value of net estates rather than the taxable portion of estates.

The estate series are produced using the standard Pareto interpolation method. We do not attempt to estimate shares of estates for each fractile because there is no simple way to compute the total level of estates left by all decedents in each year (including those who did not file estate tax returns). Table 5 displays the levels (expressed in thousands of 2002 Yen) of estates for various upper groups of the distribution.

There are a number of changes in the estate tax law that can potentially affect our series:

1) Pre-1947 Inheritance Law

From 1905 to up until 1947, the inheritance laws were defined by the old Civil Code. Under the old law, there was a distinction between succeeding a house (*ie*) as a house head (*koshu*), which includes both status and property of the house, and succeeding a property. The former is called "house inheritance (*katoku sozoku*)" and the latter is called "property inheritance (*isan sozoku*)".

House inheritance followed when house heads died, disappeared, retired after age 60, or if house heads were female and they got married. Retirement is the second largest reason next to death. Under this system, the first son inherited the house name and all the property. If there was no son, a house head could choose a legal successor. If there was no son and no legal successor has been chosen before the death of the house head, then the family members had to select a successor. In any case, under the house inheritance, entire property went to one person to preserve the house.

Property inheritance followed when non-house heads died, disappeared, or if non-house heads gave the legally-certified amount of property to their heirs. Gift is the second largest reason next to death. Under this system, children divided the property equally. If there were no children, then a spouse inherited all the property. If there were no children or spouse, then elderly family members divided the property equally.

The inheritance tax data from 1905 to 1948 record both forms of inheritance in separate tabulations. For our estimation, we add the distributions of house inheritance and property inheritance. The former is by far the dominant form of inheritance at the top. We consider all forms of house inheritance (not only those from deaths), because house inheritance due to retirement should be considered as a transmission of wealth from one generation to the next and not counting it would lead us to underestimate the number of estates which were transmitted to the next generation. We also include all property inheritance cases (although ignoring the cases not due to death would not alter our series very much).

2) Post-1947 Inheritance Law

After 1947, Japan switched to a modern form of inheritance law. For years 1950 to 1957, under the recommendations of the Shoup Commission, Japan adopted an inheritance tax system (instead of an estate tax system). As a result, the tax statistics for those years are reported by size of inheritances, and not estates. As estates are typically divided between several heirs, those distributions are not directly comparable to the estate distributions. That is why, we have dropped those years from the analysis although we plan to include them (with an adjustment) in future revision (TO BE DONE).

Since 1958, Japan has used a hybrid system of an estate tax and inheritance tax. However, the statistics have always been presented by size of estates and hence are comparable to the pre-1947 statistics.

B2. Construction of Estate Composition Series

Estate tax statistics report the composition of estates starting in 1926. [TO BE COMPLETED.]

C. Top Wage Income Shares

C1. Period 1951-2002

The National Tax Administration has annually published the statistics on wages and salaries in the *Survey on Private Wages and Salaries* beginning in 1951.[33] This survey covers all regular employees in the private sector, but excludes temporary and daily workers, retirees, and government employees. The survey provides distributions of individual annual wage income by brackets that can be exploited to construct homogeneous top wage income share series from 1951 to 2002. Our definition of wage income includes wages, salaries, overtime pay, bonuses, and various allowances, but excludes benefits in kind and retirement benefits. We again adopt a simple Pareto Interpolation technique to estimate top wage income shares from those statistics. In the case of our wage income series, the upper groups are defined relative to the total number of regular employees in the private sector in Japan (see Tables 4 and 5). Total regular employees from 1948-2002 are from Historical statistics of Japan Table 19-7 http://www.stat.go.jp/english/data/chouki/19.htm.
We obtain shares by dividing the amounts of wages and salaries accruing to top wage income groups by 90% total wages and salaries from National Accounts (see Table 6).
Total wages and salaries from National Accounts are defined as wages and salaries including employees' social security contributions but excluding employers' social security contributions as employers' contributions are not included in the survey. The factor 90% is chosen because our statistics exclude non-regular employees and government employees. For most recent years, where the coverage of the survey is almost complete for regular employees in the private sector, total wage reported in the survey are very close to 90% of wages and salaries from National Accounts.

C2. Pre World War II period

1) Salary and bonuses reported on comprehensive income tax returns

For the pre-WWII period, we first use the data on salaries and bonuses reported in the composition tables in the annual income tax statistics for the years 1929-44 (fiscal years 1930 to 1945). These data include the amounts of salaries and bonuses earned by the people who filed income tax returns and the numbers of taxpayers for each category.

[33] Some records indicate that the survey started in 1948, but we cannot locate the 1948-50 surveys.

For the pre-WWII period, we use as denominator the full wages and salaries (excluding employers' contributions) from the old SNA for the period 1930 to 1944. For 1929, we extrapolate total wages and salaries assuming that the fraction of wages and salaries in total personal income is the same as in 1930. We estimate the total number of regular employees as follows. The total number of employees are reported in the Historical Statistics of Japan, Volume 1, Table 3-6 for years 1930, 1940, and 1947. For 1930, employees and family workers are not reported separately and we therefore assume that the fraction of employees among all employees plus family workers is the same as in 1940. We then obtain the number of employees for each year doing a linear interpolation between years 1930, 1940, and 1947. Finally, we estimate the number of regular employees assuming the fraction of regular employees among all employees is the same as in 1953, the first year this statistic is reported.

Bonus and salary amounts are reported in tax statistics for 1920-1929 as well but the income tax statistics do not report the number of salary earners and bonus earners. Furthermore, there are no estimates of total wages and salaries in the economy. Therefore, we do not try to estimate top wage shares before 1929.

We adjust wages and salaries and bonuses reported on tax returns to obtain total wages and salaries and bonuses paid to individuals filing income taxes. From fiscal years 1930 to 1939, the earned income credit allowed taxpayers to deduct 20% of wage and salary earnings for those with total income under 6,000 Yen and 10% for those with total income between 6,000 and 12,000 Yen. We therefore assume that the average wage and salary deduction was 15% and inflate reported wages and salaries by a factor 1/0.85. From fiscal years 1940 to 1945, the earned income credit is 10% of wages and salaries for those with total income below 10,000 Yen. We then assume that 8% of wages and salaries could be deducted on average and inflate reported wages and salaries by a factor 1/0.92. As we explained in appendix A, bonuses have the same treatment as dividend income. From fiscal year 1930 to 1936, 60% of bonuses are reported on tax returns and we therefore inflate bonuses by a factor 1/0.6. From fiscal year 1937 to 1939, 80% of bonuses are reported and we therefore inflate bonuses by a factor 1/0.8. From 1940 to 1945, 100% of bonuses are reported and we make no adjustment.

The number of bonus earners in tax statistics is always smaller than the number of wage and salary earners. We assume that all bonus earners also have some wage and salary earnings so that we can attribute all bonuses to all the taxpayers reporting positive wages and salaries. Finally, we assume that those reporting wages and bonuses on income tax returns represent the top wage income earners. In practice, individuals with large non wage income and modest wage income also have to file a tax return so this assumption is not exactly right and will lead us to under-estimate top wage shares in the pre-war period.

The aggregate statistics therefore allow us to compute the share of total wage income accruing to tax filers with positive wage income. From year 1929 to 1944, on average about 3% of regular employees file income tax returns. This number varies over the years and drops from a maximum of 6.72% to 0.76% from year 1938 to 1939 (fiscal years 1939 and 1940 respectively) due a large increase in the exemption level. We need to make an additional interpolation to obtain the share of wage income going to fixed fractions of the distribution of wage earners such as the top 5% and the top 1%. To do so, we assume that the distribution of top wage incomes is Pareto. In order to estimate the coefficient of Pareto we would need at least two observations on (share of income, fraction of employees). We have only one such observation per year but we can exploit

the fact that the fraction of filers dropped sharply from fiscal year 1938 to 1939. If we assume that the distribution of wage income did not change significantly from 1938 to 1939 and the Pareto coefficient remained stable from 1938 to 1939, we can obtain the Pareto coefficient *a* using the standard formula: (1-1/a)=(log(share of wage income in 1938)-log(share of wage income in 1939))/(log(fraction of wage filers in 1938)-log(fraction of wage filers in 1939)). The corresponding coefficient we obtain is a=2.76. Using the coefficient, we can obtain the top 1% and top 5% income share for each year, which we report in Table 6. Because we use 1938 and 1939 to estimate the Pareto parameter, by definition top wage income shares in 1938 and 1939 estimated using this methodology will be identical. Therefore, we exclude 1938 estimates from Table 6.

Although the Pareto assumption (and especially the assumption that the coefficient is constant across years) might not be fully accurate, this is no doubt in the data that there is a large drop in wage income concentration: in the early 1930s, about 2 to 3% of wage earners filed income tax returns, and they reported over 15% of all wages and salaries from National Accounts. In contrast, in 1944, almost 5% of wage earners filed income tax returns but they reported only about 9% of all wages and salaries.

2) Pre-war wage surveys

It is also possible to use prewar wage surveys to obtain alternative estimates of pre-war income concentration. The distribution of wage income is available only in 1924, 1927, and 1933, in the *Report of Census of Labor* published by the Statistical Bureau. Those surveys ask employees to report their monthly cash wages that included monthly wages, salaries, and allowances, but exclude bonuses. The surveys publish tabulations of the distribution of employees by the size of monthly cash wages. We estimate top wage income shares based on the total number of workers and the total amount of wages reported in these survey. The prewar wage surveys cover employees in manufacturing and mining only. These surveys are in general designed to be representative of all employees in those industrial sectors. Therefore, we define the top 5% and top 1% group based on the total number of workers in the survey. We also define the total wage denominator as the sum of all wages reported in the survey. Because the monthly wage survey data do not include bonuses, and bonuses were especially important at the top in the pre-war period, we must correct for the omission. Therefore, we assume that 100% of bonuses reported on income tax returns (after adjustment for bonus tax exemptions) go to the top 5% workers, and that 75% of bonuses go the top 1%. Therefore, we adjust the raw estimations from the pre-war survey by adding the fraction of all bonuses (100% for the top 5% and 75% for the top 1%) relative to total wages and salaries from National Accounts and dividing by one plus the fraction of all bonuses relative to total wages and salaries from National Accounts.[34] For 1933, we can estimate the top 5% or top 1% income share both from the pre-war survey and directly from the tax statistics. The estimates from the pre-war survey are actually very close to the tax statistics estimates suggesting that no major error is introduced from all those approximations.[35]

D. Income Tax Rates

[34] Because, there are no estimates of total wages from National accounts before 1930, we have assumed that total wage income represents 42% of total personal income in 1924 and 1927 (as this is the case in 1930, the first year such data is available).

[35] The top 5% wage income share from tax statistics is 23% and is 21.3% from the survey. The top 1% wage income share from tax statistics is 8.3% and is 8.4% from the survey.

The Japanese income tax structure has gone through many reforms over the course of the period we study. The *Hundred-Year History of Income Tax* provides a comprehensive description of the development and evolution of the income tax in Japan for the period 1887-1987. The annual report also provides some information on the tax system.

Marginal tax rates reported in Table 4 have been computed as follows. We consider each of the raw income thresholds P99.9 and P99.99, etc. estimated from the interpolation methods described in Appendix Section B. We then assume that the taxpayer at each of these income thresholds is a married taxpayer (who can claim the married exemption level) with two dependents (for example a married couple with two children under 18). We therefore subtract from raw income the married exemption and two dependent exemptions. We also subtract the average level of deductions claimed on top of marital and personal exemptions at the corresponding percentiles to obtain net taxable income.[36] Tax liability is then obtained from taxable income from a standard tax schedule with increasing marginal tax rates by income brackets, from which the marginal tax rate for any taxable income level can be easily obtained. The marginal tax rate we report includes the standard deductions for earned income, etc.

We have estimated the (income weighted) marginal tax rate for the top 0.1% and top 0.01% groups in Japan in Table 2 as follows. (TO BE COMPLETED)

[36] For years 1920 to 1928, no additional deductions were allowed. For 1929 to 1945, we have assumed that deductions amounted to 2% of gross income at all percentiles (which is true on average for year 1946, the first year these details are available). From 1946 to 2000, the level of deductions increases slightly over time and we have made approximate computations for each year and percentile threshold using the available tables from *Taxation Statistics.*

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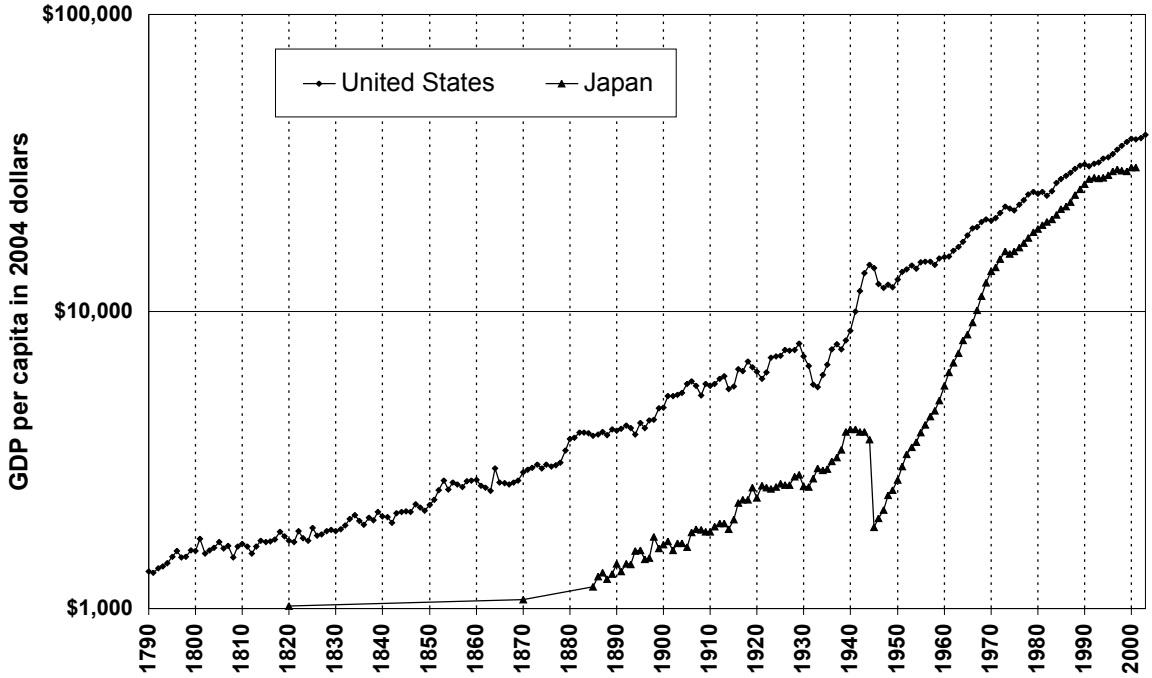

FIGURE A
Historical real GDP per capita growth in Japan and the U.S.

Source: United States is Louis Johnston and Samuel H. Williamson (2004) compilation of previous historical estimates and National Accounts. Japan is Maddison series up to 1994 and National Accounts since 1994.

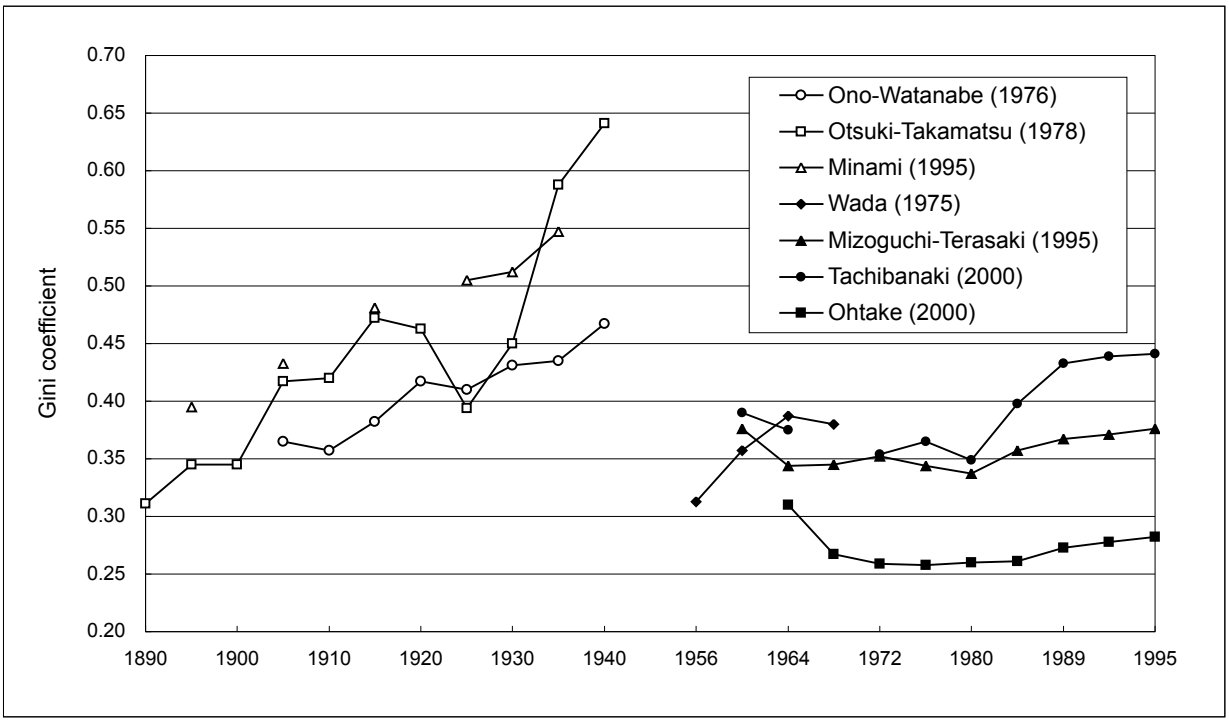

FIGURE B
The Evolution of Income Inequality in Japan, 1890-1995

Source: Ono and Watanabe (1976), Table 6; Otsuki and Takamatsu (1978), Table 4; Minami (1995), Table 6-4, Series I' & II; Wada (1975), p.21; Mizoguchi and Terasaki (1995), Table 1, supplemented by Mizoguchi and Takayama (1984), Table 1-2, and Funaoka (2001), Table 6; Tachbanaki (199 8), Table 3-1, supplemented by Tachibanaki (2000), p.45; Ohtake (2000), Table 1.
Note: Gini coefficient is for the estimated distribution of income before tax and government transfers in all Japanese households.

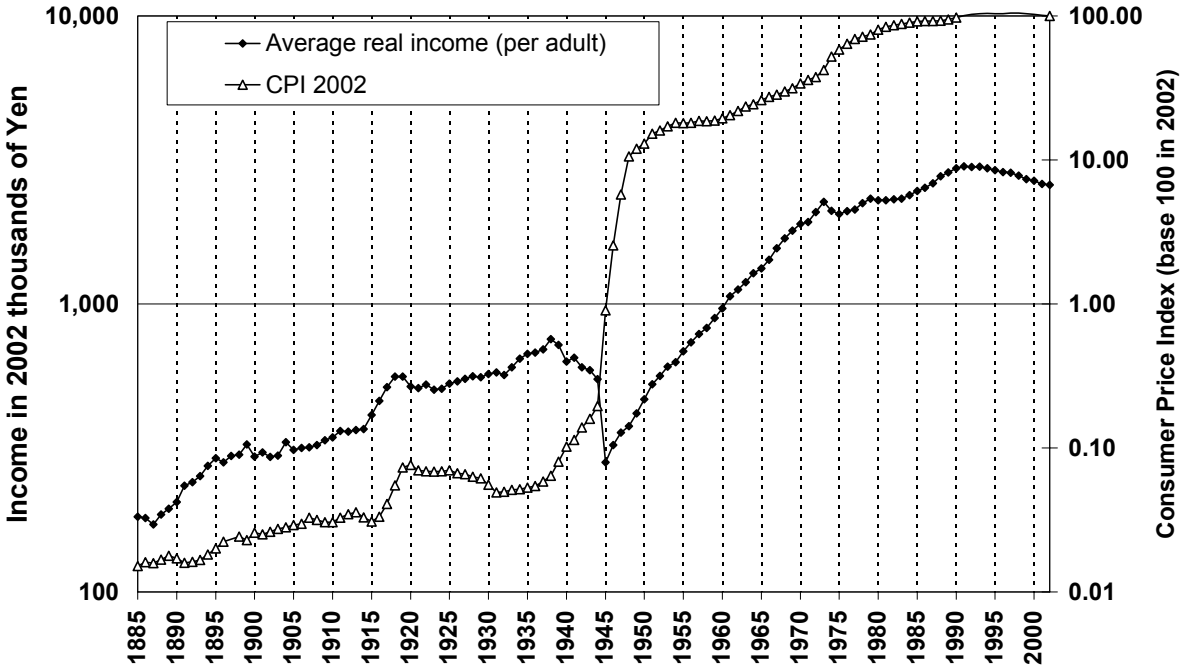

FIGURE 1

Average Real Income and Consumer Price Index in Japan, 1885-2002

Source: Table 1, columns Average real income per adult (in real 2002 thousand of Yen) and CPI (base 100 in 2002)
Average real incomes multiplied by about 15 from 1885 to 2000. More growth than in the US from 1800 to 2000.

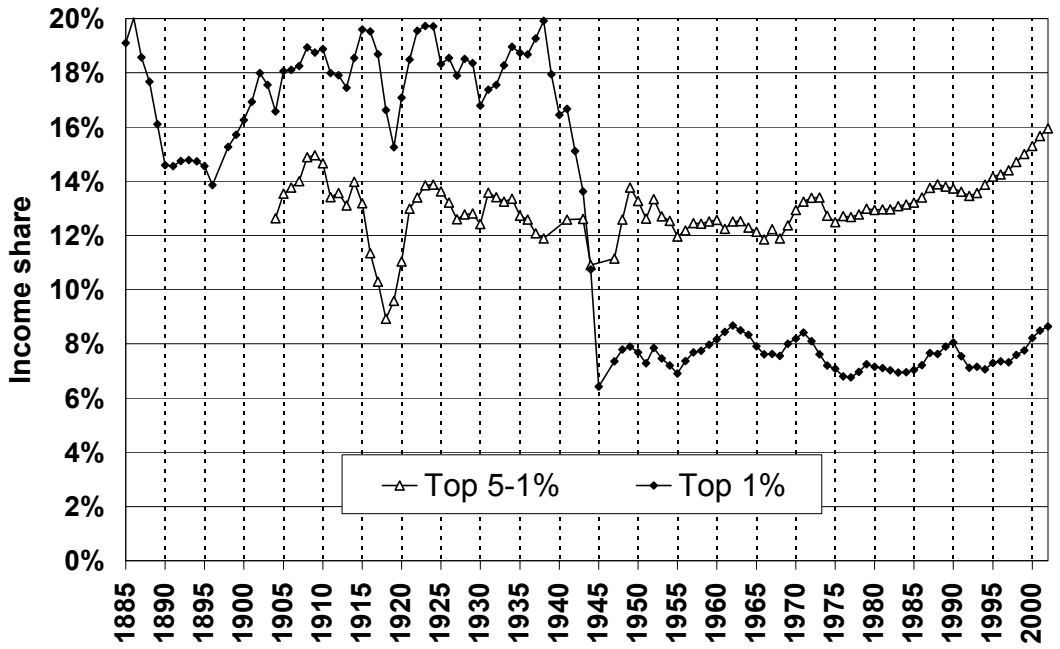

FIGURE 2

Top 5-1%, 1% Income Share in Japan, 1885-2002

Source: Table 3, columns top 1% and top 5-1%

Reason why top 5-1% increases from 1968 to 1976 while top 5-1% wage income share is stable is due to the fact that fraction of wages in denominator increase from 57% to 76% in that period (stable before and stable afterwards)

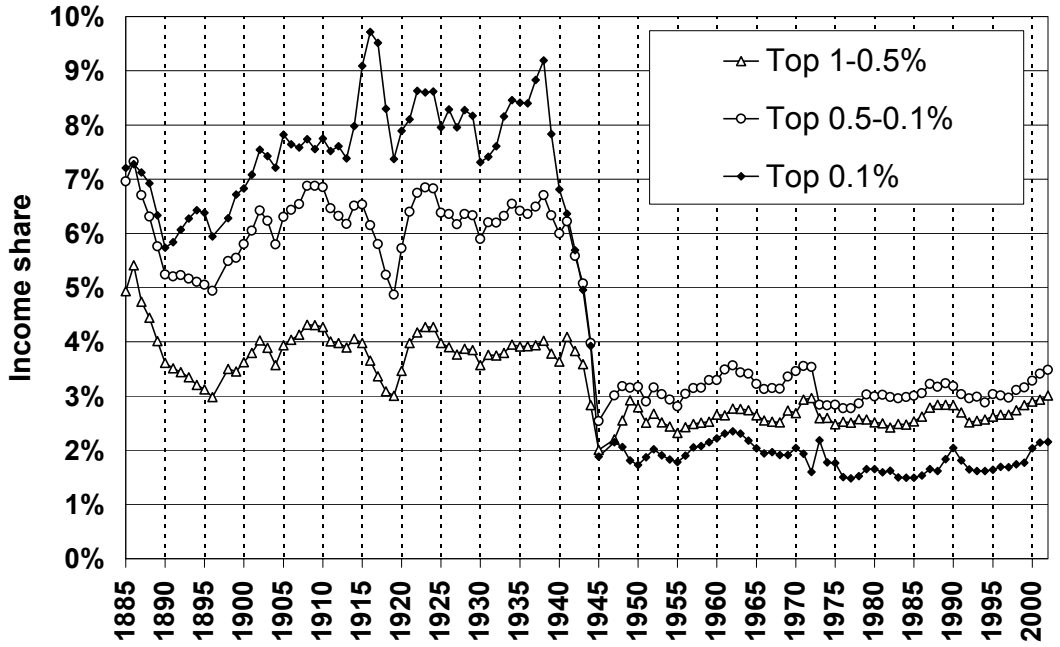

FIGURE 3

Top 1-0.5%, 0.5-0.1%, and 0.1% Income Share in Japan, 1885-2002

Source: Table 3

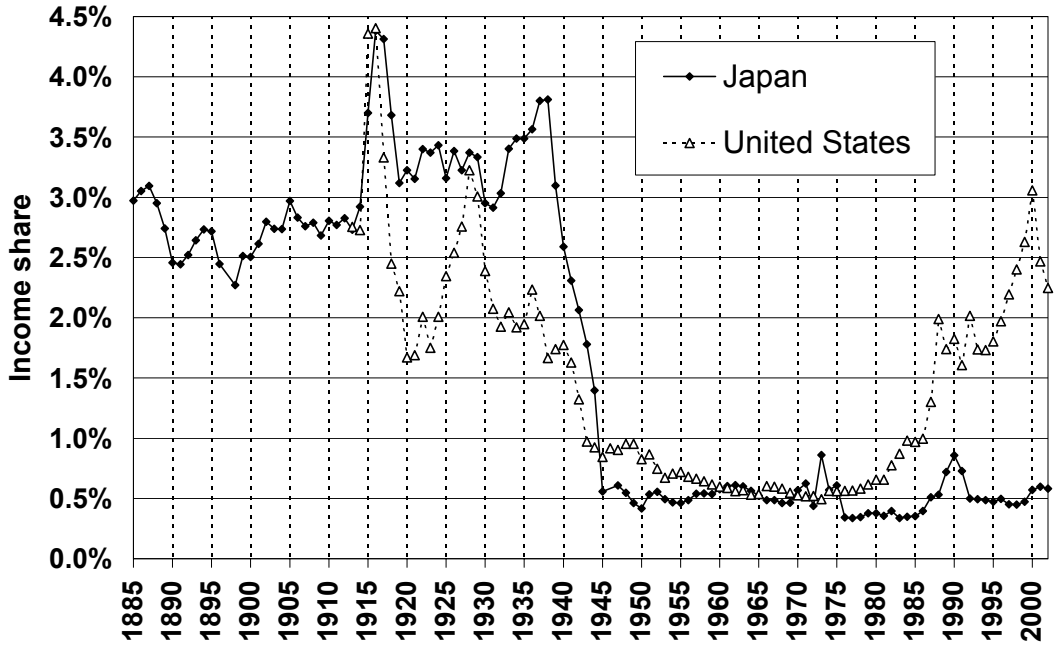

FIGURE 4

Top 0.01% Income Share in Japan (and the United States), 1885-2002

Source: Japan, Table 3, column top 0.01%
United States, Piketty and Saez (2003), Table II, column P99.99-100, series updated to 2002.

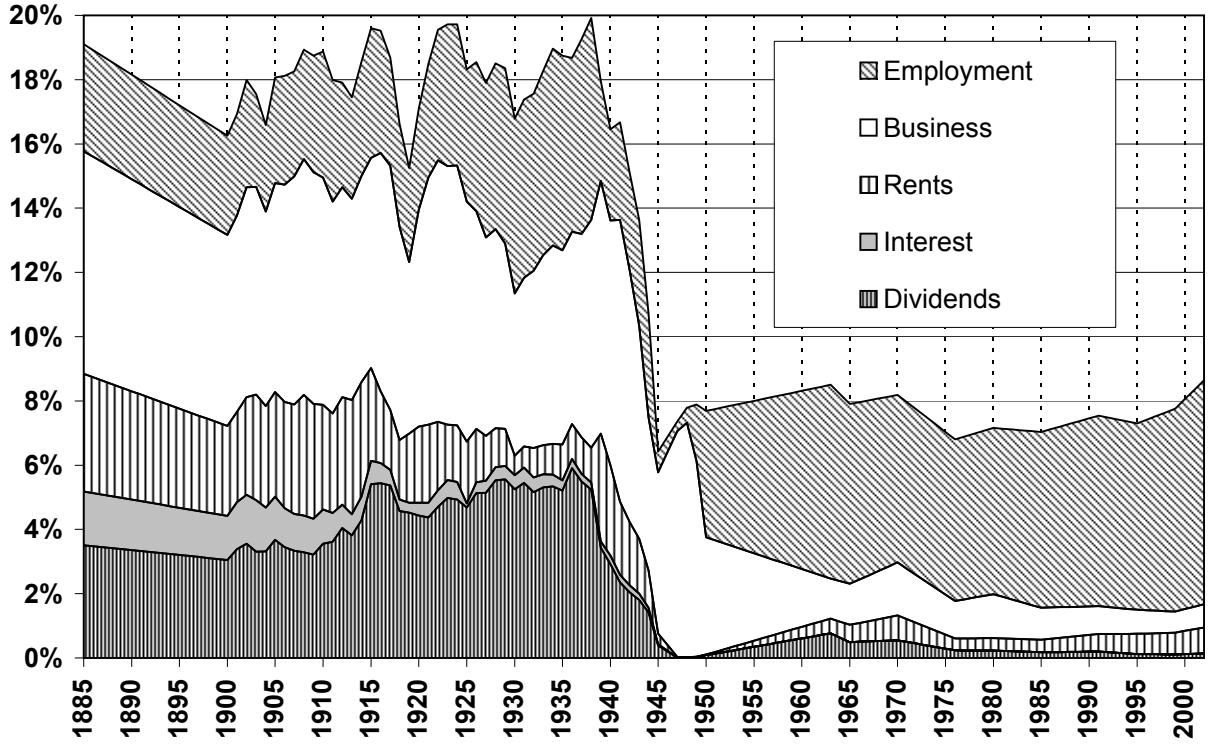

FIGURE 5

Income Composition of Top 1% in Japan, 1885-2002

Source: Japan, Table 4

The Figure displays the composition of those top incomes into Capital Income (Dividends, and interest, non land rents), Land Rental income, Business Income (unincorporated business profits, farming income, self-employment income), and Employment income (Wages and Salaries, Pensions).

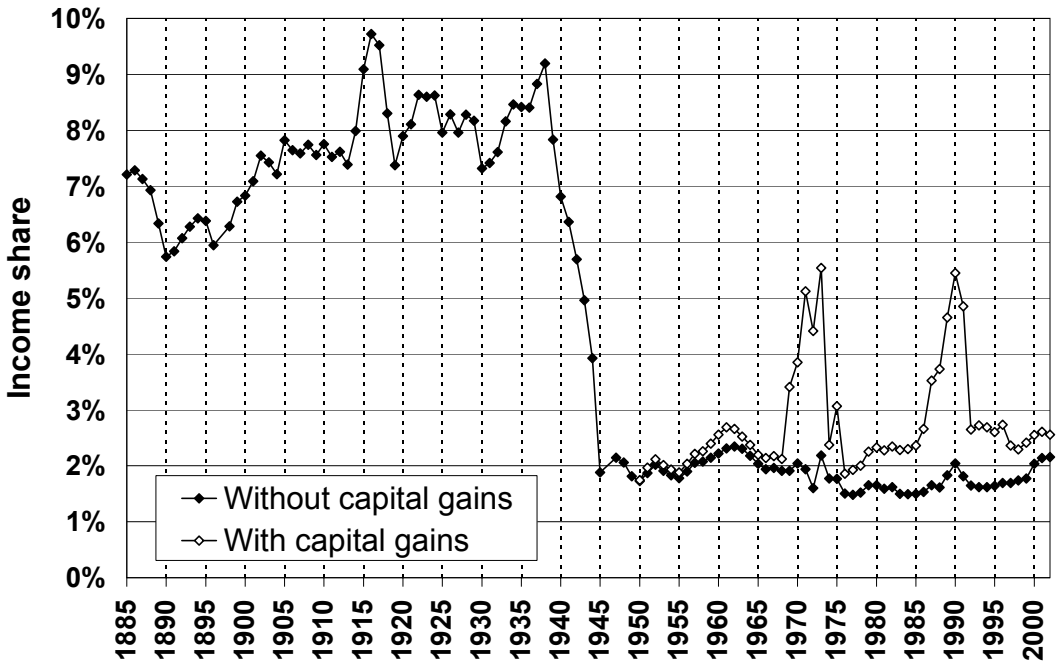

FIGURE 6

Top 0.1% Income Share in Japan excluding and including capital gains

Source: Japan, Table 3, column top 0.1%

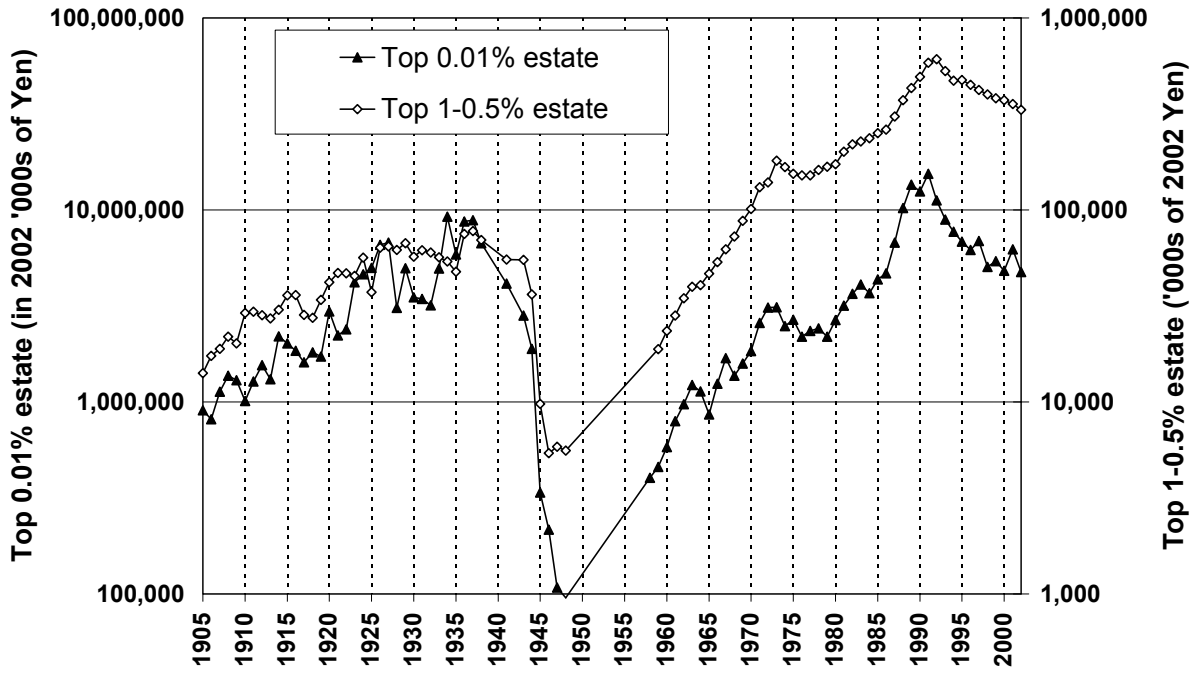

FIGURE 7

Average top 0.01% estates and top 1-0.5% estates in Japan, 1905-2002

Source: Table 4

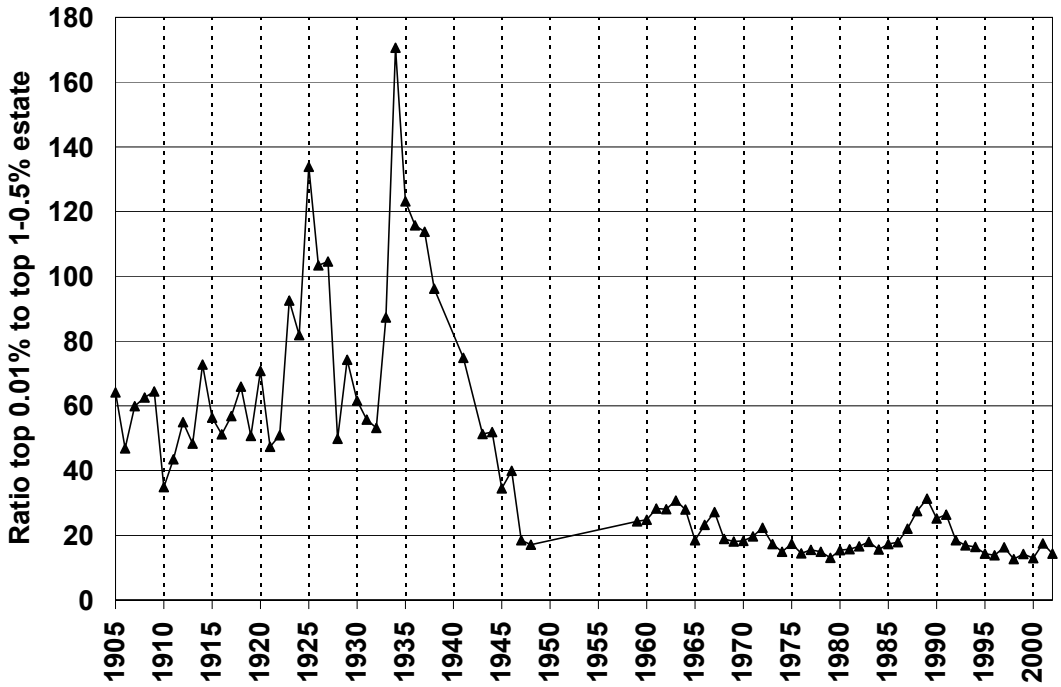

FIGURE 8

Top 0.01% to Top 1-0.5% Estates ratio in Japan, 1904-2002

Source: Table 5, column top 0.01% divided by column top 1-0.5%

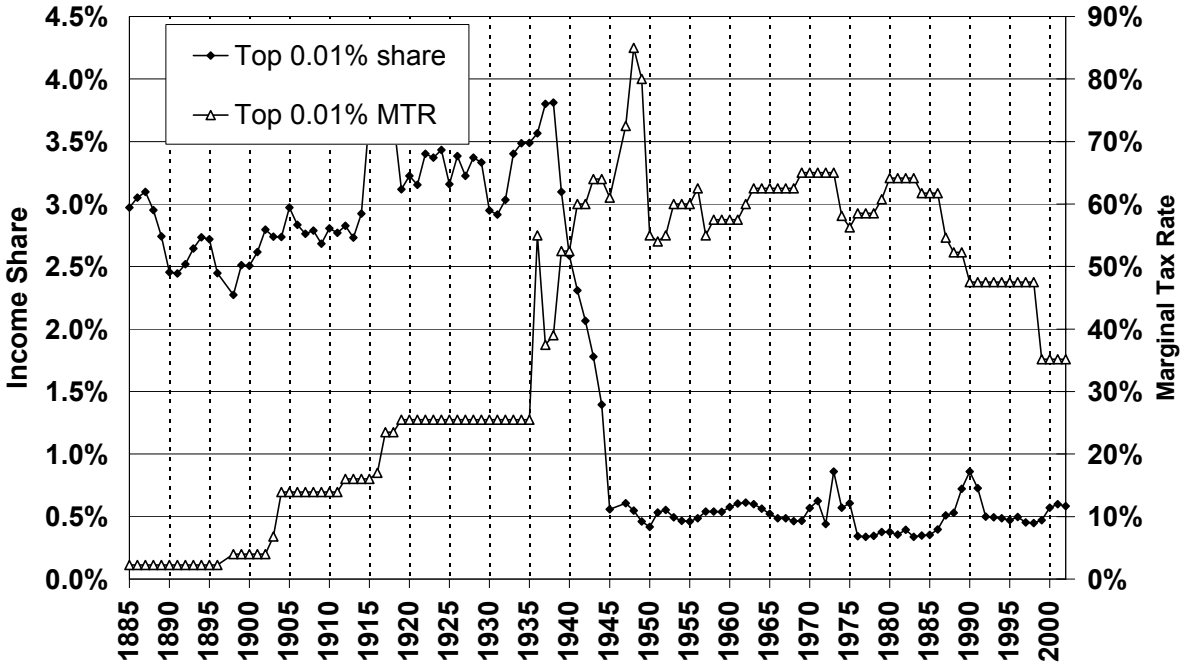

FIGURE 9

Top 0.01% income share and marginal tax rate, 1885-2002

Source: Top 0.01% income share from Table 3.
Marginal tax rate for Top 0.01% from Table 2.
Marginal tax rate includes only national income tax (and excludes local income taxes).

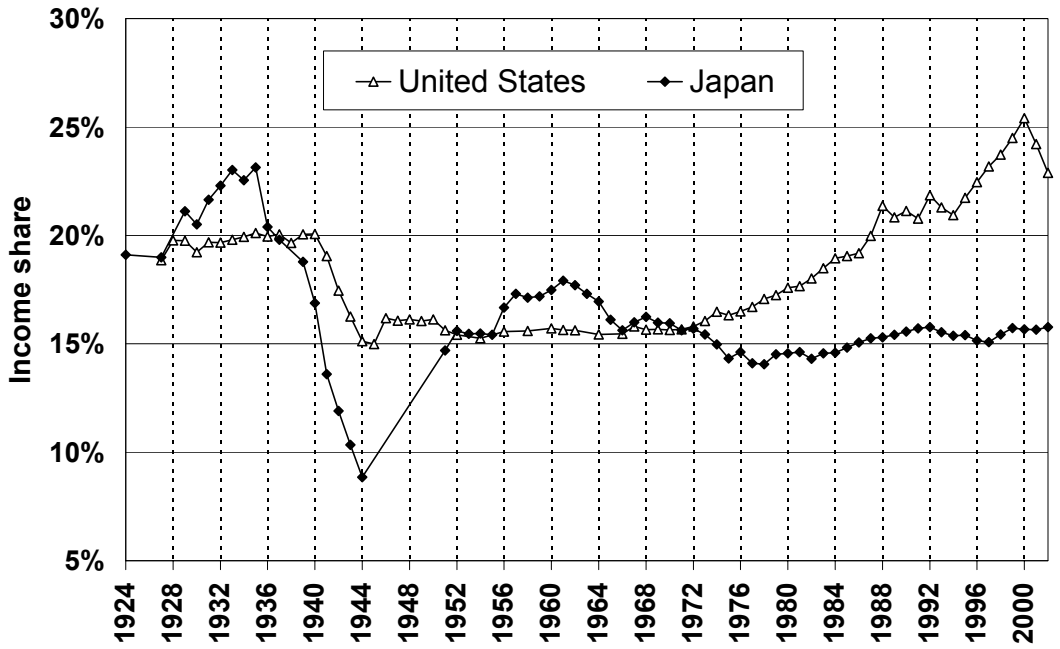

FIGURE 10

Top 5% Wage Income Share in Japan (and the United States), 1924-2002

Source: Japan, Table 5, column top 5% and authors' computations based on salaries and bonuses reported in tax returns
United States, Piketty and Saez (2003), Table IV, column P90-100, series updated to 2002

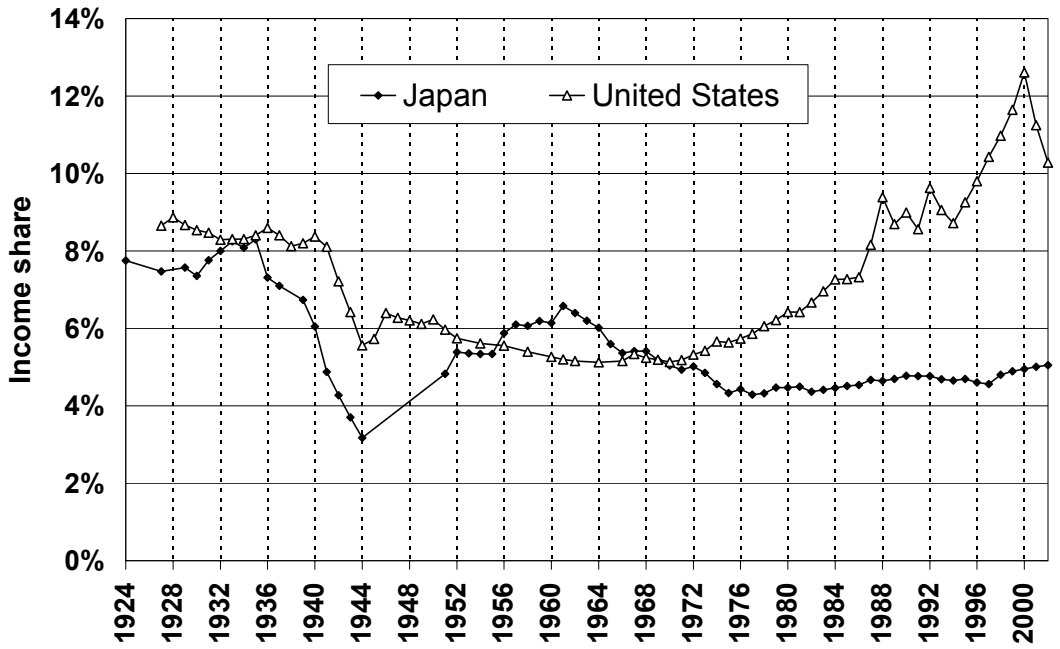

FIGURE 11

Top 1% Wage Income Share in Japan (and the United States), 1951-2002

Source: Japan, Table 5, column top 1%
United States, Piketty and Saez (2003), Table IV, column P99-100, series updated to 2001

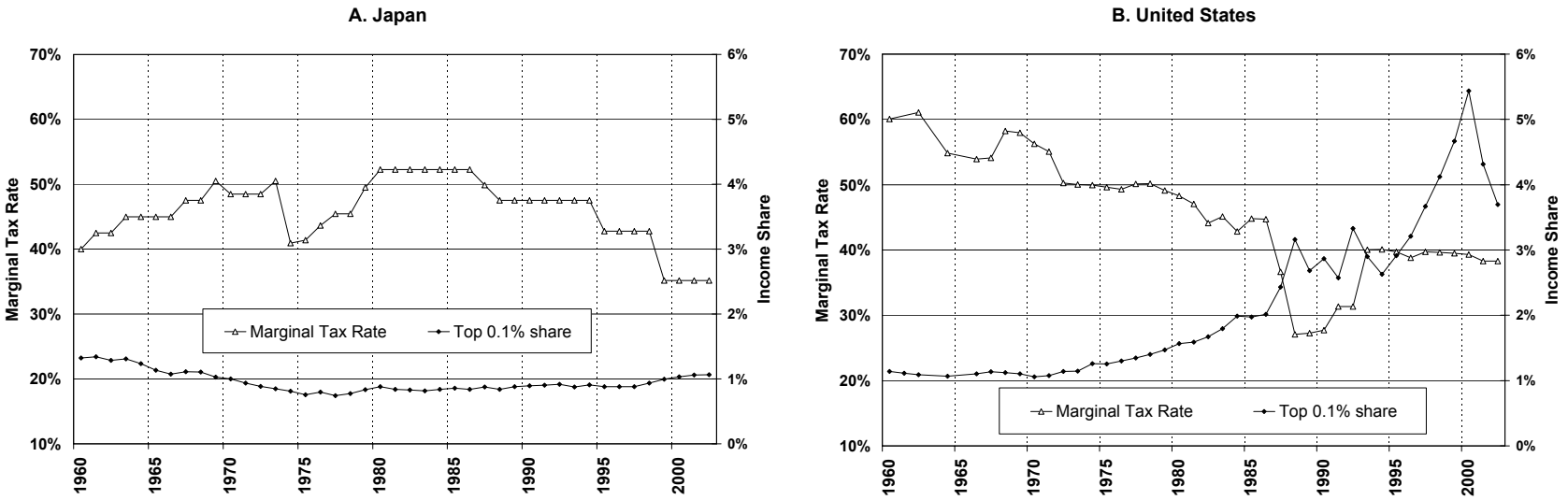

FIGURE 12

Marginal Tax Rates and Top 0.1% Wage Income Share in Japan and the United States, 1960-2002

Source: Japan marginal tax rate computations based on Table 7
Marginal tax rates in Japan exclude local income taxes and social insurance contributions.
Computed for the average wage earner in the top 0.1% with only wage income, a non-working spouse and two children
United States, Saez (2004) computations using micro tax return data and TAXSIM calculator (does not include state income taxes).

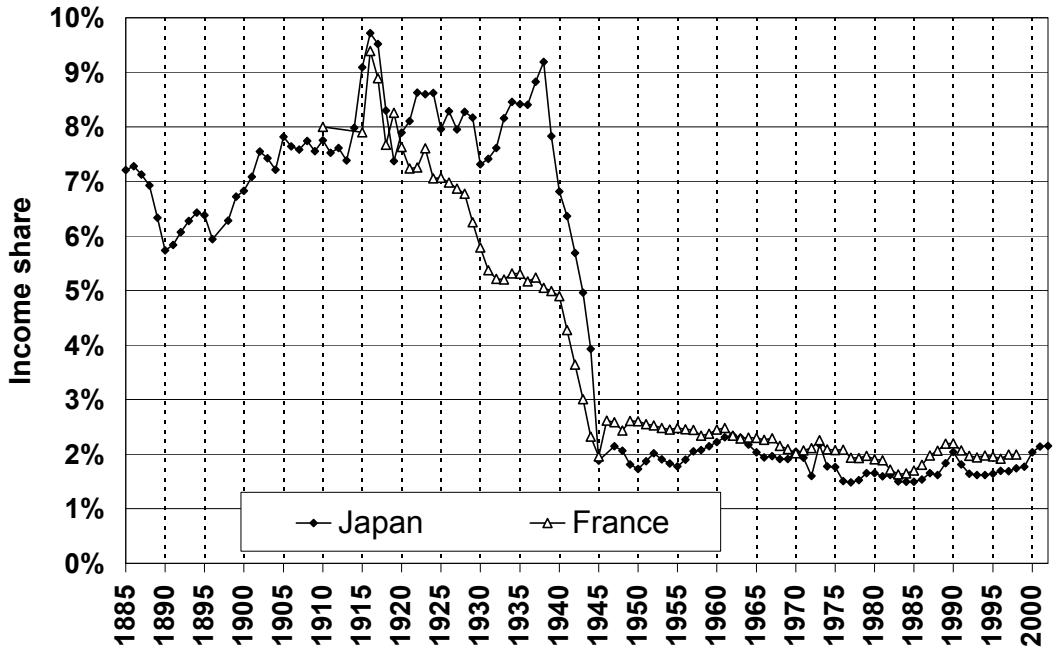

FIGURE 13
Top 0.1% Income Share in Japan and France, 1885-2002

Source: Japan, Table 3, column top 0.1%
France, Piketty (2003)

Income Inequality in OECD Countries: Gini Coefficients

Table A

Country	Year	Income before Tax & Transfers
Ireland	1987	0.461
Sweden	1987	0.439
U.K.	1986	0.428
France	1984	0.417
U.S.	1986	0.411
Switzerland	1982	0.407
Germany	1984	0.395
Finland	1987	0.379
Canada	1987	0.374
Italy	1986	0.361
Netherlands	1987	0.348
Japan	1989	0.317
Belgium	1988	0.273

Source: Nishizaki et al. (1998)

Table B

Country	Year	Income after Tax & Transfers
U.S.	1986	0.347
Switzerland	1982	0.346
Ireland	1987	0.341
U.K.	1986	0.323
Italy	1986	0.321
France	1984	0.311
Canada	1987	0.305
Japan	1985	0.298
Sweden	1987	0.281
Germany	1984	0.277
Netherlands	1987	0.266
Belgium	1988	0.260
Finland	1987	0.255

Source: Kokumin Seikatsukyoku (1999), Chapter 3; Atkinson et al. (1996), Table 4-10.

TABLE 0
Thresholds and Average Incomes in Top Income Groups in 2002

Percentile threshold (1)	Income threshold (2)	Income Groups (3)	Number of tax units (4)	Average income in each group (5)
		Full Population	102,139,153	$20,152
Top 10%	$50,748	Top 10-5%	5,106,958	$57,666
Top 5%	$65,672	Top 5-1%	4,085,566	$80,346
Top 1%	$109,649	Top 1-0.5%	510,696	$121,291
Top .5%	$137,412	Top 0.5-0.1%	408,557	$175,391
Top .1%	$264,372	Top 0.1-0.01%	91,925	$352,165
Top .01%	$648,543	Top 0.01%	10,214	$1,174,672

Notes: Sources is Table 1 and Table 2, row 2002. Computations based on income tax return statistics.
Income defined as annual gross income reported on tax returns excluding capital gains
and before individual income taxes and
employees' payroll taxes. Amounts are expressed in 2002 dollars assuming an exchange rate of $1= 125 Yen.
Column (2) reports the income thresholds corresponding to each of the percentiles in column (1). For example,
an annual income of at least $50,748 is required to belong to the top 10% tax units, etc.

TABLE C

Comparing top incomes from tax statistics and the family expenditure and income survey in 1999

Income Groups	Average income ('000 nominal Yen)	Fraction Net interest income	Fraction Dividend income	Fraction Returns on life insurance policies	Fraction all returns on liquid assets
(1)	(2)	(3)	(4)	(5)	(6)=(3)+(4)+(5)
A. Average in Total Personal Income Denominator from National Accounts					
All	2,805	1.9%	0.9%	4.3%	7.1%
B. Income Tax Statistics Estimates					
Top 10-5%	7,530	0.0%	0.0%	0.0%	0.0%
Top 5-1%	10,601	0.0%	0.1%	0.0%	0.1%
Top 1-0.5%	16,276	0.0%	0.3%	0.0%	0.3%
Top 0.5%	32,754	0.0%	2.1%	0.0%	2.1%
Top 0.1%	67,662	0.0%	4.2%	0.0%	4.2%
C. Family Expenditure and Income Survey Estimates					
Top 10-5%	7,781	-0.4%	0.9%	5.2%	5.7%
Top 5-1%	10,381	0.5%	1.3%	4.6%	6.3%
Top 1-0.5%	14,391	1.9%	2.2%	4.5%	8.6%
Top 0.5%	22,958	1.3%	2.3%	3.8%	7.3%

Notes: Panel B, computations based on income tax return statistics for year 1999.

Income defined as annual gross income reported on tax returns excluding capital gains.

Interest income and returns on life insurance policies are not taxable under the progressive income tax.

Wage income earners with dividend income less than 200,000 Yen do not have to file income tax returns.

Panel C, computations based on the Family Expenditure and Income Survey, 1999.

Net interest income based on the sum of time deposits, bonds, loan trust less all liabilities.

Dividend income based on stocks. Returns on life insurance policy based on life insurance holdings.

Table 1: Reference Totals for Population, Income, and Inflation, 1885-2002

Years			Population and Tax units				Income		Inflation
(1) Actual Year (incomes earned in)	(2a) Fiscal Year (tax paid in)	(2b) Fiscal Year (Japanese Calendar)	(3) Population ('000s)	(4) Number of adults (20+) ('000s)	(5) Number of tax returns ('000s)	(6) (5)/(4) (%)	(7) Total income (2002 billion Yen)	(8) Average income (2002 '000 yen)	(9) CPI (2002 base 100)
1884-6	1887	20	38,541	21,853	118.6	0.54	3,733	171	0.0151
1885-7	1888	21	38,703	21,908	139.5	0.64	3,521	161	0.0161
1886-8	1889	22	39,029	22,054	115.6	0.52	3,679	167	0.0158
1887-9	1890	23	39,473	22,267	115.4	0.52	3,713	167	0.0168
1888-90	1891	24	39,902	22,471	115.9	0.52	3,868	172	0.0179
1889-91	1892	25	40,251	22,629	117.1	0.52	4,508	199	0.0171
1890-2	1893	26	40,508	22,734	124.1	0.55	5,127	226	0.0160
1891-3	1894	27	40,860	22,892	129.3	0.56	5,283	231	0.0161
1892-4	1895	28	41,142	23,011	134.7	0.59	5,398	235	0.0167
1893-5	1896	29	41,557	23,203	151.7	0.65	5,555	239	0.0182
1894-6	1897	30	41,992	23,405	172.8	0.74	5,660	242	0.0201
1895-7	1898	31	42,400	23,623	195.3	0.83	5,808	246	0.0224
1898	1899	32	42,886	23,884	288.6	1.21	6,006	251	0.0243
1899	1900	33	43,404	24,162	349.5	1.45	7,422	307	0.0229
1900	1901	34	43,847	24,399	406.3	1.67	6,794	278	0.0257
1901	1902	35	44,359	24,674	457.9	1.86	7,103	288	0.0251
1902	1903	36	44,964	25,000	507.9	2.03	6,947	278	0.0261
1903	1904	37	45,546	25,313	543.0	2.15	7,107	281	0.0274
1904	1905	38	46,135	25,630	580.5	2.27	8,016	313	0.0281
1905	1906	39	46,620	25,889	638.4	2.47	7,614	294	0.0291
1906	1907	40	47,038	26,110	702.4	2.69	7,802	299	0.0297
1907	1908	41	47,416	26,234	860.0	3.28	7,867	300	0.0328
1908	1909	42	47,965	26,452	930.4	3.52	8,074	305	0.0317
1909	1910	43	48,554	26,689	947.6	3.55	8,476	318	0.0305
1910	1911	44	49,184	26,947	964.5	3.58	8,748	325	0.0305
1911	1912	1	49,852	27,223	1,013.5	3.72	9,310	342	0.0328
1912	1913	2	50,577	27,528	707.9	2.57	9,357	340	0.0346
1913	1914	3	51,305	27,832	727.1	2.61	9,592	345	0.0357
1914	1915	4	52,039	28,137	718.2	2.55	9,758	347	0.0329
1915	1916	5	52,752	28,427	712.6	2.51	11,052	389	0.0308
1916	1917	6	53,496	28,732	771.0	2.68	12,501	435	0.0332
1917	1918	7	54,134	29,046	779.5	2.68	14,106	486	0.0408
1918	1919	8	54,739	29,341	1,079.8	3.68	15,501	528	0.0549
1919	1920	9	55,033	29,469	994.2	3.37	15,550	528	0.0730
1920	1921	10	55,963	29,937	1,168.2	3.90	14,594	487	0.0764
1921	1922	11	56,666	30,283	1,280.9	4.23	14,600	482	0.0700
1922	1923	12	57,390	30,639	1,400.5	4.57	15,178	495	0.0690
1923	1924	13	58,119	30,997	1,389.9	4.48	14,736	475	0.0683
1924	1925	14	58,876	31,369	1,432.3	4.57	15,044	480	0.0689
1925	1926	1	59,737	31,796	804.4	2.53	15,872	499	0.0698
1926	1927	2	60,741	32,298	732.2	2.27	16,403	508	0.0666
1927	1928	3	61,659	32,805	693.8	2.11	17,004	518	0.0656
1928	1929	4	62,595	33,323	700.5	2.10	17,640	529	0.0631
1929	1930	5	63,461	33,803	677.9	2.01	17,737	525	0.0617
1930	1931	6	64,450	34,350	569.0	1.66	18,505	539	0.0554
1931	1932	7	65,457	34,907	528.2	1.51	18,588	533	0.0490
1932	1933	8	66,434	35,449	569.6	1.61	19,534	551	0.0496
1933	1934	9	67,432	36,002	629.7	1.75	20,434	568	0.0511
1934	1935	10	68,309	36,491	679.3	1.86	20,898	573	0.0518
1935	1936	11	69,254	37,018	740.7	2.00	22,580	610	0.0531
1936	1937	12	70,114	37,499	815.2	2.17	23,722	633	0.0543
1937	1938	13	70,630	37,646	1,226.6	3.26	24,962	663	0.0585
1938	1939	14	71,013	37,921	1,404.0	3.70	25,646	676	0.0641
1939	1940	15	71,380	38,260	219.2	0.57	26,540	694	0.0802
1940	1941	16	71,933	38,686	266.0	0.69	25,034	647	0.1021
1941	1942	17	72,218	38,879	726.3	1.87	25,703	661	0.1137
1942	1943	18	72,880	39,275	878.6	2.24	24,508	624	0.1387
1943	1944	19	73,903	39,867	1,053.9	2.64	24,259	608	0.1595
1944	1945	20	74,433	40,194	1,114.6	2.77	23,427	583	0.1960
1945	1946	21	72,147	38,999	343.3	0.88	11,713	300	0.9026
1946			75,750	40,988			13,255	323	2.56
1947	1947	22	78,101	42,303	7,290.9	17.23	15,986	378	5.76

1948	1948	23	80,002	43,377	7,399.8	17.06	17,467	403	10.58
1949	1949	24	81,773	44,382	7,609.9	17.15	20,063	452	11.93
1950	1950	25	84,115	45,700	4,318.1	9.45	22,065	483	12.99
1951	1951	26	84,541	46,410			24,853	536	15.19
1952	1952	27	85,808	47,591			26,446	556	16.03
1953	1953	28	86,981	48,734			28,885	593	17.08
1954	1954	29	88,239	49,938			30,137	603	18.12
1955	1955	30	90,077	51,488			33,545	652	18.02
1956	1956	31	90,172	52,053			36,977	710	18.12
1957	1957	32	90,928	53,004			39,694	749	18.65
1958	1958	33	91,767	54,012			42,095	779	18.54
1959	1959	34	92,641	55,051			46,773	850	18.75
1960	1960	35	94,302	56,572			52,292	924	19.49
1961	1961	36	94,287	57,255			59,791	1,044	20.43
1962	1962	37	95,181	58,496			63,838	1,091	21.90
1963	1963	38	96,156	59,801			68,886	1,152	23.47
1964	1964	39	97,182	61,153			76,764	1,255	24.41
1965	1965	40	99,209	63,156			81,472	1,290	25.98
1966	1966	41	99,036	63,773			87,954	1,379	27.34
1967	1967	42	100,196	65,256			96,852	1,484	28.39
1968	1968	43	101,331	66,739			109,011	1,633	29.96
1969	1969	44	102,536	68,285			119,546	1,751	31.53
1970	1970	45	104,665	70,471			129,768	1,841	33.94
1971	1971	46	106,100	71,661			138,988	1,940	35.93
1972	1972	47	107,595	72,898			154,441	2,119	37.61
1973	1973	48	109,104	74,150			174,040	2,347	42.01
1974	1974	49	110,573	75,382			175,373	2,326	52.28
1975	1975	50	111,940	76,550			178,345	2,330	58.46
1976	1976	51	113,094	77,578			182,870	2,357	64.01
1977	1977	52	114,165	78,554			183,911	2,341	69.14
1978	1978	53	115,190	79,502			190,195	2,392	71.66
1979	1979	54	116,155	80,413			197,947	2,462	74.28
1980	1980	55	117,060	81,286			199,280	2,452	80.25
1981	1981	56	117,902	82,375			201,987	2,452	84.12
1982	1982	57	118,728	83,459			206,147	2,470	86.43
1983	1983	58	119,536	84,537			211,201	2,498	88.00
1984	1984	59	120,305	85,595			216,423	2,528	89.99
1985	1985	60	121,049	86,641			222,426	2,567	91.77
1986	1986	61	121,660	87,598			228,851	2,613	92.19
1987	1987	62	122,239	88,536			233,389	2,636	91.98
1988	1988	63	122,745	89,427			243,536	2,723	92.40
1989	1989	1	123,204	90,288			255,023	2,825	94.60
1990	1990	2	123,611	91,114			267,838	2,940	97.53
1991	1991	3	124,101	92,200			279,382	3,030	100.68
1992	1992	4	124,567	93,273			283,116	3,035	102.35
1993	1993	5	124,938	94,281			280,026	2,970	103.51
1994	1994	6	125,265	95,259			280,972	2,950	104.03
1995	1995	7	125,570	96,224			278,334	2,893	103.71
1996	1996	8	125,864	97,185			280,772	2,889	103.71
1997	1997	9	126,166	98,155			280,338	2,856	104.65
1998	1998	10	126,486	99,142			274,392	2,768	104.54
1999	1999	11	126,686	100,039			270,310	2,702	103.82
2000	2000	12	126,926	100,970			269,971	2,674	102.47
2001	2001	13	127,291	101,642			264,609	2,603	100.91
2002	2002	14	127,435	102,139			257,286	2,519	100.00

Notes: Population estimates based on census data from Historical Statistics of the Japanese Economy (p. 7).

Tax units defined as total adult population (aged 20 and above)

CPI from Estimates of Long-Term Economic Statistics of Japan since 1868, Vol. 8 Prices, p. 135, col. (1).

Disposable income from Estimates of Long-Term Economic Statistics of Japan since 1868, National Income (Ohkawa, Takamatsu, Yamamoto), p. 200, col. (8). Estimates from 1939-1946 from National Income real and nominal ratio from Historical Statistics of the Japanese Economy, p. 7. Estimates from 1949 on are from the Japanese Statistical Yearbooks

Table 2: Income Tax and Marginal Tax Rate in Japan, 1887-2002

Actual Year (incomes earned)	Fiscal Year (tax collected)	Basic exemption per tax unit ('000s of nominal Yens)	Exemption for each dependent ('000s of nominal Yens)	Marginal Tax Rates				
				Marginal Tax Rate at P99.9	Marginal Tax Rate at P99.99	Top Marginal Tax Rate	Marginal Tax Rate Top 0.1%	Marginal Tax Rate Top 0.01%
(1)	(0)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1884-6	1887	0.300		1.0	1.5	3.0	1.7	2.3
1885-7	1888	0.300		1.0	1.5	3.0	1.7	2.3
1886-8	1889	0.300		1.0	1.5	3.0	1.7	2.3
1887-9	1890	0.300		1.0	1.5	3.0	1.7	2.3
1888-90	1891	0.300		1.0	1.5	3.0	1.7	2.3
1889-91	1892	0.300		1.0	1.5	3.0	1.7	2.3
1890-2	1893	0.300		1.5	1.5	3.0	1.8	2.3
1891-3	1894	0.300		1.5	1.5	3.0	1.8	2.3
1892-4	1895	0.300		1.5	1.5	3.0	1.8	2.3
1893-5	1896	0.300		1.5	1.5	3.0	1.8	2.3
1894-6	1897	0.300		1.5	1.5	3.0	1.8	2.3
1895-7	1898	0.300		1.5	1.5	3.0	1.8	2.3
1898	1899	0.300		1.5	2.5	5.5	2.7	4.0
1899	1900	0.300		1.7	2.5	5.5	2.8	4.0
1900	1901	0.300		1.7	2.5	5.5	2.8	4.0
1901	1902	0.300		1.7	2.5	5.5	2.8	4.0
1902	1903	0.300		1.7	2.5	5.5	2.8	4.0
1903	1904	0.300		2.89	4.25	9.4	4.8	6.8
1904	1905	0.300		3.91	7.50	20.4	8.8	13.9
1905	1906	0.300		3.91	7.50	20.4	8.8	13.9
1906	1907	0.300		4.60	7.50	20.4	9.0	13.9
1907	1908	0.300		4.60	7.50	20.4	8.9	13.9
1908	1909	0.300		4.60	7.50	20.4	8.9	13.9
1909	1910	0.300		4.60	7.50	20.4	8.8	13.9
1910	1911	0.300		4.60	7.50	20.4	8.9	13.9
1911	1912	0.300		4.60	7.50	20.4	8.9	13.9
1912	1913	0.400		5.5	10.0	22.0	10.8	16.0
1913	1914	0.400		5.5	10.0	22.0	10.8	16.0
1914	1915	0.400		5.5	10.0	22.0	10.8	16.0
1915	1916	0.400		5.5	10.0	22.0	11.1	16.0
1916	1917	0.400		5.5	12.0	22.0	12.5	17.0
1917	1918	0.500		8.5	17.0	30.0	17.6	23.5
1918	1919	0.500		10.5	17.0	30.0	18.1	23.5
1919	1920	0.800		8.0	15.0	36.0	17.4	25.5
1920	1921	0.800		9.5	15.0	36.0	17.7	25.5
1921	1922	0.800		9.5	15.0	36.0	17.4	25.5
1922	1923	0.800		9.5	15.0	36.0	17.5	25.5
1923	1924	0.800		9.5	15.0	36.0	17.4	25.5
1924	1925	0.800		9.5	15.0	36.0	17.5	25.5
1925	1926	1.200		9.5	15.0	36.0	17.5	25.5
1926	1927	1.200		9.5	15.0	36.0	17.7	25.5
1927	1928	1.200		9.5	15.0	36.0	17.6	25.5
1928	1929	1.200		9.5	15.0	36.0	17.6	25.5
1929	1930	1.200		9.5	15.0	36.0	17.7	25.5
1930	1931	1.200		8.0	15.0	36.0	17.1	25.5
1931	1932	1.200		8.0	15.0	36.0	17.0	25.5
1932	1933	1.200		8.0	15.0	36.0	17.1	25.5
1933	1934	1.200		8.0	15.0	36.0	17.3	25.5
1934	1935	1.200		8.0	15.0	36.0	17.3	25.5
1935	1936	1.200		9.5	15.0	36.0	17.7	25.5
1936	1937	1.200		35.0	40.0	70.0	44.9	55.0
1937	1938	1.000		13.0	25.0	50.0	27.0	37.5
1938	1939	1.000		16.0	28.0	50.0	29.0	39.0
1939	1940	5.000		20.0	40.0	65.0	38.9	52.5
1940	1941	5.000		25.0	40.0	65.0	40.1	52.5
1941	1942	3.000		30.0	48.0	72.0	46.6	60.0
1942	1943	3.000		30.0	48.0	72.0	46.6	60.0
1943	1944	3.000		36.0	54.0	74.0	51.8	64.0

1944	1945	3.000	36.0	54.0	74.0	51.8	64.0
1945	1946	10.000	36.0	55.0	67.0	50.1	61.0
1946							
1947	1947	4.800	65.0	70.0	75.0	68.9	72.5
1948	1948	10.325	82.0	85.0	85.0	83.9	85.0
1949	1949	15.000	65.0	75.0	85.0	72.5	80.0
1950	1950	25.000	55.0	55.0	55.0	55.0	55.0
1951	1951		48.0	53.0	55.0	51.5	54.0
1952	1952		53.0	55.0	55.0	54.3	55.0
1953	1953		50.0	55.0	65.0	54.4	60.0
1954	1954		50.0	55.0	65.0	54.4	60.0
1955	1955		50.0	55.0	65.0	54.4	60.0
1956	1956		50.0	60.0	65.0	56.9	62.5
1957	1957		35.0	40.0	70.0	42.1	55.0
1958	1958		35.0	45.0	70.0	44.6	57.5
1959	1959		35.0	45.0	70.0	44.4	57.5
1960	1960		35.0	45.0	70.0	44.5	57.5
1961	1961		40.0	45.0	70.0	46.4	57.5
1962	1962		40.0	45.0	75.0	47.1	60.0
1963	1963		40.0	50.0	75.0	49.6	62.5
1964	1964		40.0	50.0	75.0	49.5	62.5
1965	1965		40.0	50.0	75.0	49.5	62.5
1966	1966		40.0	50.0	75.0	49.4	62.5
1967	1967		45.0	50.0	75.0	51.2	62.5
1968	1968		45.0	50.0	75.0	51.1	62.5
1969	1969		46.0	55.0	75.0	54.1	65.0
1970	1970		42.0	55.0	75.0	53.1	65.0
1971	1971		42.0	55.0	75.0	53.8	65.0
1972	1972		42.0	55.0	75.0	53.0	65.0
1973	1973		46.0	55.0	75.0	56.2	65.0
1974	1974		35.3	46.5	69.8	46.5	58.1
1975	1975		37.8	45.0	67.5	46.5	56.3
1976	1976		37.8	49.5	67.5	47.1	58.5
1977	1977		41.4	49.5	67.5	48.4	58.5
1978	1978		41.4	49.5	67.5	48.4	58.5
1979	1979		45.0	54.0	67.5	52.1	60.8
1980	1980		47.5	57.0	71.3	55.0	64.1
1981	1981		47.5	57.0	71.3	54.9	64.1
1982	1982		47.5	57.0	71.3	55.1	64.1
1983	1983		47.5	57.0	71.3	54.9	64.1
1984	1984		47.5	57.0	66.5	54.5	61.8
1985	1985		47.5	57.0	66.5	54.5	61.8
1986	1986		47.5	57.0	66.5	54.7	61.8
1987	1987		47.5	52.3	57.0	51.3	54.6
1988	1988		47.5	47.5	57.0	49.1	52.3
1989	1989		47.5	47.5	57.0	49.4	52.3
1990	1990		47.5	47.5	47.5	47.5	47.5
1991	1991		47.5	47.5	47.5	47.5	47.5
1992	1992		47.5	47.5	47.5	47.5	47.5
1993	1993		47.5	47.5	47.5	47.5	47.5
1994	1994		47.5	47.5	47.5	47.5	47.5
1995	1995		38.0	47.5	47.5	44.1	47.5
1996	1996		38.0	47.5	47.5	44.1	47.5
1997	1997		38.0	47.5	47.5	44.0	47.5
1998	1998		38.0	47.5	47.5	44.0	47.5
1999	1999		35.2	35.2	35.2	35.2	35.2
2000	2000		35.2	35.2	35.2	35.2	35.2
2001	2001		35.2	35.2	35.2	35.2	35.2
2002	2002		35.2	35.2	35.2	35.2	35.2

Notes: Official tax year refers to the year in which the income tax is collected. Year income earned refers to the years the income is actually earned.
From tax years 1887 to 1898, tax is based on average income from the three previous years. From 1899 to 1946, tax is assessed based on previous year income. From 1947 on, the income tax becomes pay-as-you-earn, and tax is based on incomes in current year.
Incomes earned in 1946 taxed according to special schedule, no statistics reported (see Shiomi, p. 69).
For years, 1899-1925: income tax based on estimated income (not on income reported by the taxpayers).
The tax unit is the family from 1887 to 1949. In 1950, the income tax shifts to an individual base system (following Shoup commission).
(Source is the History of the Income Tax in Japan, 1887-1987, in Japanese)

Table 3: Top Income Shares in Japan, 1885-2002

	Top 5%	Top 1%	Top 0.5%	Top 0.1%	Top 0.01%	Top 5-1%	Top 1-0.5%	Top 0.5-0.1%	Top .1-.01%	Top 0.01%
	(1)	(2)	(3)	(4)	(5)	(9)	(10)	(11)	(12)	(13)
1884-6		19.11	14.17	7.21	2.97		4.94	6.96	4.24	2.97
1885-7		20.02	14.61	7.28	3.05		5.41	7.33	4.23	3.05
1886-8		18.57	13.83	7.13	3.10		4.74	6.71	4.03	3.10
1887-9		17.68	13.23	6.93	2.95		4.45	6.31	3.97	2.95
1888-90		16.11	12.10	6.33	2.74		4.01	5.76	3.59	2.74
1889-91		14.59	10.98	5.74	2.46		3.61	5.24	3.28	2.46
1890-2		14.55	11.04	5.84	2.45		3.51	5.21	3.39	2.45
1891-3		14.74	11.30	6.07	2.52		3.44	5.23	3.55	2.52
1892-4		14.79	11.44	6.28	2.64		3.35	5.17	3.63	2.64
1893-5		14.74	11.53	6.43	2.73		3.21	5.10	3.69	2.73
1894-6		14.56	11.43	6.38	2.72		3.13	5.05	3.66	2.72
1895-7		13.87	10.89	5.94	2.45		2.98	4.94	3.50	2.45
1898		15.27	11.77	6.28	2.27		3.50	5.49	4.01	2.27
1899		15.72	12.27	6.72	2.51		3.45	5.55	4.21	2.51
1900		16.26	12.63	6.83	2.51		3.63	5.80	4.32	2.51
1901		16.93	13.14	7.09	2.62		3.80	6.05	4.47	2.62
1902		17.99	13.97	7.55	2.80		4.02	6.42	4.75	2.80
1903		17.55	13.66	7.43	2.74		3.89	6.23	4.69	2.74
1904		16.58	13.01	7.21	2.74		3.57	5.79	4.48	2.74
1905		18.07	14.13	7.82	2.97		3.94	6.31	4.85	2.97
1906		18.12	14.08	7.64	2.83		4.04	6.44	4.81	2.83
1907	32.25	18.26	14.12	7.58	2.76	14.00	4.13	6.54	4.82	2.76
1908	33.82	18.93	14.62	7.74	2.79	14.89	4.32	6.88	4.95	2.79
1909	33.71	18.74	14.43	7.56	2.68	14.96	4.31	6.88	4.87	2.68
1910	33.54	18.88	14.61	7.75	2.81	14.66	4.27	6.85	4.95	2.81
1911	31.40	17.99	13.98	7.52	2.77	13.41	4.01	6.46	4.75	2.77
1912	31.48	17.91	13.93	7.61	2.83	13.57	3.98	6.32	4.79	2.83
1913	30.56	17.45	13.56	7.38	2.73	13.11	3.90	6.17	4.65	2.73
1914	32.53	18.55	14.49	7.98	2.92	13.98	4.06	6.51	5.06	2.92
1915	32.79	19.60	15.63	9.09	3.70	13.19	3.98	6.54	5.39	3.70
1916	30.87	19.52	15.87	9.72	4.38	11.34	3.65	6.15	5.33	4.38
1917	28.98	18.68	15.32	9.52	4.31	10.30	3.36	5.80	5.20	4.31
1918	25.55	16.62	13.54	8.30	3.68	8.93	3.09	5.24	4.62	3.68
1919	24.83	15.25	12.24	7.37	3.12	9.58	3.01	4.87	4.25	3.12
1920	28.12	17.09	13.62	7.90	3.23	11.04	3.46	5.73	4.67	3.23
1921	31.47	18.48	14.51	8.10	3.15	12.99	3.98	6.40	4.95	3.15
1922	32.96	19.55	15.38	8.63	3.40	13.41	4.17	6.75	5.23	3.40
1923	33.58	19.72	15.45	8.60	3.37	13.85	4.27	6.85	5.23	3.37
1924	33.60	19.72	15.45	8.62	3.43	13.88	4.27	6.83	5.19	3.43
1925		18.32	14.34	7.96	3.16		3.98	6.38	4.80	3.16
1926		18.55	14.64	8.29	3.39		3.90	6.36	4.90	3.39
1927		17.89	14.12	7.96	3.22		3.77	6.17	4.73	3.22
1928		18.51	14.64	8.28	3.37		3.87	6.36	4.91	3.37
1929		18.35	14.51	8.17	3.33		3.85	6.33	4.84	3.33
1930		16.78	13.21	7.32	2.95		3.57	5.90	4.37	2.95
1931		17.38	13.62	7.42	2.92		3.76	6.20	4.50	2.92
1932		17.56	13.81	7.61	3.03		3.75	6.20	4.58	3.03
1933		18.28	14.48	8.16	3.40		3.79	6.32	4.76	3.40
1934		18.96	15.01	8.46	3.49		3.95	6.55	4.97	3.49
1935		18.74	14.83	8.41	3.49		3.91	6.42	4.93	3.49
1936		18.68	14.76	8.40	3.57		3.92	6.36	4.84	3.57
1937	31.34	19.26	15.33	8.83	3.80	12.07	3.94	6.50	5.03	3.80
1938	31.81	19.92	15.90	9.19	3.81	11.89	4.02	6.71	5.38	3.81
1939		17.95	14.16	7.83	3.10		3.79	6.33	4.73	3.10
1940		16.45	12.82	6.82	2.59		3.64	6.00	4.23	2.59
1941		16.67	12.58	6.36	2.31		4.09	6.22	4.05	2.31
1942		15.11	11.28	5.69	2.07		3.83	5.59	3.63	2.07
1943		13.63	10.04	4.96	1.78		3.59	5.08	3.18	1.78
1944		10.74	7.91	3.93	1.40		2.83	3.98	2.53	1.40
1945		6.43	4.42	1.89	0.56		2.01	2.54	1.33	0.56
1946										

1947	18.50	7.36	5.16	2.15	0.61	11.15	2.20	3.01	1.54	0.61
1948	20.37	7.79	5.24	2.06	0.55	12.58	2.55	3.18	1.51	0.55
1949	21.67	7.89	4.97	1.82	0.46	13.77	2.92	3.15	1.35	0.46
1950	20.96	7.69	4.90	1.73	0.42	13.27	2.79	3.17	1.31	0.42
1951	19.90	7.28	4.77	1.87	0.53	12.62	2.51	2.90	1.34	0.53
1952	21.19	7.85	5.18	2.02	0.55	13.34	2.68	3.16	1.47	0.55
1953	20.17	7.46	4.94	1.91	0.49	12.71	2.51	3.04	1.42	0.49
1954	19.73	7.20	4.76	1.83	0.47	12.53	2.44	2.93	1.37	0.47
1955	18.87	6.91	4.59	1.78	0.46	11.96	2.32	2.81	1.32	0.46
1956	19.55	7.37	4.94	1.90	0.49	12.18	2.43	3.04	1.42	0.49
1957	20.15	7.69	5.20	2.05	0.54	12.46	2.49	3.14	1.51	0.54
1958	20.17	7.74	5.23	2.08	0.54	12.43	2.51	3.15	1.54	0.54
1959	20.48	7.97	5.44	2.15	0.54	12.51	2.53	3.30	1.61	0.54
1960	20.75	8.17	5.51	2.22	0.58	12.57	2.66	3.29	1.64	0.58
1961	20.68	8.44	5.79	2.31	0.60	12.24	2.65	3.49	1.71	0.60
1962	21.19	8.68	5.91	2.35	0.61	12.51	2.77	3.57	1.74	0.61
1963	21.03	8.50	5.74	2.31	0.60	12.53	2.76	3.43	1.71	0.60
1964	20.62	8.33	5.59	2.18	0.56	12.29	2.74	3.41	1.61	0.56
1965	20.04	7.91	5.26	2.04	0.52	12.13	2.65	3.22	1.51	0.52
1966	19.47	7.62	5.07	1.94	0.49	11.85	2.55	3.13	1.45	0.49
1967	19.86	7.63	5.11	1.96	0.49	12.23	2.53	3.14	1.48	0.49
1968	19.45	7.56	5.05	1.91	0.46	11.89	2.51	3.13	1.45	0.46
1969	20.38	8.01	5.27	1.91	0.47	12.37	2.73	3.36	1.45	0.47
1970	21.13	8.19	5.50	2.05	0.57	12.94	2.69	3.46	1.48	0.57
1971	21.67	8.42	5.49	1.94	0.63	13.25	2.93	3.55	1.31	0.63
1972	21.49	8.10	5.14	1.60	0.44	13.39	2.96	3.54	1.16	0.44
1973	21.01	7.62	5.02	2.18	0.86	13.40	2.59	2.84	1.32	0.86
1974	19.93	7.20	4.61	1.78	0.57	12.73	2.60	2.83	1.21	0.57
1975	19.58	7.08	4.60	1.77	0.61	12.50	2.48	2.84	1.16	0.61
1976	19.52	6.81	4.28	1.51	0.34	12.71	2.52	2.78	1.16	0.34
1977	19.45	6.77	4.26	1.48	0.34	12.68	2.51	2.78	1.14	0.34
1978	19.74	6.96	4.39	1.52	0.35	12.78	2.57	2.86	1.18	0.35
1979	20.23	7.25	4.68	1.65	0.38	12.98	2.57	3.03	1.28	0.38
1980	20.10	7.16	4.65	1.65	0.38	12.94	2.51	2.99	1.28	0.38
1981	20.07	7.11	4.61	1.59	0.36	12.97	2.50	3.02	1.24	0.36
1982	19.99	7.02	4.60	1.62	0.40	12.96	2.42	2.98	1.23	0.40
1983	20.03	6.94	4.46	1.50	0.34	13.08	2.48	2.96	1.16	0.34
1984	20.09	6.95	4.48	1.49	0.35	13.14	2.48	2.98	1.15	0.35
1985	20.25	7.03	4.50	1.50	0.35	13.22	2.53	3.01	1.14	0.35
1986	20.60	7.21	4.59	1.54	0.40	13.39	2.62	3.05	1.14	0.40
1987	21.42	7.66	4.88	1.65	0.51	13.75	2.78	3.23	1.14	0.51
1988	21.52	7.63	4.79	1.62	0.53	13.89	2.84	3.17	1.09	0.53
1989	21.70	7.90	5.07	1.83	0.72	13.80	2.84	3.23	1.11	0.72
1990	21.78	8.05	5.22	2.04	0.86	13.73	2.83	3.18	1.18	0.86
1991	21.16	7.54	4.84	1.81	0.73	13.62	2.70	3.03	1.08	0.73
1992	20.58	7.12	4.60	1.65	0.50	13.46	2.52	2.96	1.15	0.50
1993	20.72	7.15	4.61	1.62	0.49	13.57	2.54	2.99	1.13	0.49
1994	20.93	7.07	4.50	1.62	0.49	13.87	2.57	2.88	1.13	0.49
1995	21.47	7.30	4.68	1.64	0.47	14.17	2.62	3.03	1.17	0.47
1996	21.61	7.36	4.71	1.69	0.50	14.25	2.66	3.01	1.20	0.50
1997	21.72	7.32	4.66	1.69	0.45	14.41	2.66	2.97	1.24	0.45
1998	22.30	7.59	4.85	1.74	0.45	14.72	2.74	3.11	1.29	0.45
1999	22.77	7.76	4.93	1.77	0.47	15.01	2.83	3.16	1.30	0.47
2000	23.52	8.22	5.32	2.04	0.57	15.30	2.90	3.28	1.47	0.57
2001	24.16	8.49	5.55	2.14	0.60	15.67	2.93	3.41	1.54	0.60
2002	24.60	8.65	5.64	2.16	0.58	15.95	3.01	3.48	1.57	0.58

Notes: Computations by authors based on tax return statistics. See Appendix Section B for details.
Series for Top 5-1% are not complete because the tax return population does not cover those groups in all years.
Income defined as sum of all sources of income: labor income, business income, farm income, land and property rentals, dividend income.
Income definition excludes realized capital gains.
Series are corrected upward for years where not all dividend income is included in taxable income.

Table 4: Top Estates in Japan (in '000s real 2002 yen), 1905-2002

	# Adults decedents (aged 20+) (1)	# Estate tax returns (2)	Fraction filing (2)/(1) (in percent) (3)	Top 5% (4)	Top 1% (5)	Top 0.5% (6)	Top 0.1% (7)	Top 0.01% (8)	Top 5-1% (9)	Top 1-0.5% (10)	Top 0.5-0.1% (11)	Top .1-.01% (12)	Top 0.01% (13)
1904	551,000	15,097	2.74		27,150	44,248	131,662	612,327		10,052	22,395	78,255	612,327
1905	570,000	23,313	4.09		39,508	64,909	198,905	905,240		14,107	31,410	120,424	905,240
1906	543,000	28,073	5.17		45,249	73,107	213,111	813,983		17,391	38,106	146,348	813,983
1907	567,000	35,494	6.26	15,546	51,733	84,578	255,884	1,131,343	6,499	18,889	41,751	158,611	1,131,343
1908	548,000	38,141	6.96	17,864	58,900	95,909	291,557	1,370,160	7,605	21,892	46,997	171,711	1,370,160
1909	575,000	32,028	5.57	16,589	56,484	92,792	283,429	1,299,753	6,615	20,176	45,132	170,504	1,299,753
1910	558,000	47,374	8.49	22,553	72,255	115,499	316,869	1,010,887	10,128	29,011	65,157	239,756	1,010,887
1911	544,000	48,742	8.96	23,610	77,321	125,174	352,886	1,280,724	10,183	29,469	68,245	249,793	1,280,724
1912	548,000	47,512	8.67	22,756	74,641	120,952	355,126	1,556,543	9,784	28,330	62,409	221,635	1,556,543
1913	537,000	44,678	8.32	21,723	71,455	115,717	335,938	1,314,140	9,290	27,193	60,662	227,248	1,314,140
1914	574,000	39,319	6.85	24,782	86,139	142,114	445,128	2,193,444	9,443	30,163	66,360	250,870	2,193,444
1915	565,000	41,810	7.40	28,190	93,657	151,434	449,383	2,020,034	11,823	35,880	76,947	274,866	2,020,034
1916	623,000	51,647	8.29	28,580	94,427	152,784	450,664	1,846,290	12,119	36,070	78,314	295,594	1,846,290
1917	628,000	41,260	6.57		78,852	129,357	394,225	1,611,504		28,347	63,140	258,972	1,611,504
1918	806,000	58,838	7.30	22,715	74,756	122,025	375,739	1,812,031	9,705	27,487	58,596	216,151	1,812,031
1919	680,000	96,152	14.14	27,485	82,934	131,870	386,419	1,722,991	13,623	33,998	68,233	237,911	1,722,991
1920	762,000	155,219	20.37	35,977	119,074	196,202	611,416	2,967,517	15,203	41,946	92,399	349,627	2,967,517
1921	669,000	147,715	22.08	39,004	125,096	203,175	583,687	2,224,272	17,481	47,017	108,047	401,400	2,224,272
1922	678,000	138,990	20.50	38,259	122,443	198,027	573,425	2,385,135	17,214	46,859	104,177	372,123	2,385,135
1923	699,000	122,744	17.56	42,558	147,548	249,657	828,157	4,204,570	16,311	45,440	105,032	452,999	4,204,570
1924	670,000	135,407	20.21	50,675	173,139	289,821	922,560	4,619,893	20,059	56,456	131,636	511,745	4,619,893
1925	643,000	61,599	9.58	38,686	143,539	249,748	870,863	4,997,480	12,472	37,331	94,469	412,350	4,997,480
1926	620,000	94,798	15.29	59,195	206,900	350,207	1,160,326	6,574,218	22,269	63,592	147,678	558,782	6,574,218
1927	649,000	129,086	19.89	61,676	219,861	375,121	1,241,465	6,754,041	22,130	64,601	158,535	628,956	6,754,041
1928	669,000	103,160	15.42	50,903	168,752	275,595	805,520	3,085,179	21,441	61,910	143,114	552,225	3,085,179
1929	680,000	97,308	14.31	59,419	208,628	350,154	1,089,098	4,979,980	22,116	67,102	165,418	656,778	4,979,980
1930	660,000	83,424	12.64	48,492	163,268	269,457	813,457	3,513,034	19,798	57,080	133,457	513,504	3,513,034
1931	698,000	90,670	12.99	50,409	167,367	273,077	808,731	3,435,020	21,169	61,656	139,163	516,921	3,435,020
1932	662,000	86,854	13.12	48,645	161,180	262,320	763,163	3,190,738	20,511	60,039	137,109	493,432	3,190,738
1933	682,000	88,183	12.93	51,836	180,098	303,452	977,032	4,953,259	19,771	56,743	135,057	535,229	4,953,259
1934	711,000	89,302	12.56	58,750	218,392	382,800	1,400,199	9,212,205	18,840	53,985	128,450	532,199	9,212,205
1935	675,000	60,615	8.98	47,671	174,540	301,451	1,037,972	5,867,339	15,954	47,628	117,321	501,376	5,867,339
1936	728,000	101,629	13.96	71,870	258,302	441,479	1,488,158	8,693,526	25,262	75,125	179,809	687,561	8,693,526
1937	704,000	118,272	16.80	72,946	261,778	445,943	1,497,576	8,833,212	25,738	77,614	183,035	682,505	8,833,212
1938	768,000	149,914	19.52	68,816	250,647	431,497	1,412,504	6,711,473	23,358	69,796	186,246	823,730	6,711,473
1939	769,000	51,446	6.69										
1940	740,000	77,478	10.47										
1941	715,000	148,649	20.79	46,669	153,954	252,670	798,888	4,133,819	19,848	55,238	116,116	428,340	4,133,819
1942													
1943	769,000			43,483	139,923	224,923	648,825	2,819,003	19,373	54,923	118,948	407,694	2,819,003
1944	799,000	125,523	15.71	29,690	92,883	149,393	430,625	1,888,930	13,892	36,373	79,085	268,591	1,888,930
1945	1,363,000	191,638	14.06	7,465	23,447	37,133	97,914	337,023	3,469	9,762	21,937	71,346	337,023
1946	869,000	147,469	16.97	4,306	11,046	16,691	45,877	215,877	2,621	5,402	9,394	26,988	215,877
1947	726,000	208,652	28.74	4,300	10,749	15,659	36,118	108,151	2,688	5,838	10,545	28,114	108,151
1948	640,000	197,504	30.86	4,173	10,395	15,204	35,286	95,655	2,618	5,586	10,183	28,578	95,655
1949	629,000	34,155	5.43										
1950	631,000	45,053	7.14										
1951	594,000	30,650	5.16										
1952	569,000	24,353	4.28										

1953	595,000	33,796	5.68										
1954	567,000	39,633	6.99										
1955	562,000	45,353	8.07										
1956	600,000	52,320	8.72										
1957													
1958	582,000	5,296	0.91		34,363	54,320	137,146	403,321			33,613	107,571	403,321
1959	592,000	6,749	1.14		39,957	61,058	149,072	458,069		18,856	39,055	114,739	458,069
1960	618,000	9,146	1.48		51,054	78,636	194,021	582,115		23,472	49,790	150,900	582,115
1961	615,000	11,316	1.84		63,860	99,588	251,310	793,981		28,132	61,657	191,013	793,981
1962	637,000	9,428	1.48		76,879	119,048	297,964	972,761		34,710	74,319	222,987	972,761
1963	605,000	11,253	1.86		87,321	134,906	338,515	1,223,391		39,737	84,004	240,195	1,223,391
1964	612,000	10,404	1.70		92,580	144,622	372,134	1,133,167		40,537	87,744	287,575	1,133,167
1965	642,000	13,161	2.05		97,174	147,776	344,552	859,992		46,571	98,583	287,281	859,992
1966	620,000	9,238	1.49		110,085	166,776	399,034	1,242,750		53,395	108,712	305,288	1,242,750
1967	624,000	11,294	1.81		131,925	201,489	498,842	1,693,012		62,361	127,151	366,157	1,693,012
1968	637,000	14,524	2.28		141,016	209,379	479,215	1,372,335		72,653	141,921	379,979	1,372,335
1969	646,000	19,315	2.99		168,872	250,106	557,592	1,585,821		87,638	173,234	443,345	1,585,821
1970	667,000	24,479	3.67		193,456	285,891	635,198	1,843,569		101,022	198,564	500,935	1,843,569
1971	640,000	25,920	4.05		249,332	367,274	829,692	2,584,884		131,390	251,669	634,671	2,584,884
1972	641,000	30,191	4.71	101,028	284,154	429,325	971,775	3,101,611	55,247	138,984	293,712	735,127	3,101,611
1973	666,000	29,171	4.38	115,336	343,481	506,656	1,100,018	3,118,922	58,300	180,306	358,315	875,696	3,118,922
1974	671,000	32,879	4.90	107,259	307,439	447,926	967,684	2,486,612	57,214	166,953	317,986	798,914	2,486,612
1975	666,000	14,585	2.19		284,933	415,587	914,293	2,680,877		154,280	290,910	718,006	2,680,877
1976	671,000	15,970	2.38		277,698	404,017	855,731	2,185,130		151,379	291,088	708,020	2,185,130
1977	660,000	17,886	2.71		278,874	406,110	872,242	2,346,307		151,638	289,577	708,457	2,346,307
1978	667,000	20,210	3.03		292,682	423,570	911,458	2,418,108		161,794	301,598	744,052	2,418,108
1979	663,000	22,675	3.42		301,048	434,008	888,935	2,190,017		168,087	320,276	744,370	2,190,017
1980	698,000	26,803	3.84		318,722	464,612	1,001,483	2,669,051		172,832	330,395	816,197	2,669,051
1981	697,000	31,574	4.53		370,232	539,247	1,157,527	3,170,641		201,217	384,677	933,847	3,170,641
1982	690,000	35,949	5.21	147,820	404,664	589,622	1,276,338	3,658,561	83,610	219,707	417,943	1,011,647	3,658,561
1983	719,000	39,545	5.50	153,608	421,691	616,350	1,363,240	4,094,148	86,588	227,032	429,627	1,059,806	4,094,148
1984	721,000	43,044	5.97	158,408	428,137	619,625	1,313,990	3,693,978	90,976	236,648	446,034	1,049,547	3,693,978
1985	734,000	48,150	6.56	170,913	463,314	675,198	1,472,996	4,347,620	97,812	251,430	475,748	1,153,594	4,347,620
1986	749,000	51,831	6.92	177,011	480,513	699,249	1,544,482	4,679,174	101,135	261,777	487,940	1,196,183	4,679,174
1987	735,000	58,947	8.02	212,242	584,161	861,857	2,018,490	6,755,997	119,262	306,466	572,699	1,492,101	6,755,997
1988	770,000	50,666	6.58	258,699	748,812	1,125,328	2,790,812	10,222,238	136,170	372,297	708,957	1,965,098	10,222,238
1989	779,000	41,599	5.34	311,516	946,480	1,460,636	3,696,641	13,548,109	152,775	432,323	901,635	2,602,033	13,548,109
1990	805,000	48,300	6.00	342,202	1,014,153	1,533,905	3,665,958	12,483,065	174,215	494,402	1,000,891	2,686,279	12,483,065
1991	815,000	56,561	6.94	401,415	1,197,474	1,809,678	4,385,354	15,453,762	202,400	585,270	1,165,759	3,155,531	15,453,762
1992	840,000	54,432	6.48	409,193	1,191,916	1,774,560	3,944,065	11,237,538	213,512	609,272	1,232,184	3,133,679	11,237,538
1993	868,000	52,861	6.09	352,589	1,000,843	1,472,683	3,225,954	8,924,398	190,525	529,004	1,034,365	2,592,793	8,924,398
1994	864,000	45,360	5.25	318,001	894,958	1,318,912	2,874,797	7,707,469	173,761	471,004	929,941	2,337,834	7,707,469
1995	909,000	50,722	5.58	315,904	872,533	1,269,445	2,680,425	6,837,903	176,746	475,620	916,700	2,218,483	6,837,903
1996	884,000	48,178	5.45	299,735	815,102	1,182,011	2,500,882	6,192,633	170,893	448,194	852,294	2,090,687	6,192,633
1997	910,000	48,594	5.34	285,341	773,023	1,124,849	2,435,816	6,878,787	163,420	421,196	797,108	1,942,152	6,878,787
1998	922,000	49,511	5.37	268,563	709,706	1,019,806	2,127,238	5,044,079	158,277	399,605	742,949	1,803,145	5,044,079
1999	972,000	50,738	5.22	259,263	686,285	990,990	2,079,118	5,414,767	152,507	381,580	718,957	1,708,490	5,414,767
2000	953,000	48,508	5.09	251,129	654,660	937,014	1,976,370	4,819,662	150,246	372,306	677,176	1,660,448	4,819,662
2001	962,000	45,984	4.78	243,574	654,291	952,826	2,095,136	6,228,714	140,895	355,757	667,248	1,635,849	6,228,714
2002	970,000	44,329	4.57	224,236	589,069	846,304	1,779,609	4,755,073	133,028	331,834	612,978	1,449,002	4,755,073

Notes: Computations by authors based on estate tax return statistics. See Appendix Section C for details.
Top groups are defined relative to the total number of adult decedents (aged 20 and above).
Estates are defined as gross estates before deductions net of liabilities.
From 1949 to 1957, the estate has been replaced by an inheritance tax and no tabulations by size of estate are provided.
In 2002, on average, 1,000 Yen = $8 or $1 = 125 Yens

Table 5: Reference totals for wage earners, wage income, and inflation, 1948-2002

Years		Regular Wage Earners			Income		Inflation
(1a)	(1b)	(2)	(3)	(4)	(7)	(8)	(9)
Year	Year (Japan)	Number of Wage earners in ('000s)	Returns Wage Survey ('000s)	(2)/(1) (%)	Total wage income (billions 2002 Yens)	Average wage income ('000s 2002 yens)	CPI (2002 base 100)
1948	23	11,006			6,904	627	10.58
1949	24	10,729	1,410	13.14	7,225	673	13.93
1950	25	10,928	5,114	46.80	9,532	872	12.99
1951	26	11,835	6,463	54.61	11,104	938	15.19
1952	27	12,275	6,838	55.70	12,846	1,046	16.03
1953	28	14,340	6,939	48.39	14,870	1,037	17.08
1954	29	14,800	7,625	51.52	15,439	1,043	18.12
1955	30	15,370	8,219	53.47	16,486	1,073	18.02
1956	31	16,660	8,745	52.49	18,813	1,129	18.12
1957	32	17,790	9,431	53.01	20,549	1,155	18.65
1958	33	18,860	10,268	54.44	22,776	1,208	18.54
1959	34	19,020	10,856	57.08	25,316	1,331	18.75
1960	35	20,220	11,715	57.94	28,091	1,389	19.49
1961	36	21,210	12,962	61.11	31,665	1,493	20.43
1962	37	22,190	14,106	63.57	35,153	1,584	21.90
1963	38	23,230	15,250	65.65	38,029	1,637	23.47
1964	39	24,080	16,123	66.96	42,642	1,771	24.41
1965	40	25,050	17,170	68.54	46,583	1,860	25.98
1966	41	26,160	18,277	69.87	50,978	1,949	27.34
1967	42	27,670	19,773	71.46	56,392	2,038	28.39
1968	43	28,690	20,676	72.07	62,196	2,168	29.96
1969	44	29,190	22,066	75.59	69,588	2,384	31.53
1970	45	30,230	24,244	80.20	77,696	2,570	33.94
1971	46	31,230	26,480	84.79	86,792	2,779	35.93
1972	47	31,620	27,096	85.69	96,653	3,057	37.61
1973	48	32,880	28,181	85.71	108,657	3,305	42.01
1974	49	33,220	29,895	89.99	110,902	3,338	52.28
1975	50	33,460	30,321	90.62	114,416	3,419	58.46
1976	51	34,020	31,068	91.32	117,435	3,452	64.01
1977	52	34,260	31,151	90.93	120,527	3,518	69.14
1978	53	34,360	32,113	93.46	125,063	3,640	71.66
1979	54	35,050	32,534	92.82	129,837	3,704	74.28
1980	55	35,860	33,361	93.03	130,085	3,628	80.25
1981	56	36,460	33,659	92.32	132,860	3,644	84.12
1982	57	36,920	33,996	92.08	136,637	3,701	86.43
1983	58	37,730	34,928	92.57	140,826	3,732	88.00
1984	59	38,260	35,306	92.28	145,394	3,800	89.99
1985	60	38,660	36,938	95.55	148,370	3,838	91.77
1986	61	39,320	37,287	94.83	153,379	3,901	92.19
1987	62	39,640	37,670	95.03	157,781	3,980	91.98
1988	63	40,540	37,918	93.53	165,970	4,094	92.40
1989	1	41,760	38,470	92.12	173,262	4,149	94.60
1990	2	43,160	39,307	91.07	181,689	4,210	97.53
1991	3	44,770	40,339	90.10	189,819	4,240	100.68
1992	4	45,890	41,247	89.88	195,086	4,251	102.35
1993	5	46,570	42,770	91.84	197,072	4,232	103.51
1994	6	46,900	43,726	93.23	201,399	4,294	104.03
1995	7	47,090	44,395	94.28	203,262	4,316	103.71
1996	8	47,540	44,895	94.44	207,393	4,362	103.71
1997	9	47,910	45,265	94.48	209,891	4,381	104.65
1998	10	47,500	45,446	95.68	206,707	4,352	104.54
1999	11	46,900	44,984	95.91	202,901	4,326	103.82
2000	12	46,840	44,939	95.94	207,231	4,424	102.47
2001	13	46,770	45,097	96.42	207,932	4,446	100.91
2002	14	46,040	44,724	97.14	202,579	4,400	100.00

Notes: Number of wage earners is total number of regular wage earners (excludes temporary and daily employees), based on labor force survey.
Sources: Historical Statistics of Japan (Table 3.8, male and female regular wage earners) for period 1948-1985,
Japan statistical yearbook, Table 16.3 for period 1985-2002 (interpolated every 5 years between 1985 and 1995).
Number of wage earners (based on income tax withholding) from Report on Salaries and Wages in Private Firms (1952-2002)
The report includes only regular workers (excludes temporary and daily workers), excludes all government employees,
and excludes employees in firms where no employee has amount of witholding income tax to pay.
Total wage income defined as 90% of wages and salaries from National Accounts (includes bonuses, stockoptions (to check))
Sources: Historical Statistics of Japan up to 1985, Table 13-13,
Japan statistical yearbook, Table 3.6 for period 1990-2001 (interpolated between 1985 and 1990).
CPI from Japan Statistical Yearbook, Table 17-6 (Basic Group Index).
In 2002, on average, 1000 Yens = $8 or $1 = 125 Yens

Table 6: Top Wage Income Shares in Japan, 1924-2002

	Top 10% (1)	Top 5% (2)	Top 1% (3)	Top 0.5% (4)	Top 0.1% (5)	Top 0.01% (6)	Top 10-5% (7)	Top 5-1% (8)	Top 1-0.5% (9)	Top 0.5-0.1% (10)	Top .1-.01% (11)
1924		19.11	7.75					11.36			
1927		18.99	7.47					11.52			
1929		21.11	7.57					13.54			
1930		20.51	7.35					13.16			
1931		21.65	7.76					13.89			
1932		22.30	8.00					14.31			
1933		23.01	8.25					14.76			
1934		22.55	8.08					14.46			
1935		23.14	8.30					14.84			
1936		20.39	7.31					13.08			
1937		19.80	7.10					12.70			
1938											
1939		18.78	6.73					12.05			
1940		16.88	6.05					10.83			
1941		13.60	4.88					8.73			
1942		11.91	4.27					7.64			
1943		10.34	3.71					6.63			
1944		8.85	3.17					5.68			
1951	23.20	14.70	4.83	2.98	0.97	0.19	8.50	9.87	1.85	2.01	0.79
1952	24.37	15.60	5.39	3.37	1.10	0.22	8.77	10.21	2.02	2.27	0.87
1953	24.06	15.46	5.35	3.36	1.12	0.22	8.61	10.11	2.00	2.23	0.91
1954	24.20	15.48	5.34	3.36	1.11	0.23	8.72	10.14	1.98	2.25	0.89
1955	24.19	15.43	5.34	3.34	1.10	0.22	8.77	10.09	2.00	2.24	0.89
1956	25.77	16.67	5.88	3.64	1.24	0.25	9.11	10.79	2.24	2.41	0.99
1957	26.84	17.31	6.10	3.79	1.29	0.25	9.53	11.21	2.31	2.50	1.04
1958	26.47	17.13	6.06	3.80	1.28	0.26	9.34	11.06	2.27	2.51	1.02
1959	26.49	17.18	6.19	4.04	1.32	0.25	9.31	11.00	2.15	2.72	1.07
1960	27.00	17.48	6.14	3.90	1.32	0.26	9.52	11.34	2.24	2.58	1.06
1961	27.41	17.91	6.58	4.23	1.34	0.26	9.50	11.33	2.35	2.89	1.08
1962	26.85	17.70	6.40	4.07	1.29	0.25	9.14	11.31	2.33	2.78	1.04
1963	26.67	17.31	6.20	3.90	1.31	0.27	9.36	11.11	2.31	2.59	1.04
1964	26.17	16.96	6.02	3.74	1.24	0.24	9.21	10.94	2.28	2.50	1.00
1965	25.01	16.12	5.59	3.43	1.13	0.23	8.89	10.53	2.16	2.30	0.91
1966	24.43	15.62	5.37	3.31	1.08	0.20	8.81	10.25	2.06	2.23	0.88
1967	25.08	16.00	5.42	3.37	1.11	0.22	9.08	10.58	2.05	2.26	0.90
1968	25.49	16.24	5.41	3.36	1.11	0.21	9.25	10.83	2.05	2.26	0.90
1969	25.24	15.98	5.18	3.21	1.03	0.19	9.26	10.79	1.97	2.18	0.83
1970	25.50	15.95	5.04	3.10	1.00	0.19	9.55	10.91	1.94	2.10	0.82
1971	25.19	15.63	4.93	2.99	0.94	0.18	9.57	10.70	1.94	2.05	0.76
1972	25.24	15.70	5.02	2.96	0.89	0.16	9.54	10.68	2.06	2.07	0.73
1973	24.91	15.44	4.85	2.81	0.85	0.16	9.47	10.59	2.04	1.96	0.68
1974	24.47	14.97	4.56	2.72	0.81	0.15	9.49	10.41	1.84	1.91	0.66
1975	23.54	14.33	4.33	2.57	0.75	0.13	9.20	10.00	1.76	1.82	0.62
1976	24.01	14.63	4.43	2.61	0.80	0.13	9.38	10.19	1.82	1.82	0.66
1977	23.36	14.11	4.29	2.54	0.74	0.13	9.25	9.82	1.76	1.79	0.61
1978	23.32	14.06	4.32	2.59	0.78	0.14	9.26	9.74	1.73	1.82	0.64
1979	23.92	14.53	4.47	2.69	0.84	0.16	9.40	10.06	1.78	1.86	0.67
1980	23.99	14.56	4.47	2.72	0.88	0.19	9.43	10.09	1.76	1.84	0.69
1981	23.92	14.62	4.50	2.72	0.84	0.16	9.30	10.12	1.79	1.88	0.68
1982	23.46	14.32	4.36	2.64	0.83	0.17	9.14	9.95	1.73	1.81	0.67
1983	23.78	14.56	4.41	2.66	0.82	0.16	9.21	10.15	1.75	1.85	0.66
1984	23.82	14.60	4.46	2.70	0.84	0.17	9.22	10.14	1.77	1.86	0.67
1985	24.28	14.83	4.51	2.73	0.86	0.17	9.45	10.32	1.78	1.87	0.69
1986	24.67	15.06	4.54	2.71	0.84	0.17	9.61	10.53	1.83	1.87	0.67
1987	25.04	15.26	4.67	2.79	0.88	0.17	9.78	10.59	1.89	1.91	0.70
1988	25.10	15.30	4.65	2.75	0.84	0.16	9.80	10.65	1.90	1.91	0.68
1989	25.30	15.41	4.70	2.78	0.88	0.17	9.89	10.72	1.92	1.90	0.70
1990	25.54	15.57	4.77	2.84	0.90	0.17	9.97	10.80	1.94	1.94	0.72
1991	25.71	15.72	4.77	2.87	0.90	0.17	9.99	10.95	1.91	1.96	0.73
1992	25.79	15.77	4.77	2.87	0.92	0.18	10.03	11.00	1.90	1.95	0.74
1993	25.51	15.54	4.69	2.80	0.87	0.17	9.97	10.86	1.88	1.93	0.71
1994	25.43	15.38	4.65	2.80	0.91	0.18	10.05	10.72	1.85	1.90	0.73
1995	25.54	15.40	4.69	2.82	0.88	0.17	10.14	10.71	1.87	1.94	0.71
1996	25.25	15.16	4.60	2.78	0.88	0.18	10.09	10.56	1.83	1.90	0.70
1997	25.21	15.08	4.56	2.75	0.88	0.18	10.13	10.52	1.80	1.87	0.70
1998	25.57	15.44	4.80	2.94	0.94	0.18	10.13	10.64	1.86	2.00	0.76
1999	25.89	15.73	4.89	3.00	1.00	0.21	10.16	10.84	1.89	2.01	0.78
2000	25.74	15.68	4.95	3.07	1.03	0.22	10.06	10.73	1.88	2.04	0.81
2001	25.68	15.66	5.01	3.12	1.06	0.24	10.02	10.65	1.89	2.06	0.83
2002	25.80	15.78	5.05	3.15	1.07	0.23	10.02	10.72	1.90	2.08	0.84

Notes: Computations for years 1951-2002 by authors based on Report on Salaries and Firms in the private sector. See Appendix Section C for details.
Universe is all regular employees in the private sector (excludes daily and temporary employees and all government employees).
Wage Income defined as wages, salaries, and bonuses.
Computations for 1924 and 1927 are based on the monthly labor income survey and adding bonuses reported on tax returns for 1924, and 1927.
We assume that 100% of bonuses go to the top 5%, and 75% to the top 1%.
Computations for 1929-1944 are based on wages and salaries and bonuses reported on individual tax returns,
The stimates for 1924-1944 are based on many assumptions and are not as precise and not fully homogeneous with post war estimates.

Table 7: Individual Income Taxation of Wage Income in Japan, 1950-2002

Tax Year	Basic exemption per tax unit ('000s of nominal Yens)	Exemption for each dependent ('000s of nominal Yens)			Marginal Tax Rates on Employment Income: Marginal Tax Rate at P90	Marginal Tax Rate at P95	Marginal Tax Rate at P99	Marginal Tax Rate at P99.9	Marginal Tax Rate at P99.99	Top Marginal Tax Rate
(0)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1950	25	12								55.0
1951	38	17			30.0	33.0	43.0	48.0	53.0	55.0
1952	50	20			30.0	38.0	43.0	53.0	55.0	55.0
1953	60	35			21.3	30.0	40.0	50.0	55.0	65.0
1954	68	34			21.3	35.0	45.0	50.0	55.0	65.0
1955	75	40			21.3	30.0	40.0	50.0	55.0	65.0
1956	80	40			20.6	30.0	40.0	50.0	60.0	65.0
1957	88	48			12.0	18.0	25.0	35.0	40.0	70.0
1958	90	50			12.0	18.0	25.0	35.0	45.0	70.0
1959	90	65			13.5	18.0	25.0	35.0	45.0	70.0
1960	90	70			13.5	18.0	25.0	35.0	45.0	70.0
1961	90	50			9.0	18.0	25.0	40.0	45.0	70.0
1962	98	50			13.5	20.0	25.0	40.0	45.0	75.0
1963	108	50			13.5	20.0	30.0	40.0	50.0	75.0
1964	118	50			13.9	20.0	30.0	40.0	50.0	75.0
1965	128	58			15.0	20.0	30.0	40.0	50.0	75.0
1966	138	60			15.0	20.0	30.0	40.0	50.0	75.0
1967	148	68			15.0	20.0	30.0	45.0	50.0	75.0
1968	158	78			20.0	20.0	30.0	45.0	50.0	75.0
1969	168	95			17.3	21.1	29.4	46.0	55.0	75.0
1970	178	115			14.6	16.4	25.9	42.0	55.0	75.0
1971	190	130			12.6	15.2	22.8	42.0	55.0	75.0
1972	200	140			14.4	17.1	27.0	42.0	55.0	75.0
1973	208	155			16.4	19.1	28.8	46.0	55.0	75.0
1974	233	220			12.0	15.1	22.7	35.3	46.5	69.8
1975	260	260			12.8	16.8	24.3	37.8	45.0	67.5
1976	260	260			14.4	16.8	27.0	37.8	49.5	67.5
1977	290	290			14.4	16.8	27.0	41.4	49.5	67.5
1978	290	290			16.8	19.2	30.6	41.4	49.5	67.5
1979	290	290			16.8	19.2	30.6	45.0	54.0	67.5
1980	290	290			16.8	21.6	34.2	47.5	57.0	71.3
1981	290	290			19.2	24.3	36.1	47.5	57.0	71.3
1982	290	290			19.2	24.3	36.1	47.5	57.0	71.3
1983	290	290			19.2	24.3	36.1	47.5	57.0	71.3
1984	330	330			20.0	22.5	33.3	47.5	57.0	66.5
1985	330	330			22.5	27.0	38.0	47.5	57.0	66.5
1986	330	330			22.5	27.0	38.0	47.5	57.0	66.5
1987	330	330			22.5	27.0	38.0	47.5	52.3	57.0
1988	330	330			18.0	27.0	38.0	47.5	47.5	57.0
1989					18.0	27.0	38.0	47.5	47.5	57.0
1990					18.0	27.0	38.0	47.5	47.5	47.5
1991					27.0	27.0	38.0	47.5	47.5	47.5
1992					27.0	27.0	38.0	47.5	47.5	47.5
1993					27.0	27.0	38.0	47.5	47.5	47.5
1994					27.0	28.5	38.0	47.5	47.5	47.5
1995					18.0	19.0	28.5	38.0	47.5	47.5
1996					18.0	19.0	28.5	38.0	47.5	47.5
1997					18.0	19.0	28.5	38.0	47.5	47.5
1998	380	380			18.0	19.0	28.5	38.0	47.5	47.5
1999	380	380			18.0	19.0	28.5	35.2	35.2	35.2
2000	380	380			18.0	19.0	28.5	35.2	35.2	35.2
2001	380	380			18.0	19.0	28.5	35.2	35.2	35.2
2002	380	380			18.0	18.0	28.5	35.2	35.2	35.2

Notes: Official tax year refers to the year in which the income tax is collected. Year income earned refers to the years the income is actually earned.
year income. From 1947 on, the income tax becomes pay-as-you-earn, and tax is based on incomes in current year.
In 1950, the income tax shifts to an individual base system (following Shoup commission).
(Source is the History of the Income Tax in Japan, 1887-1987, in Japanese)
Marginal tax rates are estimated for a husband with non-working spouse and two dependent children and assuming that all income is from employment income. The marginal tax rates take into account the graduated employment income deduction.
Marginal tax rates do not include local income taxes (prefectural and municipal) and social insurance contributions.
Sources: 100 years of income tax in Japan before 1989. From 1989-2002, Ishii (2001), p. 82, and OECD Taxing Wages, 1998 on.

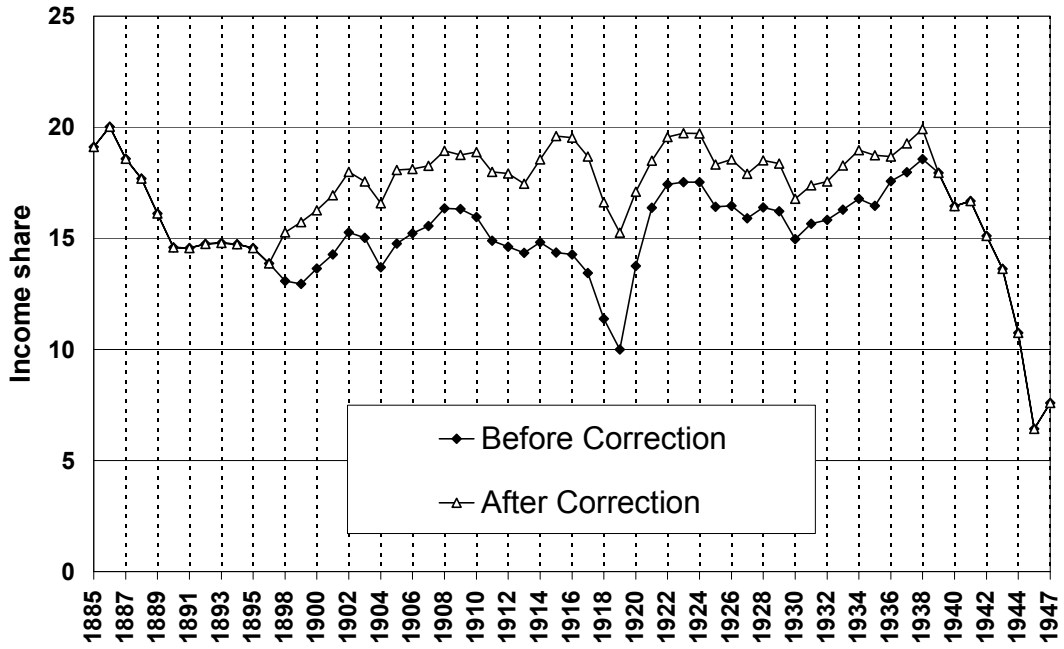

FIGURE A1

Top 1% Income Share in Japan, before and after correction, 1885-1947

From 1898 to 1938, dividends and bonuses are fully (1898-1920) or partially (1921-1938) exempted from progressive income taxation.
Figure shows raw estimates before correction and final estimates after correction.

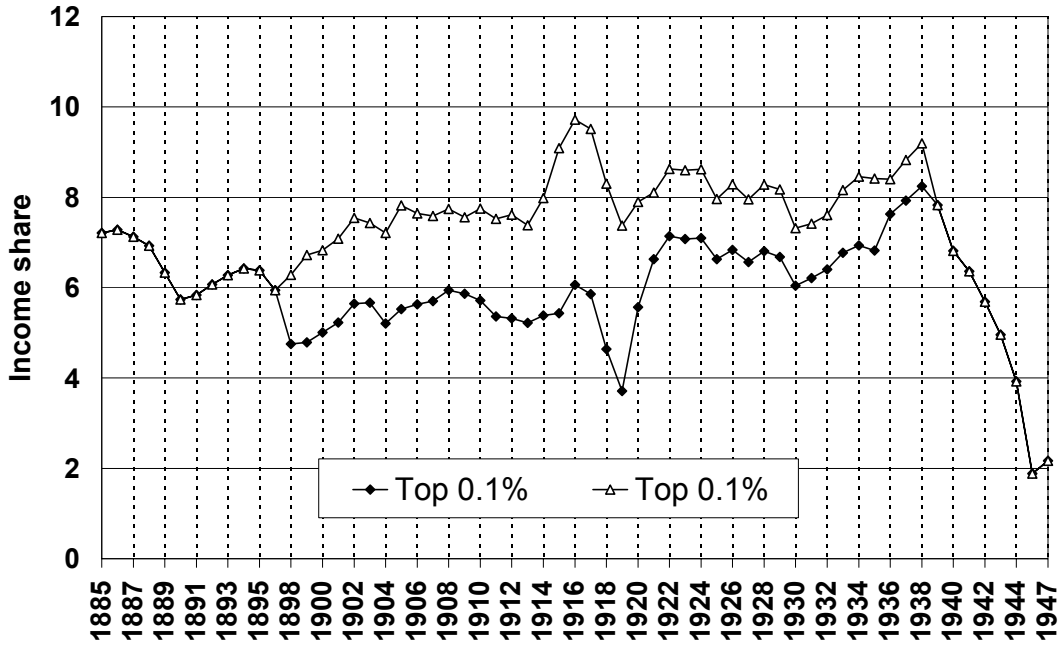

FIGURE A2

Top 0.1% Income Share in Japan, before and after correction, 1885-1947

From 1898 to 1938, dividends and bonuses are fully (1898-1920) or partially (1921-1938) exempted from progressive income taxation.
Figure shows raw estimates before correction and final estimates after correction.

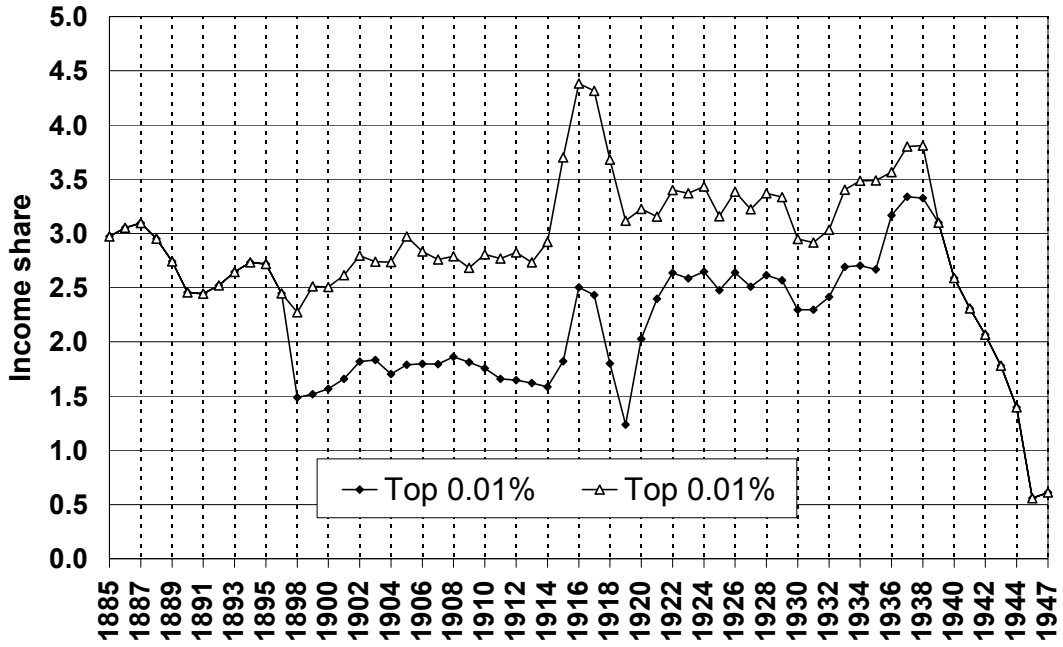

FIGURE A3

Top 0.01% Income Share in Japan, before and after correction, 1885-1947

From 1898 to 1938, dividends and bonuses are fully (1898-1920) or partially (1921-1938) exempted from progressive income taxation.
Figure shows raw estimates before correction and final estimates after correction.

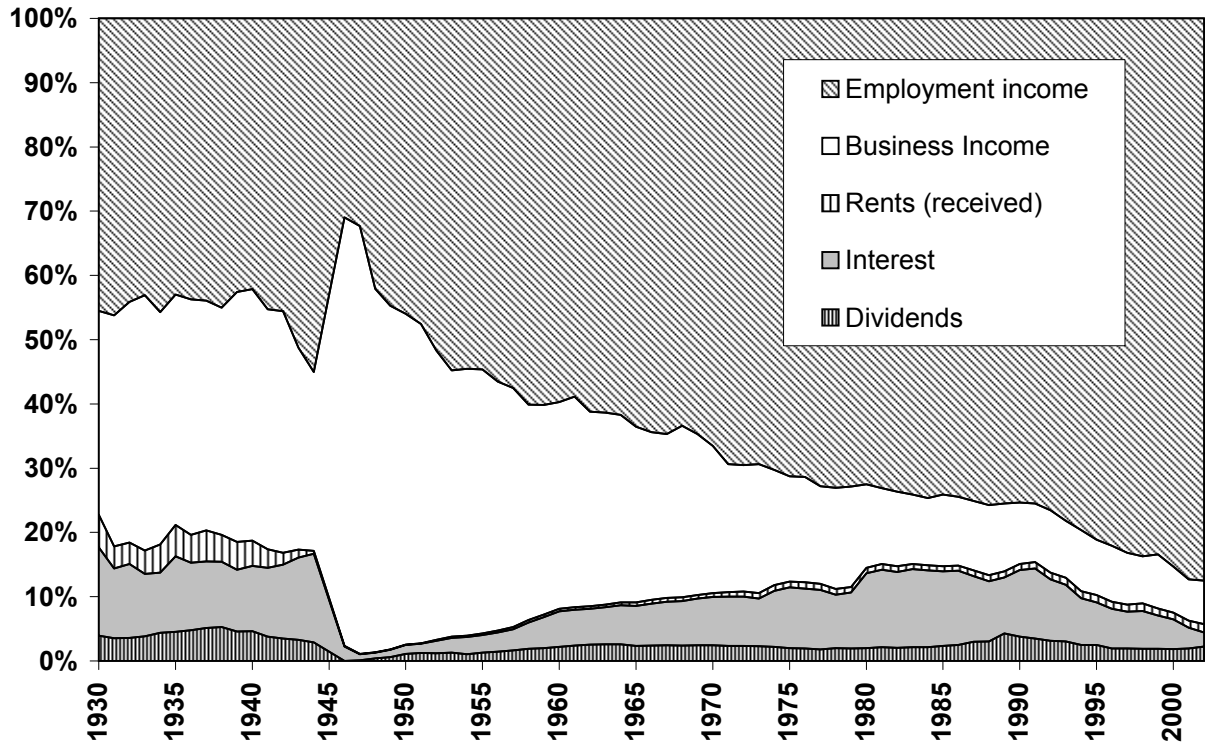

FIGURE A4

Income Composition of total personal income in Japan, 1930-2002

Source: National Accounts, 1930-2002

The Figure displays the composition of total personal income into dividends, interest, rents, business income, and employment income.