

Japan's Inequality and Redistribution: The Perspectives of Human Capital and Taxation/Social Insurance*

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Abstract

Inequality and redistribution have been widely discussed internationally and they are an important policy agenda in Japan as well. In this paper, we delve into the history of the academic debate on inequality and redistribution from the perspective of human capital, and draw policy implications for Japan. Further, we examine the current state of inequality and redistribution from the point of view of both household income and expenses, and taking account of the implications from the academic discussion, present several points for future discussion.

The traditional academic argument posits that there is a trade-off relationship between income redistribution and economic development. However, more recently, scholars have argued that redistribution and economic growth are compatible and mutually complementary; inequality could negatively impact economic development, or income redistribution could positively impact economic development. Particular attention has been paid to the importance of a redistribution policy that promotes human capital development.

In terms of inequality and redistribution in Japan, the majority of benefits provided to households are directed towards senior citizens and less towards human capital accumulation. Further, low-income households spend less on education, both in relative and absolute terms, and the education expenses of households with householders who do not have full-time employment are even lower. Examining household expenditure, we find that the impact of redistribution among income groups is diminished by wage deduction, regressive social insurance premiums, and taxation of financial income.

From the point of view of household income, it is important to consider redistribution methods that—in line with implications from the related academic discussion—promote human capital accumulation. From the point of view of household expenses, a taxation/social insurance premium regime should promote effective redistribution.

Keywords: inequality, redistribution, human capital accumulation, taxation, social insurance premiums

JEL Classification: O15, H23, H24

I. Introduction

Inequality and redistribution have become the topic of the day, attracting the attention of many in Japan and abroad, being often mentioned as the backdrop to the outcomes of the Brexit referendum or the US presidential election. For example, using the world income distribution data for 1988–2008 to examine inequality in the world, Milanovic (2013) finds that while income in the highest bracket in developed countries and overall income in emerging economies increased strongly, the income of the middle class in developed countries increased only slightly. Further, discussing the impact of decreasing the income tax rate, Hungerford (2012) and Piketty et al. (2014) point out that there is no correlation between decreasing the maximum income tax rate and economic growth; in countries where the maximum tax rate was significantly decreased, more wealth concentration in the top income bracket and broader inequality before taxes were observed (Stiglitz et al., 2015).

In Japan, inequality is examined also from multiple perspectives, such as differences in income and property ownership, full-time and non-full-time employment, or inter-generational and intra-generational income gap. To address these issues at the policy level, the importance of redistribution through personal income tax and property tax has been discussed, and laws have been amended.¹

The topic of inequality and redistribution has been debated internationally on various levels, and it is an important policy agenda also in Japan. Academic debates can serve as a fertile ground to develop policy implications for Japan. Traditionally, Okun (1975) and others have argued that there is a trade-off between income redistribution (equity) and economic growth (efficiency). However, some argue that inequality could negatively impact economic growth, and that income redistribution that promotes human capital development in low-income brackets could positively impact economic growth. Understanding the academic trend is important when considering the policy implications for Japan (Fukazawa, 2015; Kunieda, 2016). On the other hand, Japan's inequality and redistribution is structured differently from that of the Western countries (Moriguchi, 2017; Mizuho Research Institute, 2017).² Therefore, it is vital that we employ a large set of statistical data to accurately comprehend the current state of inequality and redistribution, and sort out the issues that warrant discussion on redistribution policies.

The goal of this paper is to provide an overview of the trends that govern the academic

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¹ For example, the maximum income-tax rate was increased from 40% to 45% in the fiscal year of 2015 (FY 2015). Regarding inheritance tax, base deduction towards inheritance was reduced by 40% in FY 2015 [a change from (50 million yen + 10 million yen×number of legal heirs) to (30 million yen + 6 million yen×number of legal heirs)].

² Many researchers have studied inequality and redistribution in Japan, see, for instance, Tachibanaki (1998), Ohtake (2005), Tachibanaki and Urakawa (2006), Oshio (2010).

debate on inequality and redistribution from the perspective of human capital accumulation, and explore the policy implications for Japan. We investigate the current state of inequality and redistribution in Japan from the point of view of both household income and expenses and considering the implications of the academic debate, outline several points for discussion on the topic of inequality and redistribution.³

The paper is structured as follows. First, Section II provides an overview of the trends governing the academic debate on inequality and redistribution from the perspective of human capital accumulation, and discusses the policy implications this engenders. In Subsection II.1, we examine the recent trend of viewing income redistribution and economic growth as compatible and mutually complementary, contrary to the traditional view of a trade-off relationship between them. Next, scrutinizing the argument that economic growth could be negatively impacted by inequality and positively by income redistribution, we introduce the analyses of Ostry et al. (2014) and Cingano (2014), which were carried out at international organizations, and point out the importance of redistribution policy that promotes human capital development. In Section III, we use microdata from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communications, 2009), aggregated data from government statistics, and similar sources, to analyze inequality and redistribution in Japan while considering both household income and expenses. Studying the income side in Subsection III.1, we investigate the current situation with regard to economic class and employment status, using the perspective of human capital accumulation developed in Section II. Considering household expenses, we provide an overview of the tax system and social insurance premiums based on income brackets. Further in Subsection III.2, we perform a micro-simulation to estimate the tax burden under a hypothetical change to the income tax system (such as cancelling wage income tax deduction and incorporating financial income tax into a comprehensive income taxation system). Lastly, drawing from the discussion in Sections II and III, we present in Section IV several points for future discussion on the topic of inequality and redistribution.

II. Academic debate on inequality and redistribution

II-1. Trends governing the academic debate

Inequality and redistribution have an important political and social dimension. In economics, a number of theoretical and empirical studies explore the relation between inequality and redistribution and economic growth, and the debate is still ongoing. Traditionally, inequality was thought to promote overall economic growth for several reasons. First, income and property ownership inequality were viewed as factors promoting savings by the rich, therefore increasing the global macro-savings, promoting investments and capital accumulation (Kaldor, 1955).⁴ Second, inequality was thought to incentivize risk-taking, innovation,

³ In economics, to measure the effectiveness of redistribution policies, we need to consider their effect on social welfare.

and entrepreneurship as the pathways to higher income through hard work (Mirrlees, 1971; Lazear and Rosen, 1981). On the one hand, there is an argument (Argument 1) that inequality requires rectification (redistribution policy), which negatively impacts economic growth. On the other hand, the argument that redistribution does not necessarily damage economic growth (Argument 2) is also gaining ground.

Argument 1 is based on political economics. For example, when inequality reaches a threshold that is no longer acceptable among voters in a democracy, voters will demand non-business-friendly policies, such as a high income-tax rate and other similar regulations and protective measures, that hinder investment incentives (Bertola, 1993). Alternatively, greater inequality will bring about social pressure for redistribution (Meltzer and Richard, 1981), as well as social and political unrest, which leads to an excessive redistribution policy that obstructs economic growth (Alesina and Perotti, 1996).

Argument 2 assumes capital market inefficiency and non-convex production technology, and focuses on human capital accumulation due to redistribution policy. Non-convex production technology means technology with increasing returns to scale; in the context of human capital accumulation, it describes a situation where a child's income greatly depends on whether the child receives at least a certain level of educational expenditure from the parent(s). A labor market divided between highly paid full-time employees and low-paid part-time employees is a typical example of such non-convex production technology. One part of the market is occupied by individuals who receive enough human capital investment and earn high lifetime income; the other part is occupied by individuals with insufficient human capital investment who remain in the low-income part-time jobs. Assuming that the capital market is perfectly efficient, individuals with low income are able to provide their children with enough human capital investment through loans, preventing insufficient levels of human capital investment even in a divided labor market. However, in an imperfect capital market with borrowing restrictions, human capital investment is limited by personal income and savings. The under-spending on human capital by the low-income bracket population with loan restrictions hence decreases the productivity of the overall economy and wealth disparity widens (Bruce and Waldman, 1991; Bénabou, 1996; Perotti, 1996; Aghion et al., 1999; Galor and Moav, 2004). In this case, redistribution policies could promote human capital accumulation for the low-income bracket population with loan restrictions and potentially lead to higher economic growth.

In sum, the traditional argument stresses the positive impact of inequality on economic growth; inequality promotes hard work, risk-taking, and savings by the rich, with the latter giving rise to capitalists and bankers. If we consider the political economy aspect of this situation, it is the inefficient redistribution policies that obstruct economic growth. On the other hand, since the 1990s, some economists have argued that inequality lowers the productivity of the overall economy due to under-investment in human capital of the low-income

⁴ This can be linked to the theory that financial activity was born out of primitive capital accumulation (the birth of capitalists) and bank deposits.

bracket population, and that redistribution policies that contribute to human capital accumulation in the low-income bracket population promote economic growth.⁵

Next, we present two examples of recent empirical research on the potential negative impact of inequality on the economy and the potential positive impact of redistribution on economic growth: Ostry et al. (2014) and Cingano (2014). Both studies were carried out at international organizations. Cingano (2014), in particular, points out underinvestment in human capital as the cause of inequality that negatively impacts economic growth and highlights the importance of a redistribution policy that promotes investment in human capital.

II-2. Recent empirical research at international organizations

II-2-1. The argument of Ostry et al. (2014)

Ostry et al. (2014) employ panel data from countries around the world to analyze the inequality and economic growth rate in each country. They make three major points.

First, the more severe the inequality before redistribution, the more extensive the implemented redistribution.

Second, in their estimation, medium-term economic growth⁶ is the response variable, and indicators for inequality⁷ and income redistribution⁸ are explanatory variables. The estimation results indicate a significant negative correlation between growth and inequality but no significant correlation between growth and income redistribution. This result confirms that higher disparity decreases mid-term economic growth but redistribution does not have a negative impact on economic growth.

Third, they estimate the probability that a growth spell will end next year⁹ (response variable), with the measures of inequality and income redistribution as explanatory variables. The estimation results indicate a significant correlation between the risk that the growth spell will end and net inequality, which suggests that higher inequality hinders sustainable economic growth. Next, income redistribution and risk that the growth spell will end were significantly correlated in countries with the largest degree of redistribution (top 25% of the analyzed countries according to their degree of redistribution), but no significant correlation was found in countries that belong to the bottom 75% in terms of the degree of their redistribution efforts. This suggests that government redistribution policies do not hinder economic growth except for in countries that already have a certain level of redistribution measures implemented. Figure 1 indicates that when the value of the Gini coefficient falls below 0.13 due to redistribution, redistribution efforts start to have a direct negative

⁵ More recent research suggests that the non-linear relationship between inequality and economic growth has evolved over time (Rehme, 2007; Tamai, 2015).

⁶ Medium-term economic growth uses the 5-year average of the real GDP growth rate per capita.

⁷ The Gini coefficient after redistribution (net income Gini) is used as the indicator of inequality.

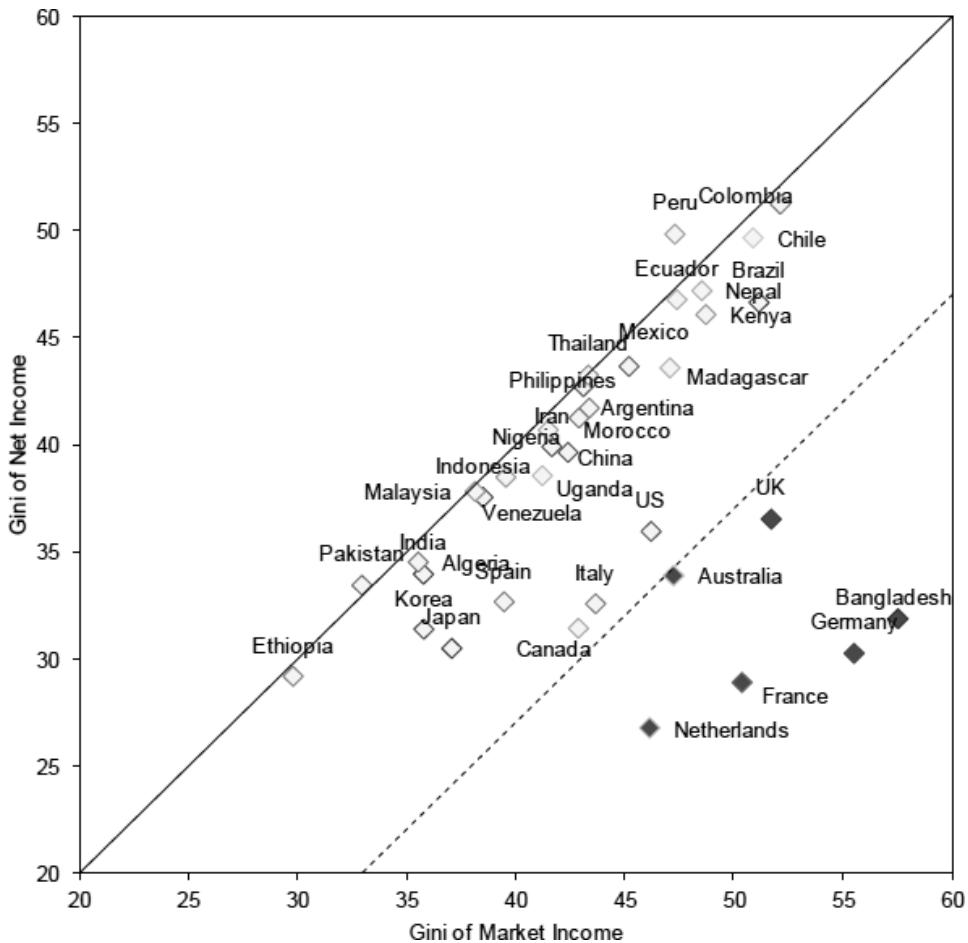
⁸ The employed income redistribution indicator calculates the difference between the market income Gini (before redistribution) and net income Gini (after redistribution) coefficients.

⁹ A growth spell is defined here as a period of 5 years or more, during which the real GDP growth per capita is above 2% and significantly higher than during the previous period.

impact on sustainable economic growth. If the Gini coefficient does not fall below this threshold, there is almost no negative impact.

These results, however, should not be overestimated for the purposes of policy development and analysis; the authors themselves mention the difficulty of drawing a clear conclusion on whether redistribution increases the rate of economic growth.¹⁰ Further, taking account of history and first principles of economics, they acknowledge that redistribution beyond a certain degree hinders economic growth. Ostry et al. (2014) conclude that inequal-

Figure 1. Redistribution and economic development



Note: The x-axis plots the values of the Gini coefficient before redistribution and the y-axis its values after redistribution (60 = 0.6). The solid 45-degree line means that the Gini coefficient has not changed before and after redistribution. Points on the lower right (below the solid line) indicate that the Gini coefficient declined after redistribution; inequality has been mitigated. Points on the lower right below the dashed line indicate that the Gini coefficient decreased by more than 0.13.

Source: Ostry et al. (2014), p. 23.

¹⁰ It is worth noting that redistribution policies in this context are limited to taxes and subsidies and do not include in-kind provisions of medical or educational services.

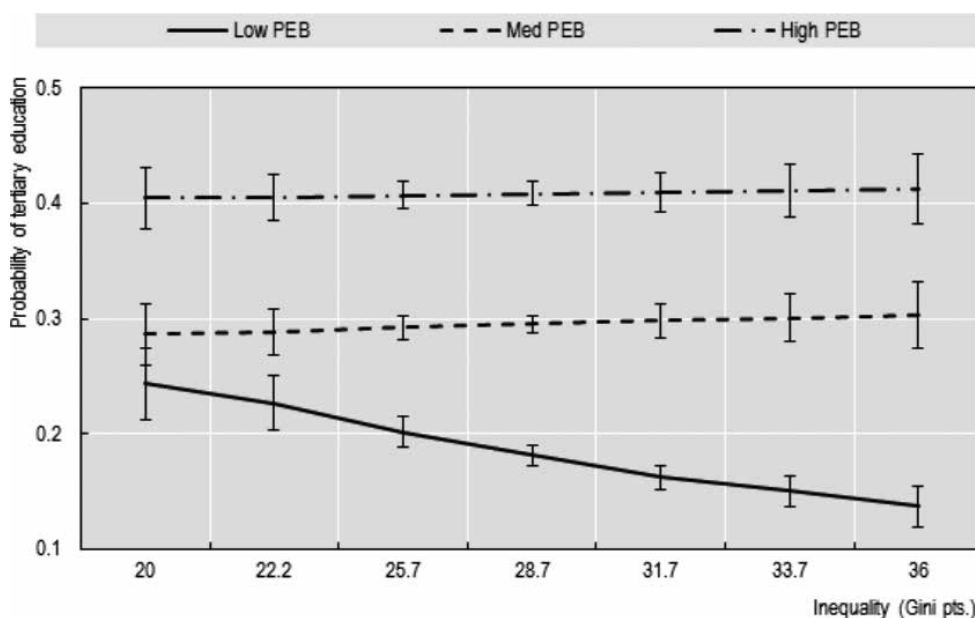
ity negatively impacts economic growth and governments' redistribution policies—if not taken to an extreme—have not hindered overall economic growth.

II-2-2. The argument of Cingano (2014)

Using data for 31 OECD countries over the period 1970–2010, Cingano (2014) quantitatively shows that inequality negatively impacts economic growth (see Figure 3 in Cingano, 2014).¹¹ He states that although the overall increase in inequality is caused by the top 1% super-wealthy bracket, it is the inequality between the low-income bracket and the other income groups that causes the most negative impact on economic growth.

Thus, Cingano (2014) focuses on the theory of human capital accumulation, which views human capital as a channel through which inequality may influence economic growth. Figures 2 and 3 show that both the quantity and quality of education of a child whose parents do not have post-secondary education will be negatively affected, and the negative impact will be more profound in countries with more inequality.¹² The findings suggest that in

Figure 2. Probability of attaining university education, parents' academic background, and inequality



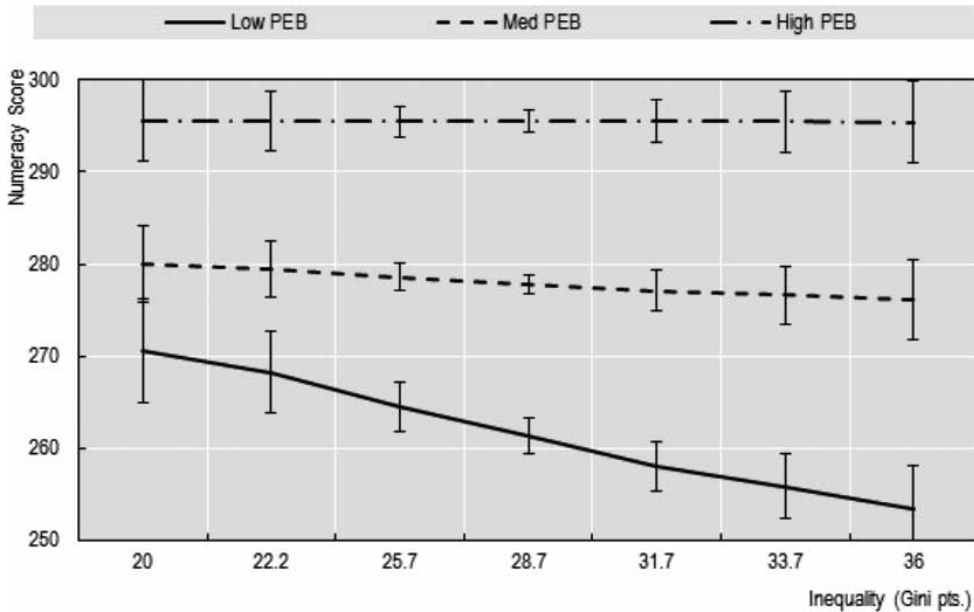
Note 1: The x-axis plots inequality (Gini coefficient) in the considered OECD countries, the y-axis plots the probability of attaining university education.

Note 2: PEB stands for Parents' Educational Background, where "Low PEB" means that none of the two parents has attained high-school education, Med PEB means that at least one of the parents has attained high-school education, and High PEB means that at least one of the parents has attained university education.

Source: Cingano (2014), p. 25.

¹¹ Some of the most recent empirical analyses of the impact of inequality on economic growth are Ohyama (2017) in Japan and Biswas et al. (2017) in the U.S.

Figure 3. Numeracy scores, parents' academic background, and inequality



Note 1: The x-axis plots inequality (Gini coefficient) in the considered OECD countries, the y-axis plots the predicted numeracy score.

Note 2: PEB stands for Parents' Educational Background, where "Low PEB" means that none of the two parents has attained high-school education, Med PEB means that at least one of the parents has attained high-school education, and High PEB means that at least one of the parents has attained university education.

Source: Cingano (2014), p. 27.

countries with more inequality, there are more impediments to the quantity and quality of education for children in the low-income bracket. Policies are needed to improve access to quality education. Hence, the focus should be on child-rearing households that make the decisions concerning human capital accumulation, that is, on investment in education. Among concrete policy suggestions, Cingano (2014) lists public education system reforms, active labor market policies for child-rearing households, assistance with child-rearing, and benefits for working individuals.

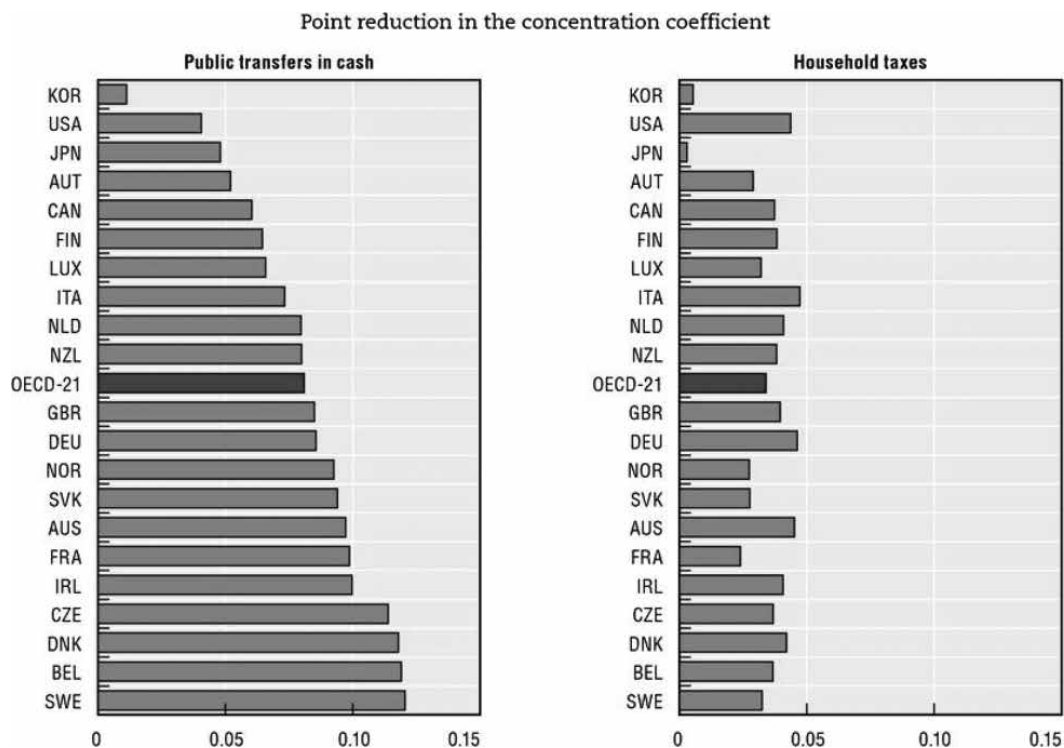
Further, Cingano (2014) highlights the importance of considering not only the population in the bottom 10% income group, but also in the broader, bottom 40% income group. This is because, according to the theory by Galor and Zeira (1993), under the assumption of imperfect labor markets and non-convex production technology, the bottom middle class represents the channel through which inequality negatively impacts economic growth. Cingano (2014) thus suggests that the emphasis should be on vocational training and skill acquisition, rather than on decreasing university tuition fees.

¹² Quantity of education means years of education, where the percentage of students attaining post-secondary education is used as a measure. Quality of education reflects advanced cognitive capabilities and numeracy scores are used as a measure.

III. Inequality and redistribution in Japan

An international comparison by OECD (2008) of redistribution effects (Figure 4)¹³ suggest that the redistribution effect in Japan's is relatively low in the case of both cash benefit and tax/social insurance premium payments, especially the latter. Two issues warrant attention. First, how are cash benefits structured from the perspective of human capital accumulation? Second, why is the redistribution via tax/social insurance premiums low compared with other countries? In this section, we first examine—from the perspective of human capital accumulation—the current state of household income and consumption expenses per economic class and employment status. For this purpose we use the data from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communications, 2009). Next, concerning the costs to households, we examine the overall picture of the cost structure of tax/social insurance premiums per income bracket. We perform a micro-simulation to estimate the change in cost structure due to a hypothetical policy change in income tax.

Figure 4. International comparison of redistribution effect



Source: OECD (2008), p. 112.

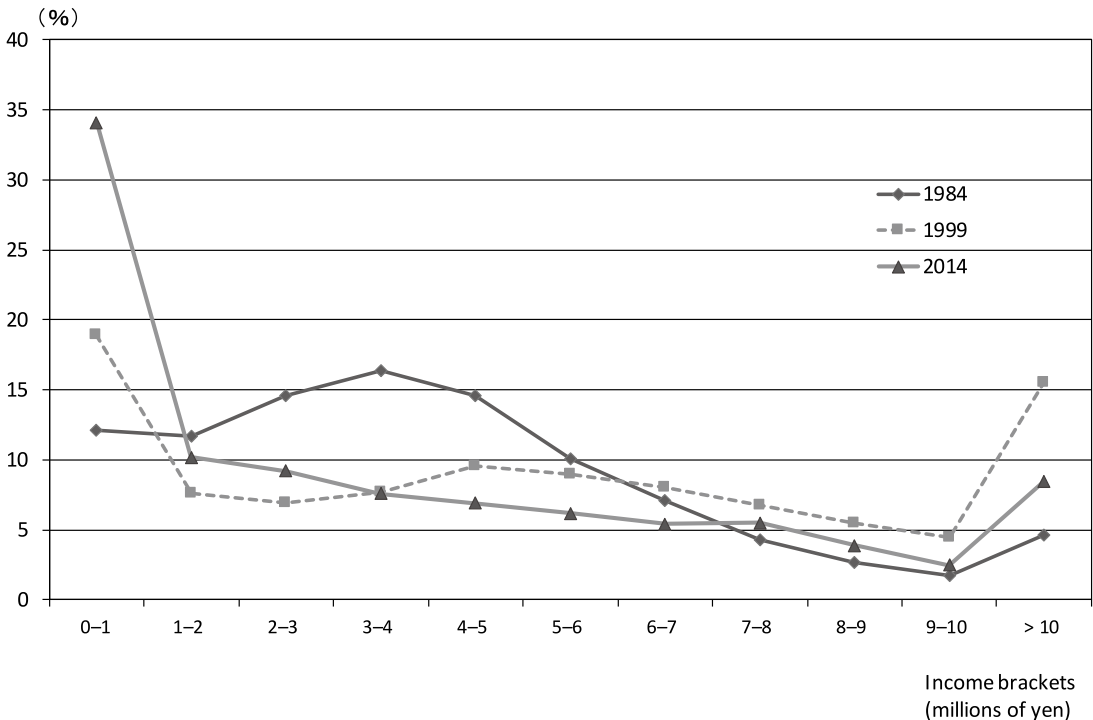
¹³ The redistribution effect in this case means the degree of improvement in the country's Gini coefficient.

III-1. Households and human capital

In this subsection, we examine the current state of the inequality and redistribution in Japan as per economic class and employment status. We study various data on income, capital, and employment from the perspective of human capital accumulation.

First, with regard to income, we look at how initial income and redistributed income (per household) changed over time (from 1984 to 1999, and then to 2014) per income bracket. The initial income level significantly increased during 1984–2014 primarily due to aging (Figure 5). On the other hand, if we look at redistributed income, there was a significant decrease for the income bracket below 5 million yen and an increase for the income bracket of over 6 million yen (particularly for the income bracket of over 10 million yen) during the period 1984–1999 (Figure 6). However, from 1999 to 2014, the income bracket of under 4 million yen registered an increase and the bracket of over 5 million yen recorded a decrease. This means that in recent years, Japanese households overall have earned a lower income than in the past. Next, Figure 7 compares income and expenses per age group in the context of redistribution from initial income to income after redistribution. It shows that the current

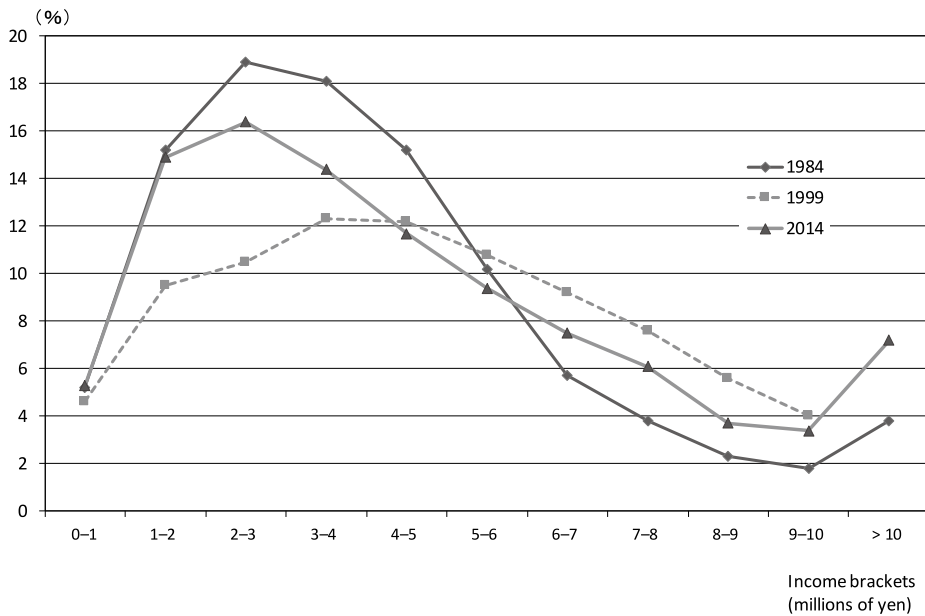
Figure 5. Changes in income distribution (initial income)



Note: Values per household.

Source: Authors; based on data from the Survey on Income Redistribution (Ministry of Health, Labor and Welfare).

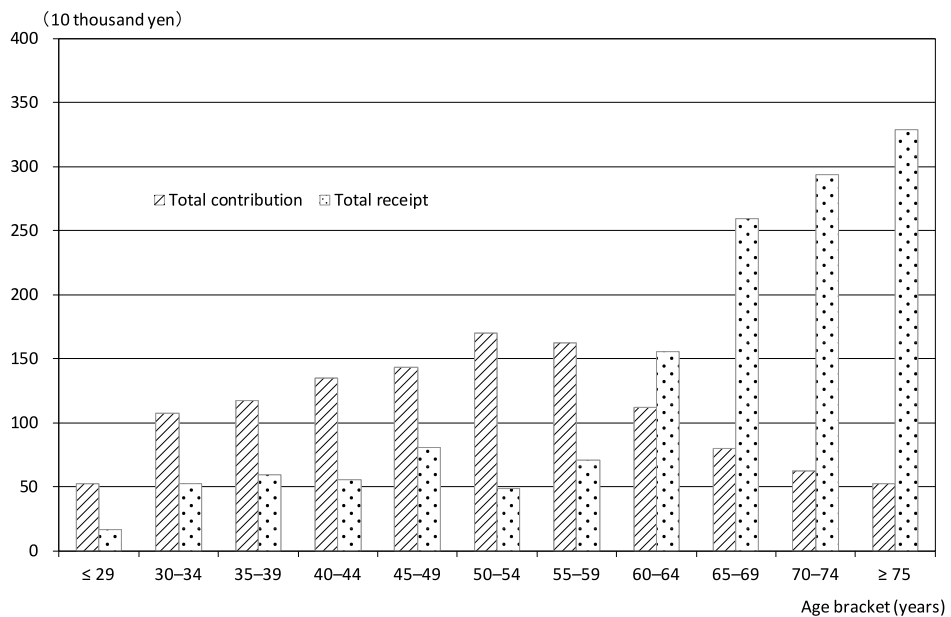
Figure 6. Changes in income distribution (redistributed income)



Note: Values per household.

Source: Authors; based on data from the Survey on Income Redistribution (Ministry of Health, Labor and Welfare).

Figure 7. Contribution and receipt per age bracket (2014)



Note: Values per household.

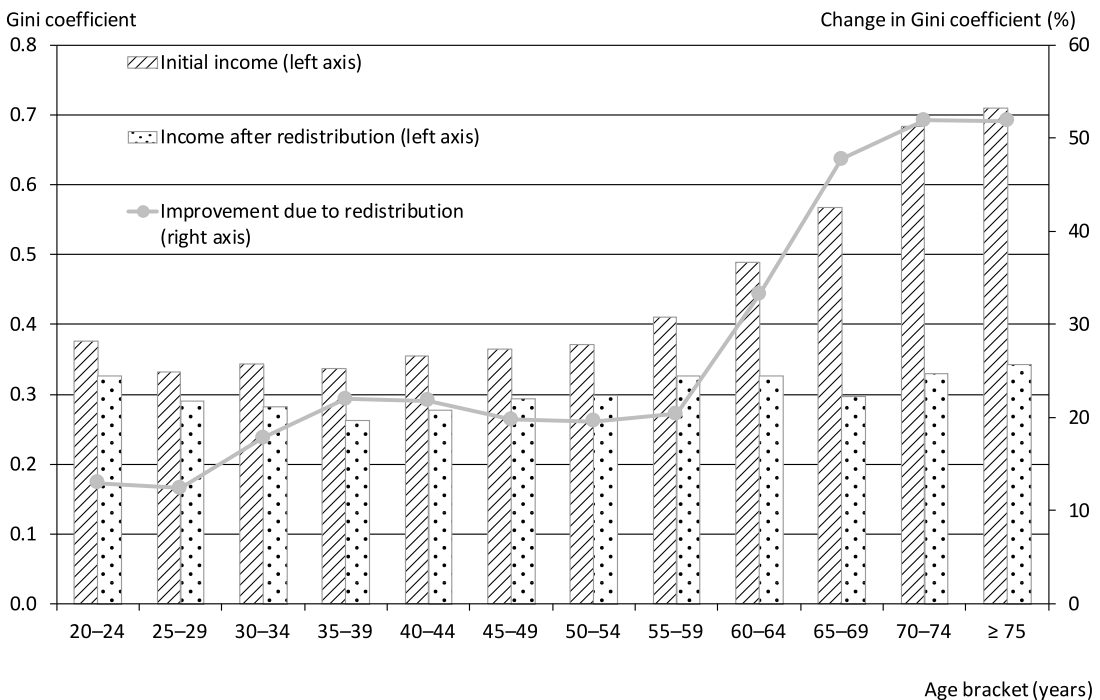
Source: Authors; based on data from Survey on Income Redistribution (Ministry of Health, Labor and Welfare, 2014).

workers are paying for the elder population. Figure 8 shows the changes in Gini coefficient per age group before and after redistribution; improvement in income disparity is higher for the older age group than the younger age group. This suggests that through redistribution from younger to older age groups, the degree of inequality is maintained at a similar level in all age groups.

Further, we consider capital and look at changes over time in the proportion of households without financial assets.¹⁴ Figure 9 shows that this proportion has been increasing since the 1990s and reached 30% in 2016. The proportion tends to be high particularly among young people. According to Figure 10, the number of households with a greater ownership of financial assets sharply increased after 2013 due to the higher valuation of financial assets, reflecting the bullish stock market. Exploring inequality among municipalities and identifying the 30 municipalities with the highest level of income (Figures 11 and 12), we find that capital gains were the highest in cities with a higher proportion of wealthy residents, resulting in further inequality.

Further, considering employment status and comparing income per age group, we find

Figure 8. Changes in the Gini coefficient before and after redistribution, per age bracket (2014)

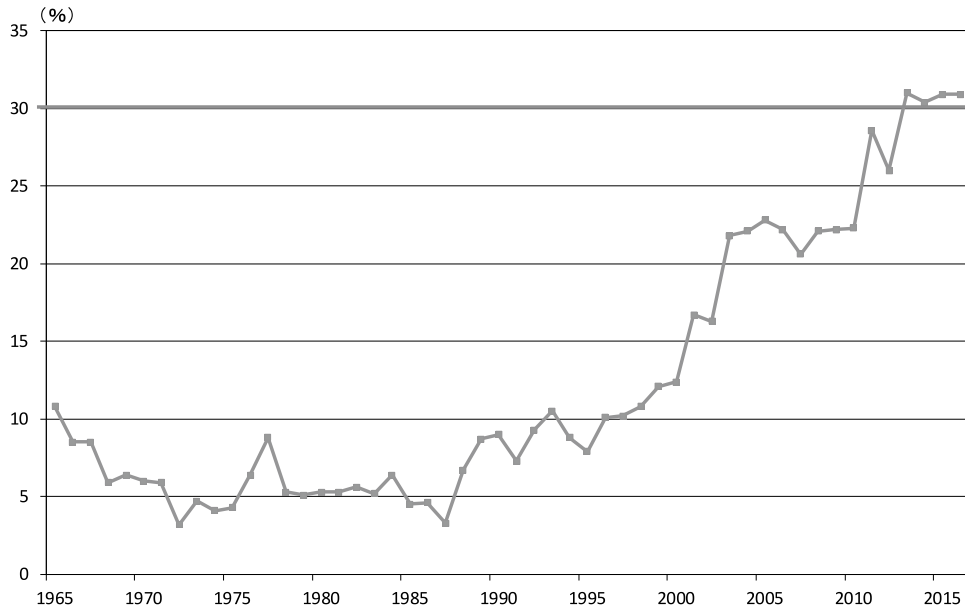


Note: Values per householder.

Source: Authors; based on data from the Survey on Income Redistribution (Ministry of Health, Labor and Welfare, 2014).

¹⁴ Financial assets in this context comprise savings and other financial assets, excluding those used for everyday transactions. Real assets (land, real estate, jewelry), cash, or financial assets used for industrial, commercial, agricultural activities and fishing are not included.

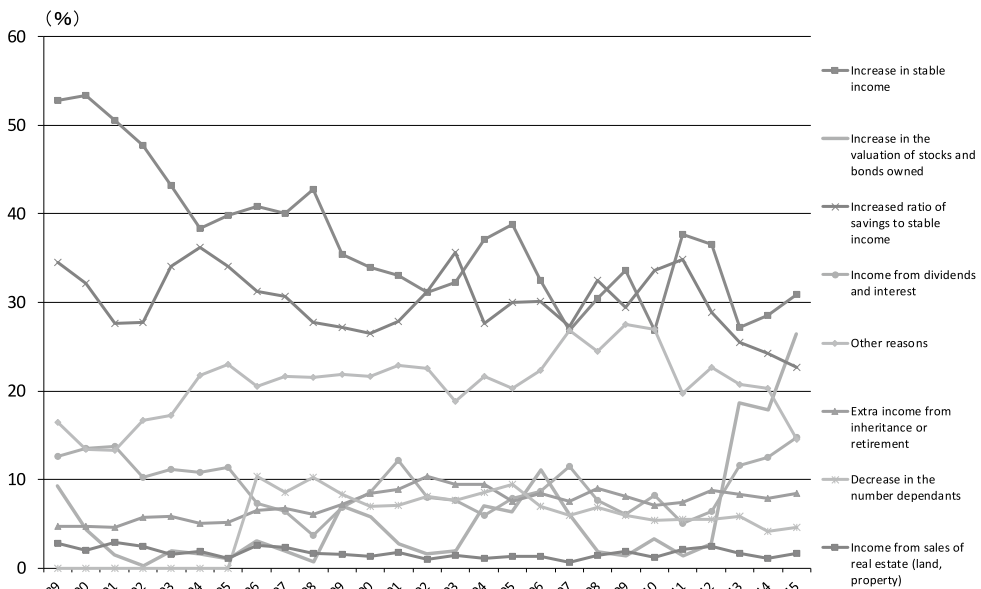
Figure 9. Changes in the ratio of households without financial assets



Note: As per age group, in 2016, 45.3% of householders in their 20s, 31.0% of householders in their 30s, 35.0% of householders in their 40s, 29.5% of householders in their 50s, 29.3% of householders in their 60s, and 28.3% of householders in their 70s had no financial assets.

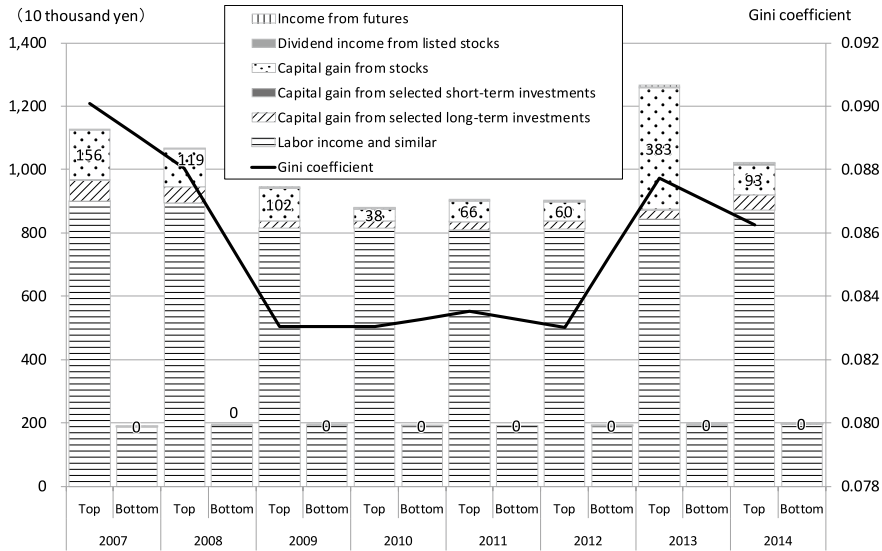
Source: Authors; based on data by the Central Council for Financial Services Information (survey on household finances; households with more than 2 people per household).

Figure 10. Reasons for an increased proportion of households with financial assets



Source: Authors; based on data by the Central Council for Financial Services Information (Survey on household finances; households with more than 2 people per household).

Figure 11. Income disparities among municipalities

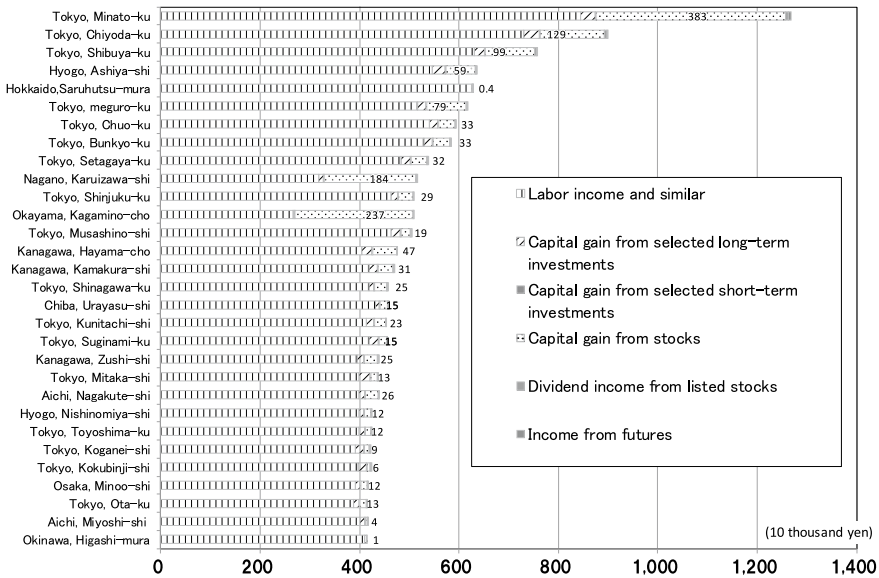


Note 1: “Top” refers to municipalities with the highest taxable income, and “Bottom” to municipalities with the lowest taxable income.

Note 2: “Labor income and similar” is the total income from income that rewards labor (wages, salaries, etc.) and business income that is taxable collectively.

Source: Authors; based on data from the Survey on Municipalities’ Taxation by the Ministry of Internal Affairs and Communications.

Figure 12. The top 30 municipalities with the highest income (2013)



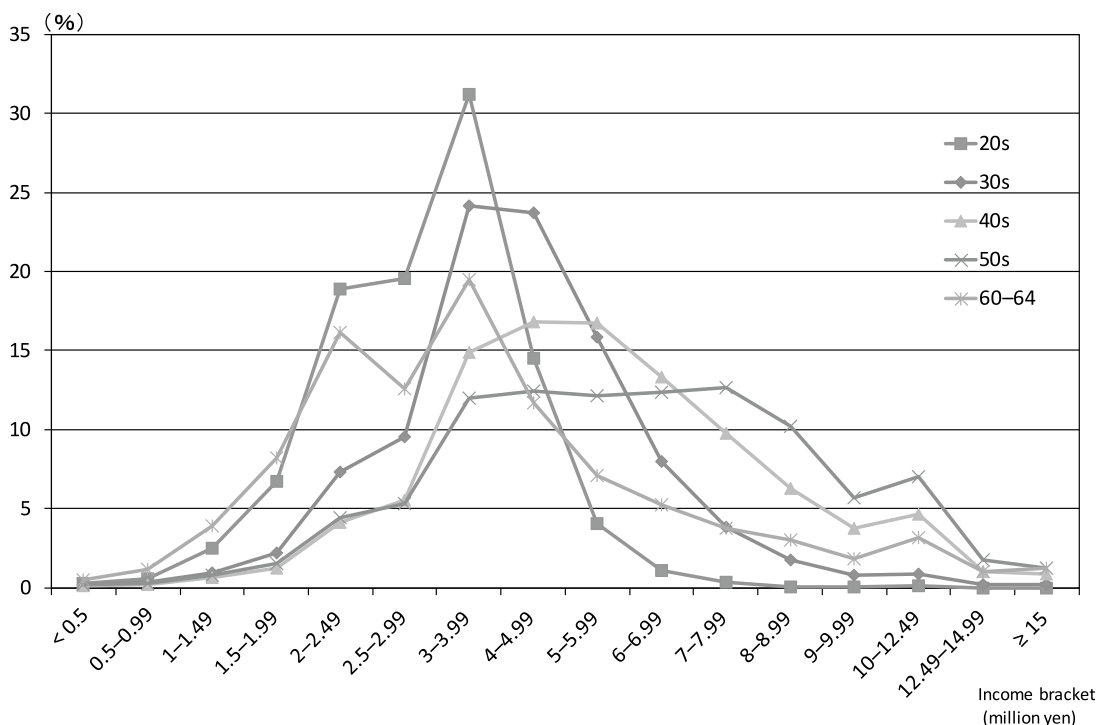
Note: “Labor income and similar” is the total income from income that rewards labor (wages, salaries, etc.) and business income that is taxable collectively.

Source: Authors; based on data from the Survey on Municipalities’ Taxation by the Ministry of Internal Affairs and Communications.

that men with full-time employment earn more with age (Figure 13), but there is almost no difference in income of men with part-time employment in different age groups (Figure 14).¹⁵ Figure 15 shows that there are many part-time employees in their 20s and their proportion increases among people in their 30s and 40s. This suggests not only that these generations receive less vocational training, but also that the number of people who do not receive opportunities for human capital accumulation is on the rise. Children of these generations are equally affected.

Next, we examine—from the perspective of human capital accumulation—the current situation in household educational spending per economic class or employment status. Using the data from the 2009 National Survey of Family Income and Expenditures, Table 1 considers households with householders in their 30s or 40s and children under 18, divides them into five group according to income level (the first group is the low-income group, the second to fourth are middle-income, and the fifth is the high-income group), and measures their overall consumption expenditure as well as education expenses (which constitute part of their overall consumption expenditure). According to this figure, the ratio of education

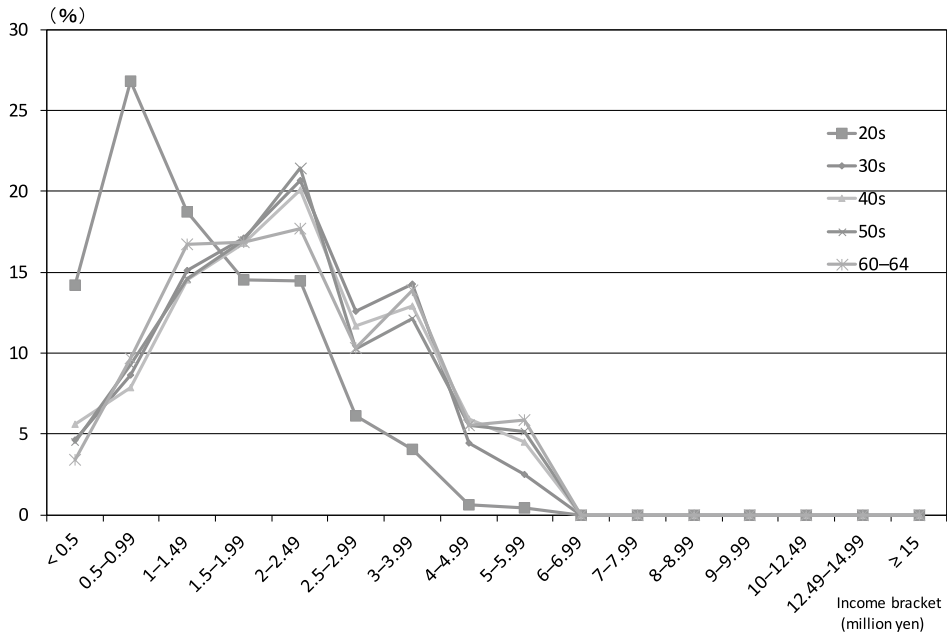
Figure 13. Income distribution per age group (males with full-time employment, 2012)



Source: Authors; based on data from the Employment Status Survey by the Ministry of Internal Affairs and Communications.

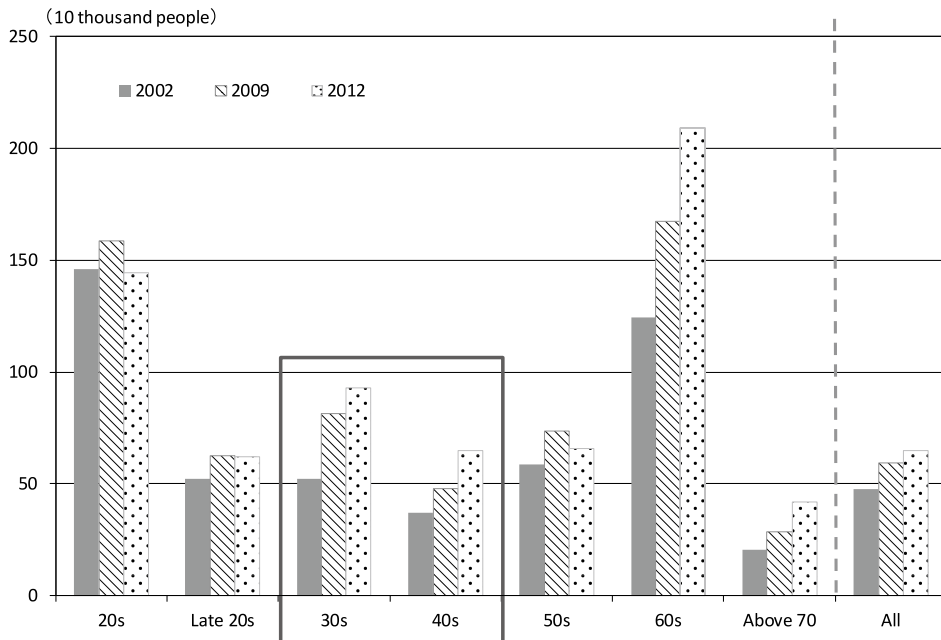
¹⁵ With gender, age, and employment status held constant, the average income from work is higher for people with higher educational attainment; for people with the same educational attainment, full-time employees earn more than part-time employees (Kuga, 2016).

Figure 14. Income distribution per age group (males with part-time employment, 2012)



Source: Authors; based on data from the Employment Status Survey by the Ministry of Internal Affairs and Communications.

Figure 15. Changes in the number of part-time male employees per age group



Note: Values given in 10 thousand people.

Source: Authors; based on data from the Employment Status Survey by the Ministry of Internal Affairs and Communications.

Table 1. Education expenses of households (by income, savings, and employment status)

(1) Per income bracket

	Low bracket (a)	Middle bracket	High bracket (b)	Average of all brackets	b/a
Household income (10,000 yen)	314.7	624.9	1162.3	670.2	3.7
Savings (10,000 yen)	340.6	700.0	1551.5	798.3	4.6
Monthly consumption expenditure (yen) (A)	112,513	149,478	212,891	154,752	1.9
Monthly education expenditure (yen) (B)	10,088	15,584	28,731	17,112	2.8
B/A	8.97%	10.43%	13.50%	11.06%	—

(2) Per savings bracket

	Low bracket (a)	Middle bracket	High bracket (b)	Average of all brackets	b/a
Household income (10,000 yen)	477.7	644.5	938.2	670.2	2.0
Savings (10,000 yen)	44.0	541.4	2324.9	798.3	52.8
Monthly consumption expenditure (yen) (A)	124,738	149,937	198,724	154,752	1.6
Monthly education expenditure (yen) (B)	11,520	16,243	25,270	17,112	2.2
B/A	9.24%	10.83%	12.72%	11.06%	—

(3) Per employment status

	Full-time employment (middle-income bracket)	Part-time employment (middle-income bracket)
Household income (10,000 yen)	646.6	302.7
Savings (10,000 yen)	726.6	406.4
Monthly consumption expenditure (yen) (A)	151,727	116,644
Monthly education expenditure (yen) (B)	15,724	12,300
B/A	10.36%	10.55%

Note 1: The data were collected for households with householders in their 30s and 40s and children under 18.

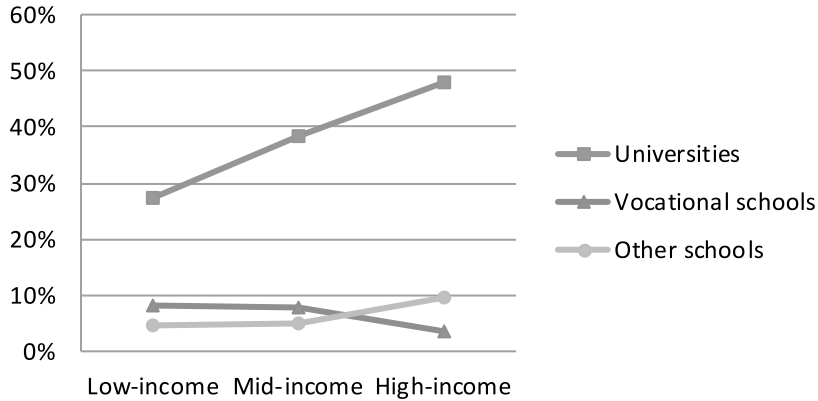
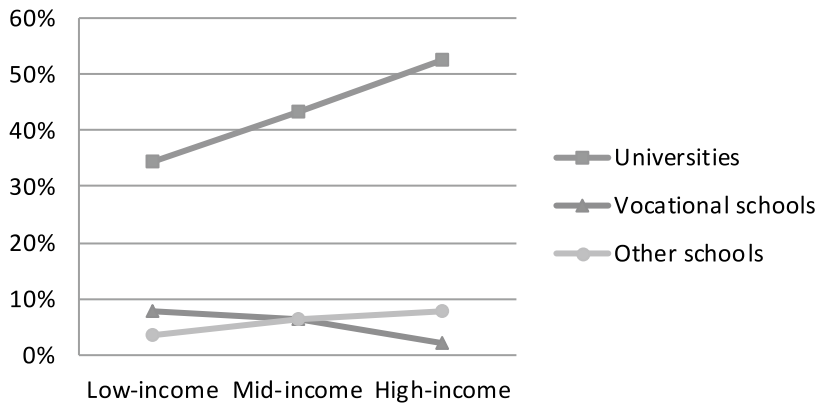
Note 2: Consumption expenses are adjusted using a standard measure, education expenses are adjusted using the headcount of children under 18.

Note 3: The standard household income (savings) bracket is divided into 5 groups (the 1st group is low-income, the 2nd to 4th are mid-income, and the 5th group is high-income).

Source: Authors; based on data from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communications, 2009).

expenses to overall consumption expenditure increases with income. This means that education expenses have more income elasticity compared with the overall consumption expenditure. The same can be said about the level of savings. Further, we compare the groups with full-time and part-time employment within the middle-income bracket in Table 1. The group with full-time employment has higher levels of income and savings, and therefore higher education expenses. The ratio of education expenses to overall consumption expenditure remains at almost the same level; what we can infer from this is that part-time employees suppress education expenses to restrain overall spending. Figure 16 also suggests that as income levels rise, children's university enrollment rate increases.

Figure 16. Rate of educational attainment per income bracket

Householders in their 40s**Householders in their 50s**

Note 1: Data collected from households with children aged 18-22.

Note 2: The standardized household income bracket is divided into 5 groups (the 1st group is low-income, the 2nd to 4th are mid-income, and the 5th group is high-income).

Source: Authors; based on data from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communications, 2009).

On the other hand, according to the international comparison of financial transfers for redistribution in Figure 17, Japan tends to offer its older population numerous benefits such as annuity insurance or medical insurance, but it offers fewer benefits, such as proactive labor market policies or education benefits, to its working population. Therefore, Japan emerges from this analysis as a country, where redistribution benefits the elderly rather than the working population. The result is a more significant transfer of income from the working population to the older generation that must be considered in conjunction with the trend of an aging population and dwindling birthrate (Oshio, 2013). Taking account of the implica-

Figure 17. International comparison of social expenditure (FY 2013)

(Proportion of GDP, %)

	Japan	United States	United Kingdom	Germany
Elderly-related	18.4	14.4	14.4	16.1
Family-related	1.2	0.7	3.8	2.2
Human capital-related	3.4	4.3	5.4	4.4

Note: “Elderly-related” indicates the sum of public social spending on the elderly and health, and “Family-related” represents public social spending on families, corresponding to the OECD standard social expenditure items. “Human capital-related is the sum of expenditure on active labor market policy (OECD standard social expenditure item) and education expenditure, which OECD releases separately from social expenditure data. The proportion of population aged 65 and higher in 2010 was 23.0% in Japan, 13.0% in the U.S., 16.2% in the U.K., and 20.6% in Germany.

Source: Authors; based on data from the National Institute of Population and Security Research (Social security cost statistic; FY 2015) and OECD “Education at a Glance 2016.”

tions from the academic debate, ways to achieve income redistribution that promotes human capital accumulation in younger generations will become an important issue in the future.

III-2. Taxation and social insurance premium system

In this subsection, we examine the burden on households. As mentioned above, redistribution effects due to taxation and social insurance premiums in Japan are relatively low compared with other countries. Compared with other developed countries, labor income tax Japan’s does not have a low maximum tax rate nor a flat tax rate. However, it has the highest rate of standard deduction for salaried workers¹⁶ in addition to deduction of personal and social insurance premiums. In terms of the effective labor income tax rate, the rate of progressive taxation hence can be represented by the flattest curve from among other major developed countries – up until the salary income bracket corresponding to 10 million yen.¹⁷ Further, the financial income tax has, in principle, a flat rate of 20% and it is calculated separately from other taxes. For the high-income population in the bracket of over approxi-

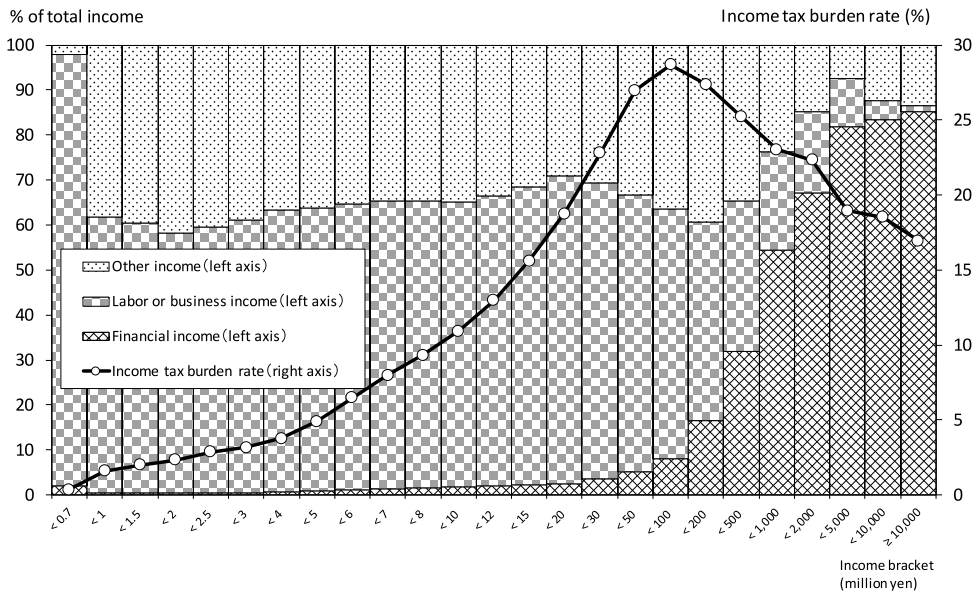
¹⁶ For an international comparison of standard deductions for salaried employees, see Japan’s Ministry of Finance website: http://www.mof.go.jp/tax_policy/summary/income/056.htm (January 2016; in Japanese). Nakamoto (2014) argues that the erosion of income tax base in Japan is mostly due to wage and social insurance-related deductions. Yashio (2015) argues that the Japanese tax system is unique due to a personal, social insurance premium and other various deductions on top of the wage deduction, which is an expense related to labor income.

¹⁷ For an international comparison of the effective tax rate and amount of individual income tax per salary brackets, see Japan’s Ministry of Finance website: http://www.mof.go.jp/tax_policy/summary/income/028.htm (January 2016; in Japanese) and http://www.mof.go.jp/tax_policy/summary/income/028a.pdf (January 2017; in Japanese). It is worth noting that the values of the tax burden across countries might differ depending on the family structure considered, the types of deduction applied, or the use of foreign exchange rate. The Ministry of Finance notes in these documents that to conduct a standardized international comparison, the individual tax burden is calculated based only on a certain family structure and wage income that are generally applied also in other countries. For example, UK’s income tax exemption (a full-amount payment) is not taken into consideration.

mately 100 million yen, the tax burden is thus reduced, and after considering the social insurance premium, the result is a less progressive tax burden. In the following, we examine the mechanism whereby the financial income tax and social insurance premium suppress the redistribution effect, lay out the overall system of taxation/social insurance premiums, and estimate the effect on the tax burden of a hypothetical income tax system change (such as cancelling wage income tax deduction, or incorporating the financial income tax into a comprehensive income taxation system).

First, depending on the country, the methods (comprehensive or separate) and rates of taxation of financial income differ by the types of income considered (interest, dividend, capital gain). For example, in taxing capital gain, France employs the comprehensive method (15.5–60.5%), whereas other countries employ the separate method, such as Germany (one level at 26.375%), the U.K. (two levels at 18% and 28%), and the U.S. (3 levels at 0%, 15%, and 20%, combined with a comprehensive method for the provincial and municipal tax).¹⁸ Japan employs the separate taxation method with a flat rate of 20%.¹⁹ A breakdown of income by income bracket plotted against the income tax burden rate (Figure 18) shows that for incomes below 100 million yen, salary and business income make up the majority of to-

Figure 18. Reporting taxpayers' income breakdown and income tax burden rate per income bracket (2014)



Note: Income tax burden rate = (amount of reported tax + tax deducted at source) / total income; Financial income ratio = (received interest + dividends + capital gain) / total income; Ratio of labor/business income to total income = (wage/salary income + business income + income from agriculture) / total income.

Source: Authors; based on data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014).

¹⁸ For more detail, see Japan's Ministry of Finance website:

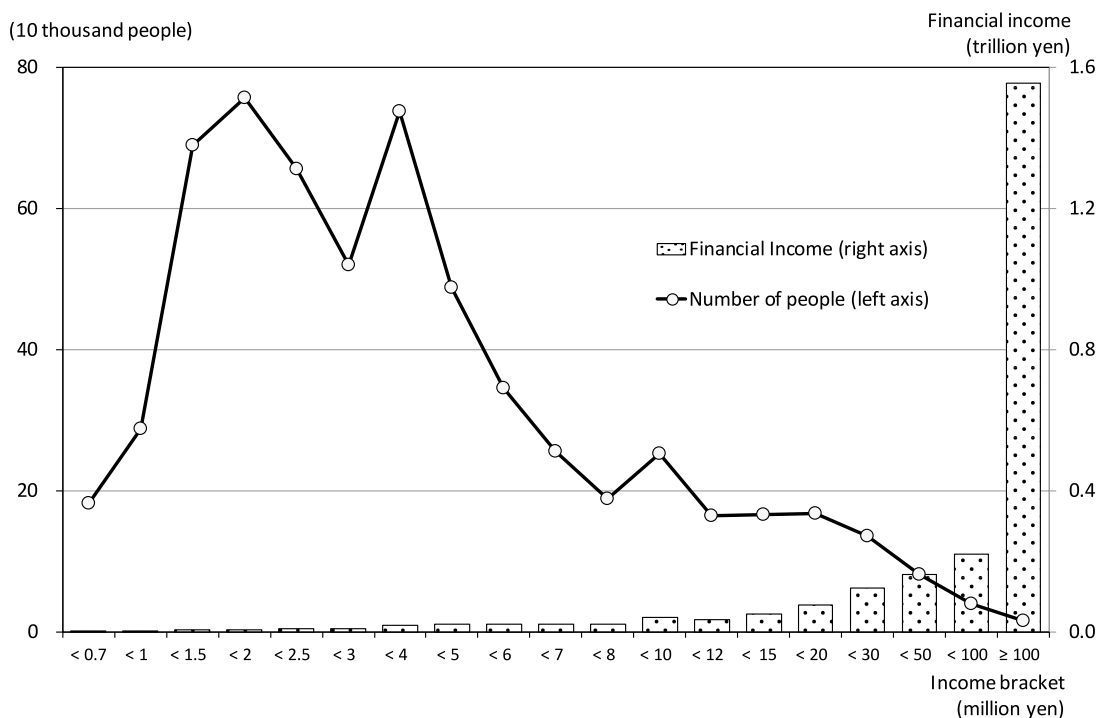
http://www.mof.go.jp/tax_policy/summary/financial_securities/kabu04.htm (in Japanese).

¹⁹ This rate is subject to reevaluation as a special income tax; the actual tax rate is 20.315% until 2037.

tal income, but for incomes above 100 million yen, the proportion of financial income increases dramatically. Thus, the rate of the income tax burden for incomes above 100 million yen decreases as the level of income increases. Figure 19 indicates that most of the financial income is earned by a very small portion of the population belonging to the high-income bracket (over 100 million yen). Figure 20 depicts a Lorenz curve for total income (salary income, etc., plus financial income) as well as for financial income. The significantly bent Lorenz curve for financial income at the bottom right indicates that income is concentrated in the hands of a small number of people, and compared with total income, financial income is unevenly distributed.

Next, we turn to examining the system of social insurance premiums. Figure 21 indicates that if we consider the rate of the tax and social insurance premium burden, the income tax and residential tax are progressive. However, health insurance and nursing-care insurance (increasing payout is expected particularly for social insurance) have a regressive mechanism. This is because the head-count element of the fixed portion of the social insurance premium weakens the progressiveness of the taxation system. This regressive element inherent in the calculation of social insurance premiums diminishes the progressiveness of income or residential taxation, thus, the already low overall redistribution effect of taxation

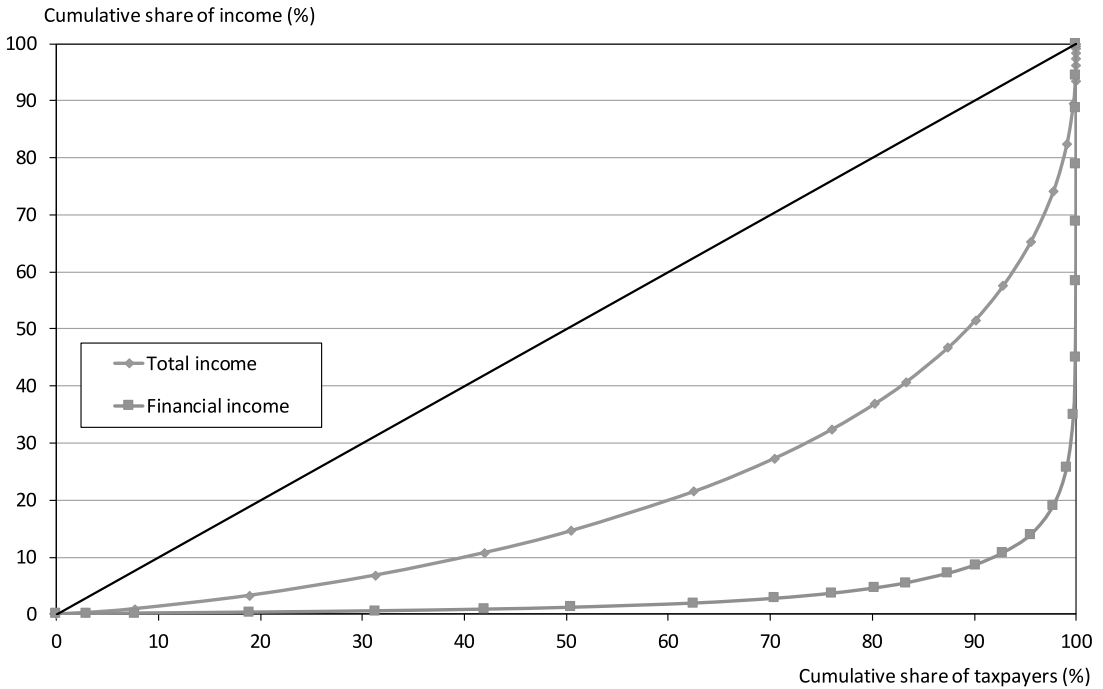
Figure 19. Financial income of reporting tax payers per income bracket (2014)



Note: Financial income equals received interest, dividends, capital gain from stocks, and similar income from financial assets.

Source: Authors; based on data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014).

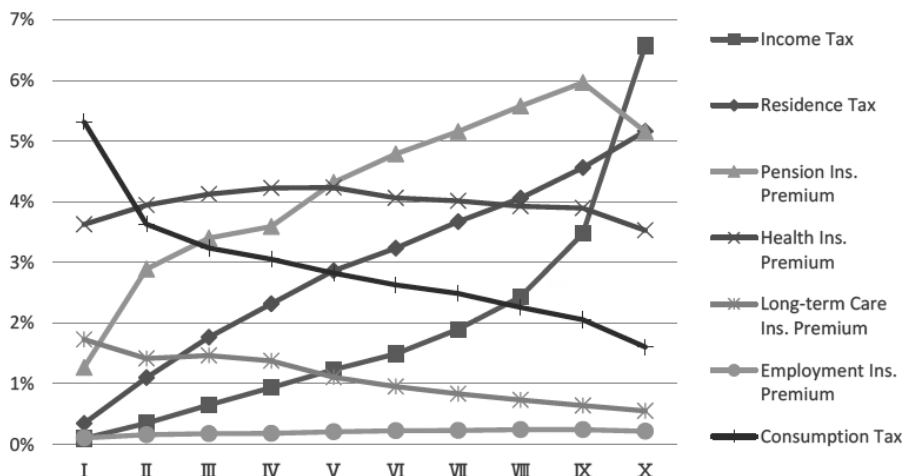
Figure 20. Lorenz curve of total income and financial income of reporting tax payers (2014)



Note: Financial income equals received interest, dividends, capital gain from stocks, and similar income from financial assets.

Source: Authors; based on data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014).

Figure 21. Tax/social insurance premium burden rate (per income bracket, 2009)



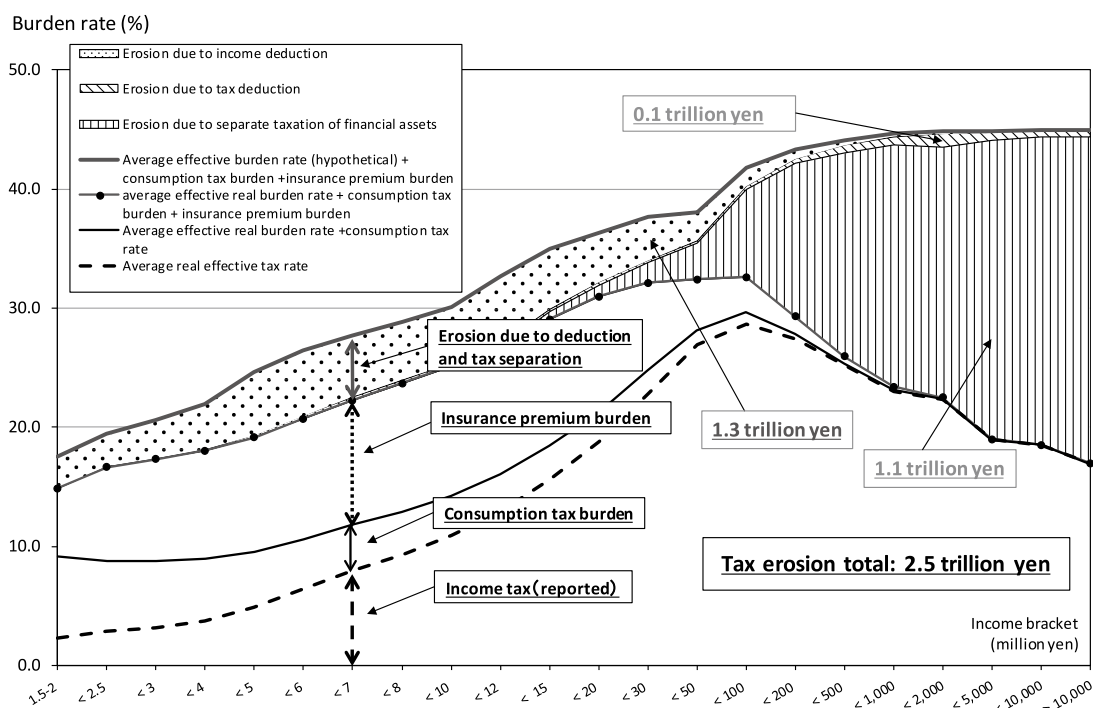
Note: The burden rate (y-axis) is plotted against income. The income brackets (x-axis) are determined by equivalence income deciles (where equivalence income = initial household income before any deductions / $\sqrt{\text{the number of household members}}$).

Source: Ohno and Kodama (2017), p. 22.

is further reduced.

Taking the above into consideration, we measure income tax erosion as in Ishi (1979) and perform a micro-simulation to obtain a rate reflecting a new consumption tax and social insurance premium burden. We present the results in Figure 22, plotting the overall burden of taxation and social insurance premiums against income brackets. Although several studies used individual data²⁰, it has been pointed out that calculating the burden of taxation and social insurance premiums is hindered by the characteristics of individual data – the limited availability of information on the high-income bracket. Thus, we use data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014) and focus on the tax burden of the high-income bracket population, as well as on the income deduction, tax deduction and tax erosion due to the separate taxation of financial assets. The x-axis in Figure

Figure 22. Taxation/social insurance premium burden per income bracket



Note 1: The average effective burden rate of reported income tax is determined from data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014).

Note 2: The burden rate of insurance premiums and consumption tax is calculated by applying the aggregate data as of November 2009 to the individual data from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communication, 2009) and calculating the average burden rate for each income bracket. As for the insurance premiums and consumption tax for the income brackets of over 100 million yen, we use fixed values that are available for the income bracket of 50-100 million yen.

Source: Authors; based on data from the Sample Survey on Self-Assessed Income Taxes (National Tax Agency, 2014) and the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communication, 2009).

²⁰ See, for example, Tajika and Yashio (2008), Tanaka et al. (2013), and Ohno and Kodama (2017).

22 plots the income level, and y-axis the burden rate, calculated as the ratio of the burden's amount to the total income. The dashed line at the bottom plots the real income tax burden rate based on self-assessment (average effective burden rate in real terms).²¹ The burden rate (average real effective burden rate + consumption tax burden) calculated via a micro-simulation using individual data from the 2009 National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communication, 2009) is depicted by a solid line. A dotted line shows the burden rate that incorporates the social insurance premium (average real effective burden rate + consumption tax burden + insurance premium burden). The flattening of the three lines (dashed, solid, and dotted), suggests that the regressive effect observed for the burden rate of consumption taxes and social insurance premiums weakens the progressiveness of the tax burden rate overall. Further, the thick line on the top in Figure 22 plots the burden rate calculated by directly multiplying the progressive tax rate (equivalent to the rate of the wage income tax) with the total amount of income (hypothetical average effective burden + consumption tax burden + insurance premium burden). The shaded part between the thick and the dotted line indicates the tax erosion arising from income deduction, tax deduction, and separate taxation of financial assets.²² Our calculations show that the erosion amounts to 1.3 trillion yen from income deduction, 0.1 trillion from tax deduction, and 1.1 trillion yen from the separate taxation of financial assets, which amounts to 2.5 trillion yen overall²³. However, as the Sample Survey of Self-Assessed Income Taxes by the National Tax Agency is a sample survey targeting self-assessment taxpayers, it does not include data on withholding income tax, which is the main source of income tax revenue. Therefore, if cases such as that of labor income earners who do not declare (including those with an annual labor income below 20 million yen) are not accounted for, we might be underestimating the erosion of tax revenue.²⁴

IV. Conclusion

This article provided the overview of the academic trends in the discussion of inequality and redistribution from the perspective of human capital accumulation, generated policy implication for Japan (Section II), and investigated the current situation of inequality and redistribution in Japan from the household income and expense perspectives (Section III).

The traditional argument put forth in academic discussions on inequality and redistribu-

²¹ Average effective burden rate (real) = (reported tax payment + tax withheld at source) ÷ tax withheld.

²² First, the difference between taxes based on the average effective burden rate (hypothetical) and taxes based on the average effective burden rate (real) is calculated (1). Then, the erosion from income deduction and tax deduction are calculated with data from the Sample Survey for Self-Assessment Income Tax (National Tax Agency, 2014) (2). The difference (1)–(2) is called erosion from separate taxation of financial assets etc.

²³ Income tax can be roughly divided into self-assessed income tax and withholding income tax. According to the Statistical Annual Report by Japan's National Tax Agency, of the income tax revenues (general accounts) in FY 2015, the self-assessed income tax was 3,034.0 billion yen and the withholding income tax was 14,773.2 billion yen.

²⁴ To indicate this quantitatively, individual data from the National Survey of Family Income and Expenditure (Ministry of Internal Affairs and Communication, 2009) can be used to estimate through micro-simulation the income tax/consumption tax/insurance premium burden rate and erosion, including that of salaried employees who do not report. Figari et al. (2015), among others, is an example of an analysis using micro-simulation.

tion posits a trade-off relationship between income redistribution and economic growth. However, more recently it has been argued that they are compatible and mutually complementary; inequality may negatively impact economic growth, or redistribution may positively impact economic growth. Particularly, it points out to the importance of redistribution policy that promotes accumulating human capital.

In terms of inequality and redistribution in Japan, the majority of benefits to household are directed towards senior citizens and less towards building human capital. Further, low-income households spend less on education in both relative and absolute terms. Education expenses of households without full-time employment are even lower. Considering household expenditure, the impact of redistribution among income brackets is diminished due to wage deduction, regressive social insurance premiums, and taxation of financial income.

All in all, from the point of view of household income, it is important to consider redistribution methods that—in line with implications from the related academic discussion—promote human capital accumulation. From the point of view of household expenses, a taxation/social insurance premium regime should promote effective redistribution. When examining the burden of taxation/social insurance premiums, including taxation on assets, and concrete policies that promote human capital accumulation, considerations such as balancing benefits and costs throughout different phases of life would necessarily enrich our study. We leave these considerations for future research.

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