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Distributive Impact of Low-Income Support Measures in Japan

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Abstract

Population decline together with rapid aging has a strong cost push pressure on social security systems in Japan. Effective measures to support low-income families are quite important to mitigate income inequality and to overcome low fertility in Japan. Using the micro-data of the Basic Household Survey 2010, we analyse various measures to support low income families through various simulations concerning child allowance, social security contributions, and income taxes. Based on the simulation results, we discussed distributive impact of such measures and their policy implications.

Keywords

Income Redistribution, Low-Income Support Measures, Equivalised Disposable Income, Gini Coefficient, Relative Poverty Rate

1. Introduction

The problems caused by aging of the population and weak economic growth are most keen concerns in Japan today. The total population peaked at 127.7 million in 2005-2007, and has since begun to decline. According to the latest population projection published in January 2012, the total population will be between 80 and 96 million and the proportion of those who are 65 years old or over to the total population will be around 40 percent in 2060. Japan has been suffering from a high public financial deficit and deteriorated income redistribution through taxes and social security systems. On top of these, population decline together with rapid aging has strong cost push pressure on social security systems in Japan.

Until the 1970s, Japanese people considered themselves to be living in an equal so-

ciety. However, the issue of income inequality has emerged since the 1980s. Today, one out of six children lives in poverty in Japan, and it has become a priority issue to reduce the relative poverty rate among children. The function of income redistribution through tax and social security may not be strong enough to mitigate growing wage differentials. Political discontent has been strengthened in recent years, due to the perception that income inequality has been increasing.

Under these circumstances, it has become quite important to mitigate income inequality and to overcome low fertility through support of child rearing families in Japan. In order to fulfil both purposes, it is effective to support low-income households with children. Using the micro data of the Basic Household Survey 2010, this paper analyzes various measures to support low income families through various simulations concerning structural changes on contributions and benefits. The following are the main results from the simulations:

-Child benefits had a remarkable effect in reducing the Gini coefficient of working-age households with children, if they are provided in a redistributive manner. However, the present Japanese child benefit since 2012 is not quite effective in supporting child-rearing families.

-The policy of first increasing social security contributions (SSC) across-the-board, then reducing social security contributions of low-income households was positive for social insurance finance, and still contributed to reduce income inequality.

-The policy of first increasing income tax across-the-board, then providing a refundable tax credit improved the financial position of single/couple elderly households, and reduced the Gini coefficient of the total households remarkably.

-A combination of SSC reduction for low-income households and refundable tax credit was quite attractive, showing remarkable improvement in the Gini coefficient with small policy cost.

2. Data and Method

In this paper, we used micro-data from the Basic Household Survey conducted by the Ministry of Health, Labour and Welfare in 2010[1]. Starting from market income[2], gross income is the sum of market income and social security benefits, and disposable income is obtained by deducting direct taxes and social security contributions from gross income. In this paper, only cash benefits are included in the social security benefits[3]. Concerning tax, only direct taxes are considered in the survey[4], and the employers' part

[1]The data used in this paper were made available to the members of a project team organized by the National Institute of Population and Social Security Research.

[2]Market income is the sum of 1) wages and salaries, 2) self-employed income, 3) asset income, 4) occupational pensions and retirement allowance from companies, and 5) private remittance received, such as payment from life insurance or other insurance. Lump-sum income is divided by 10 when and only when calculating Gini coefficients, in order to eliminate arbitrary fluctuations of the results.

[3]Health services share a majority of in-kind benefits, and the reliability of the data for health services is much lower than that for cash benefits. Public pension benefits, child allowances and public assistance are included, among others, in cash benefits.

[4]Direct taxes included in the survey are national as well as local income taxes, immobile property tax, and automobile tax.

of social security contributions is not included. Annual income for the previous year is reported in the survey, but in this paper we refer to the survey year.

The following equivalence scale was used in adjusting for family size and the age of children: first adult (18+) = 1.0; second adult = 0.7; additional adults and children (0 - 17) = 0.5. Equivalised income is the income-per-adult equivalent. It is obtained by dividing the household's total income by the number of adult equivalents in the household. All members of a household were assigned the same equivalised income. Equivalised disposable income was primary used, and the Gini coefficients calculated based on both household data and individual data are used as a summary measure of income inequality in this paper.

Two different classifications of households, 1) and 2) stated below, were used in this paper.

1) By household structure: Single household, Couple-only household, Couple with children household, Lone parent household, Three generation household, and Others.

This classification is used by the Basic Household Survey.

2) By household type:

-Working-age households: those households with a household head aged between 20 and 59, and nobody is receiving public pension benefits;

-Transition households: those households with a household head aged between 60 and 69;

-Households with elderly person(s) aged 70+: those households with an elderly member aged 70 or over.

Working-age households were classified into two groups, namely with and without children aged less than 18 years old. Transition households were classified into two groups, namely single/couple-only households and the other co-resident households. Households with elderly person(s) aged 70+ were also classified into two groups, namely single and/or couple-only households (single/couple elderly) and the other co-resident households.

3. Income Distribution in Japan Based on the 2010 Basic Household Survey

3.1. Gini Coefficient of Total Households/Population

Average equivalised disposable income for the total households was 2164 thousand yen, and the Gini coefficient of equivalised disposable income was 0.341 (Table 1). The situation of working-age households as a whole looked like total households. However, average equivalised disposable income and its Gini coefficient for working-age households with children was 1949 thousand yen and 0.306, compared to 2547 thousand yen and 0.346 for working-age households without children respectively. These two groups were quite different in terms of average income level and income distribution. Average equivalised disposable income for single/couple elderly was 1757 thousand yen and its Gini coefficient was 0.310.

Average equivalised disposable income for the total population was 2169 thousand

yen, and its Gini coefficient was 0.329 (Table 1). Gini coefficient was low for age groups 26 - 39 (0.305) and 0 - 17 (0.309), and high for age groups 85+ (0.353) and 18 - 25 (0.344). Average equivalised disposable income for age group 18 - 21 was lowest next to that for age group 0 - 17, and its Gini coefficient was highest next to that for age group 85+. Average equivalised disposable income was low for the younger generation including university students, and this fact has an important implication for Japan.

3.2. Relative Poverty Rate

The relative poverty rate is defined as the proportion of those households/individuals whose equivalised disposable income is less than 50 percent of the median of the total households. Table 2 shows the relative poverty rate of individuals by age group and household structure. The relative poverty rate for the total population was 14.7 percent, and it was the highest for age group 85+ and the lowest for age group 26 - 39.

Looking at household structure, the relative poverty rate of couple-only households

Table 1. Equivalised disposable income and Gini coefficient by household type and age group: 2010.

By household type			By individual age group		
Household type	Equivalised disposable income (1000 yen)	Gini coefficient	Age group	Equivalised disposable income (1000 yen)	Gini coefficient
Total	2164	0.341	Total	2169	0.329
Working-age households	2276	0.340	0 - 17	1872	0.309
With children	1949	0.306	18 - 25	2042	0.344
Without children	2547	0.346	26 - 39	2158	0.305
Transition households	2214	0.349	40 - 59	2514	0.332
Single/couple	2228	0.357	60 - 69	2241	0.339
Co-resident	2197	0.338	70 - 84	1967	0.315
Households with elderly	1957	0.329	85+	1989	0.353
Single/couple elderly	1757	0.310	(re)18 - 21	1969	0.351
Co-resident elderly	2168	0.333	(re)70+	1971	0.321

Source: Author's calculation using the Basic Household Survey 2010.

Table 2. Relative poverty rate of individuals by age group and household structure: 2010 (in %).

Age group	Total	Single	Couple only	Couple with children	Lone parent	Three generation	Others
Total	14.7	22.4	10.8	12.3	28.9	12.8	20.3
0 - 17	17.6	-	-	14.7	42.0	15.1	43.3
18 - 25	19.2	38.2	4.8	12.5	26.4	12.1	22.5
26 - 39	12.2	7.2	6.8	12.5	23.7	12.1	19.2
40 - 59	12.5	13.8	9.3	9.7	26.9	12.2	19.9
60 - 69	13.6	22.9	10.4	10.8	23.1	14.2	19.0
70 - 84	16.2	28.5	13.6	12.3	23.5	11.4	16.0
85+	20.0	34.6	18.8	18.7	37.8	12.2	14.6
18 - 21	21.8	50.4	-	11.8	29.1	12.9	30.0
70+	16.9	29.6	13.9	12.6	26.9	11.6	15.5

Source: Author's calculation using the Basic Household Survey 2010.

was the lowest (10.8 percent), and that of lone parent households was the highest (28.9 percent). Three generation households showed the most stable rates across all age groups. Children and the elderly living in lone parent households faced the highest poverty rate of 42 and 38 percent respectively.

4. Low-Income Support Measures: Simulations

4.1. Simulation Cases

In order to evaluate the effects of policies to support low-income households, we conducted the following simulations. In these simulations, the direct taxes and social security contributions as well as child benefit (B3) of each household were modified, and equivalised disposable income was then recalculated accordingly.

Sim.1: Put B3 = 0, then provide child benefit of 180 thousand yen per year per child under 15 years old in all households.

Sim.1a: Put B3 = 0, then provide child benefit of 360 thousand yen per year per child under 18 years old in first to third decile households and 180 thousand yen per year per child under 18 years old in fourth to fifth decile households.

Sim.1b: Put B3 = 0, then provide child benefit of 180 thousand yen per year per child aged 0 - 2 and 120 thousand yen per year per child aged 3 - 14 (180 thousand yen if third child or beyond aged 3 - 11) in first to ninth decile households.

Sim.2: Increase social security contributions (health, pension and long-term care contributions) by 10 percent across-the-board, then reduce social security contributions of those households whose equivalised disposable income are between 65 and 80 percent of the median of the total households by one third, between 50 and 65 percent by two thirds, and below 50 percent totally (SSC reduction I).

Sim.2a: Increase social security contributions by 20 percent across-the-board, then reduce social security contributions of those households whose equivalised disposable income are between 75 and 90 percent of the median of the total households by one third, between 60 and 75 percent by two thirds, and below 60 percent totally (SSC reduction II).

Sim.2b: Increase social security contributions by 30 percent across-the-board, then apply SSC reduction II.

Sim.3: Increase income tax by 10 percent across-the-board, then provide refundable tax credit of 50 thousand yen per year per household.

Sim.3a: Increase income tax by 50 percent across-the-board, then provide refundable tax credit of 150 thousand yen per year per household.

Sim.3b: Increase income tax by 100 percent across-the-board, then provide refundable tax credit of 250 thousand yen per year per household.

Sim.4 = Sim.1a + Sim.2a

Sim.5 = Sim.2b + Sim.3a

Sim.1 represents the case of a child benefit of 15 thousand yen per month per child. In Sim.1a, a child benefit is provided to children under 18 years old living in lower half households with more redistributive manner. Sim.1b traces the actual child benefit

since 2012 in Japan.

As social security contributions lag behind benefits, we first increased social security contributions across-the-board. Then we applied SSC reduction for low income households in Sim.2, Sim.2a, and Sim.2b. In the cases of all three refundable tax credits, we first increased income tax across-the-board. Two cases, Sim.4 and Sim.5, are prepared in order to show the effect of combining a different sort of measures.

4.2. Simulation Results

Table 3 shows average equivalised disposable income and its Gini coefficient of total households, working-age households, and single/couple elderly households for all simulation cases including the original case.

Average equivalised disposable income of the total households was highest in Sim.3b and lowest in Sim.2b (Figure 1). Most improvement in the Gini coefficient was found in Sim.3b and Sim.5, and Sim.4 followed. Compared to the original results, there was little improvement in income inequality in Sim.1 and Sim.1b.

Now we focus on the results concerning working-age households. Some improvement in Gini coefficient was found in Sim.1 (from 0.306 to 0.299), and a remarkable improvement was found in Sim.1a for working-age households with children. However, there was little improvement in Sim.1b, which means that the present Japanese child benefit since 2012 is not quite effective in supporting child-rearing families. Regarding SSC reduction cases as well as refundable tax credit cases, the results of working-age households were more or less same as the results of the total households.

In Sim.3b, the Gini coefficient of working-age households improved remarkably

Table 3. Simulation results: 2010.

	Equivalised disposable income (10,000 yen)					Gini coefficient				
	Total households	Working-age households			Single/couple elderly	Total households	Working-age households			Single/couple elderly
		Total	With children	Without children			Total	With children	Without children	
Original	216.4	227.6	194.9	254.7	175.7	0.341	0.340	0.306	0.346	0.310
Sim.1	217.9	230.2	200.9	254.5	175.7	0.339	0.335	0.299	0.346	0.311
Sim.1a	218.3	230.8	202.1	254.5	175.7	0.332	0.325	0.270	0.346	0.310
Sim.1b	217.2	228.9	198.0	254.5	175.7	0.340	0.337	0.303	0.346	0.310
Sim.2	216.2	226.9	195.3	253.2	176.3	0.331	0.331	0.294	0.339	0.302
Sim.2a	215.2	225.6	194.8	251.1	176.1	0.327	0.326	0.289	0.335	0.299
Sim.2b	213.3	223.3	193.1	248.4	175.3	0.325	0.324	0.287	0.334	0.298
Sim.3	218.5	229.4	196.1	257.1	179.2	0.334	0.334	0.302	0.339	0.302
Sim.3a	221.1	231.1	196.8	259.5	185.4	0.319	0.320	0.289	0.322	0.285
Sim.3b	222.9	231.7	196.7	260.6	191.4	0.304	0.305	0.276	0.305	0.269
Sim.4	216.9	228.4	201.0	251.0	176.2	0.319	0.313	0.256	0.335	0.299
Sim.5	218.0	226.8	195.0	253.2	185.1	0.304	0.304	0.270	0.310	0.273

Note: See text for each simulation case.

from 0.340 to 0.305, and that of single/couple elderly households from 0.310 to 0.269. The increased rate of average equivalised disposable income from the original case was quite different by household type: 3.0 percent for the total households, 0.9 percent for working-age households with children, 2.3 percent for working-age households without children, and 8.9 percent for single/couple elderly households.

Figure 2 shows the relative poverty rate of individuals aged 0 - 17 and 18 - 25 by household structure for each simulation case. Only in Sim.1a and Sim.4, the relative

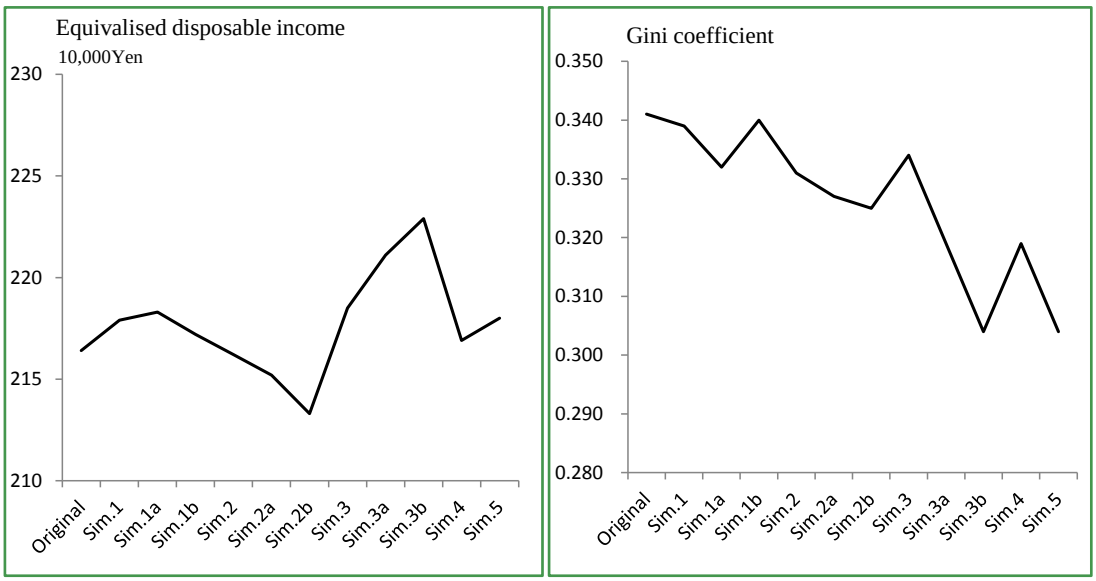

Figure 1. Equivalised disposable income and Gini coefficient by simulation case: Total households.

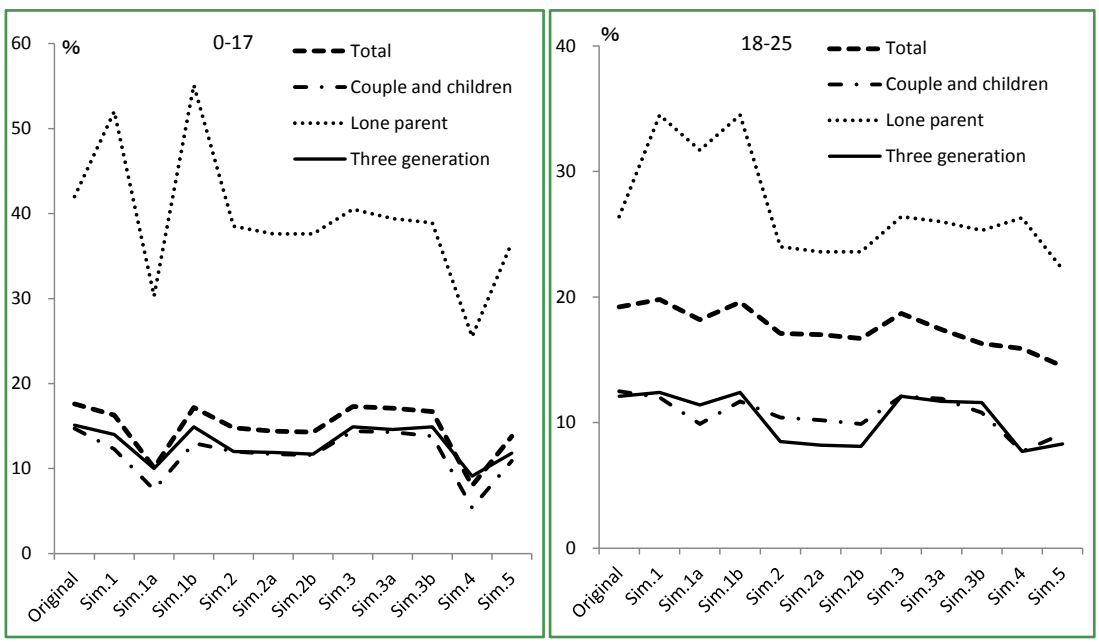

Figure 2. Relative poverty rate of individuals aged 0 - 17 and 18 - 25 by household structure for each simulation case.

poverty rate of individuals aged 0 - 17 living in lone parent households was below 30 percent. The relative poverty rate of individuals aged 18 - 25 living in lone parent households increased from the original case in Sim.1, Sim.1a, and Sim.1b, because they are not eligible for the child benefit. The relative poverty rate of individuals aged 0 - 25 living in couple and children households and three generation households remained at a low level for each simulation case.

The relative poverty rate of individuals aged 0 - 17 showed the same pattern as the total population. Sim.3b had little effect in reducing the relative poverty rate of individuals aged 0 - 17 living in lone parent households, however the elderly living in single households were very much benefited.

Table 4 showed policy cost for each simulation case. Policy cost was the sum of increases in benefits and national subsidies minus the sum of increases in social security contributions and income taxes. In the case of refundable tax credit, the tax reduction part is assigned as the increase in national subsidies, and the refunded part as the increase in benefits. The "policy cost" column in Table 4 shows the total amount of policy cost for each simulation. The policy cost is also shown as a percentage of public pension benefits in Table 4, in order to interpret it as an actual cost in Japan[5].

The policy cost of Sim.1b shows that the present child benefit since FY2012 is certainly improved compared to that until FY2009. However, unfortunately Sim.1b increased average equivalised disposable income of working-age households with children only 1.6 percent, and only improved its Gini coefficient from 0.306 to 0.303. In Sim.2, the amount increased in social security contributions corresponded to the amount of SSC reduction for low-income households, namely no additional cost required, but the Gini coefficient of total households decreased from 0.341 to 0.331. In Sim.3a and Sim.3b, the amount increased in income taxes was larger than the tax reduction part, but the total policy cost became relatively high because the refunded part

Table 4. Policy cost for each simulation case (in billion yen).

	Increase in benefits	Increase in national subsidy	Increase in contributions	Increase in income taxes	Policy cost	Percentage to public pension benefits (%)
Sim.1	2.3				2.3	5.3
Sim.1a	2.7				2.7	6.3
Sim.1b	1.2				1.2	2.8
Sim.2		2.2	2.3		−0.1	−0.3
Sim.2a		3.4	4.5		−1.1	−2.6
Sim.2b		3.8	6.8		−3.0	−7.1
Sim.3	1.1	1.5		0.9	1.7	3.9
Sim.3a	4.0	3.6		4.3	3.3	7.8
Sim.3b	7.1	5.6		8.7	4.1	9.5
Sim.4					1.3	2.9
Sim.5					0.3	0.7

[5]The amount of public pension benefits in FY2014 was about 50 trillion yen.

almost corresponded to the amount increased in income taxes.

Figure 3 plots policy cost as a percentage of public pension benefits on the X axis and the Gini coefficient of the total households on the Y axis for each simulation case. Sim.5 and Sim.3b were highly effective in reducing income inequality of the total households, and Sim.4 and Sim.5 which combined a different sort of measures were effective in reducing income inequality with less cost. Sim.2, Sim.2a, and Sim.2b were positive for social insurance finance, and still contributed to reduce income inequality.

5. Discussion

Recently, in connection with child poverty, relative poverty rate is often used in Japan, which shows rather similar trends with Gini coefficient. Children in low-income households tend to have little chance to develop their abilities or to find good employment. Consequently, they tend to stay in poverty throughout their lives (chain of poverty). In order to eliminate child poverty, namely to provide education, balanced nutrition, necessary medical services, etc. to all children, it is necessary to eliminate poverty households themselves. Various safety net programs provide important assistance to struggling families, help ensure that low-income individuals have access to affordable health care, and provide increased educational opportunities to low-income students. These efforts reduce poverty. Once an equal society, Japan has become a quite unequal society among OECD countries. In particular, the relative poverty rate of children living in lone parent households is extremely high compared to the international standard,

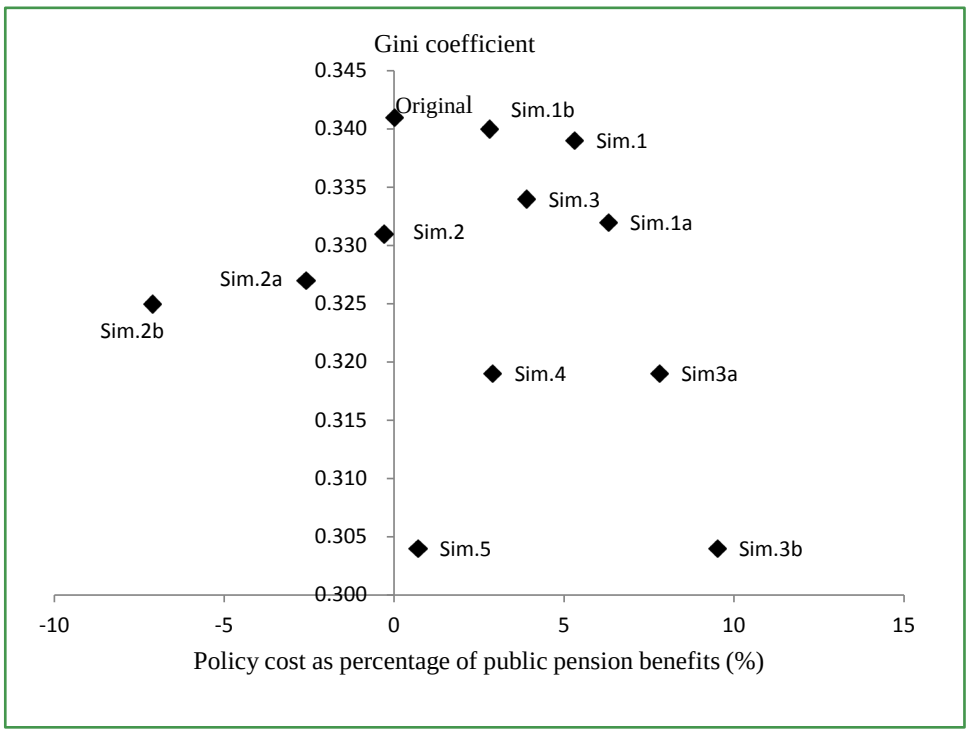

Figure 3. Policy cost (X axis) and Gini coefficient of the total households (Y axis) for each simulation case: 2010.

and requires swift correction.

The Gini coefficient of market income for the total households increases naturally due to the increase in the number of retired elderly households. Therefore, what matters is the Gini coefficient of market income for working-age households, or the Gini coefficient of disposable income for the total households. The Gini coefficient of equivalised disposable income for the total households has increased in 1980s in Japan. This trend of increase in income inequality is mainly explained by 1) the growing market income inequality among working-age households, and 2) deterioration of income redistribution policies seen as the declining share of disposable income for the low income class and the regressive nature of social security contributions [1].

In most OECD countries, the aging of the population affects income inequality through the following two separate channels [2]:

-First, the elderly have a lower disposable income than the working-age population; when the share of the elderly in the total population rises, inequality will tend to widen because of larger inter-group income differences.

-The second effect relates to how income inequality among the elderly compares to that of the total population. In most OECD countries, disposable income is more equally distributed among the elderly than in the working-age population, and this dampens the increase in aggregate inequality.

In Japan, however, the situation is somewhat different because of high rates of co-residency and labor force participation among the elderly, and the equivalised disposable income of the elderly population is lower than that of the working-age population, while the income inequality is higher [1]. Market income inequality in Japan is mainly explained by the aging of the population and changes in household structures, which was analyzed by Oshio [3], Otake [4], etc. The rising share of non-regular workers, such as young people on temporary contracts and married women working part-time, has certainly had a big influence on Japanese market income distribution. Non-regular workers are not only paid less, but they also receive less fringe benefit coverage than regular workers. Although the co-residency rate among the elderly is declining, living arrangements and the pooling of incomes among household members still play an important role in risk adjustment in Japan [1].

Using the micro data of the Basic Household Survey 2010, we analyzed equivalised disposable income for the total households as well as total population, and we conducted various simulations concerning low-income support measures. The following are among the main findings:

-Average equivalised disposable income for the total households was 2164 thousand yen, and its Gini coefficient was 0.341. Average equivalised disposable income for the total population was 2169 thousand yen, and its Gini coefficient was 0.329.

-Average equivalised disposable income and its Gini coefficient for working-age households with children was 1949 thousand yen and 0.306, compared to 2547 yen and 0.346 for working-age households without children respectively.

-The relative poverty rate for the total population was 14.7 percent, and it was high-

est for the 85+ age group and the lowest for age group 26 - 39.

-Children and the elderly living in lone parent households faced the highest relative poverty rate of 42 and 38 percent respectively.

-Child benefits have a remarkable effect in reducing the Gini coefficient of working-age households with children, if they are provided in a redistributive manner. However, the present Japanese child benefit since 2012 is not quite effective in supporting child-rearing families.

-The policy of first increasing social security contributions (health, pension and long-term care contributions) across-the-board, then reducing social security contributions of low-income households was positive for social insurance finance, and still contributed to reduce income inequality.

-The policy of first increasing income tax across-the-board, then providing a refundable tax credit improved the financial position of single/couple elderly households, and reduced the Gini coefficient of the total households remarkably.

-A combination of child benefits and SSC reduction for low-income households (Sim.4) and a combination of SSC reduction for low-income households and a refundable tax credit (Sim.5) were effective in reducing income inequality with less cost. In particular, Sim.5 was quite attractive, showing remarkable improvement in the Gini coefficient with small policy cost.

Viewed by equivalised disposable income, Japanese income inequality is expanding, and income redistribution through tax and social security which is supposed to mitigate growing wage differentials may not be performing well enough. On top of this problem, social security finance falls short of its benefits. Japan spends less on social protection than other OECD countries, and its spending is heavily tilted toward old-age pensions and health care, which disproportionately benefit the elderly population [5]. Therefore, the Japanese welfare system has been biased toward the elderly and less redistributive toward the poor.

Compared to the former child benefit until FY2009, the present Japanese child benefit since FY2012 increased average equivalised disposable income of working-age households with children by only 1.6 percent, and improved its Gini coefficient from 0.306 to 0.303. Therefore, we conclude that the present Japanese child benefit since 2012 is not quite effective in supporting child-rearing families. The policy costs of Sim.1 and Sim.1a were similar, but by providing the child benefit in a more redistributive manner a remarkable improvement in Gini coefficient was found in Sim.1a for working-age households with children.

Growing market income inequality of the working-age population and the weakened function of income redistribution through taxes and social security are considered to be the major reasons for Japan's inequality in disposable income. Among the working-age population, equivalised disposable income for child-rearing households was lower than that for non-child-rearing households. Support for child-rearing households through tax/contribution breaks and/or social security benefits are not enough in Japan. Benefits for families (total of benefits in cash, benefits in kind, and benefits through the tax sys-

tem) as a percentage of GDP were 4.3 percent in the UK, 3.6 percent in Sweden and France, and 3.1 percent in Germany in 2011, but it was only 1.7 percent in Japan and 1.2 percent in the USA [6]. Family friendly income redistribution is not common in Japan, and consequently the Japanese effort to support child-rearing families is below one half of the Swedish or French level.

The budget squeeze facing many OECD governments makes it more important than ever to ensure that public spending delivers maximum benefits, strengthening the case for increasingly targeting payments on low-income families [7]. Social security contributions were regressive at the lowest income class, and it turned out to be a good choice to reduce social security contributions for low income households in order to reduce the relative poverty rate for children in Japan.

There has been growing discussion around the idea of changing the tax treatment of top earners, which has tended to become more generous since the 1980s, and even without increases to top rates of tax, there is room in many countries for scaling back some tax deductions and credits that tend to benefit higher earners disproportionately [7]. The introduction of the refundable tax credit had a very favorable effect on income distribution, suggesting stronger intervention is needed to realize a more equal society in Japan.

Figure 4 plots the relative poverty rate of the total population on the X axis and Gini coefficient of disposable income of the total households on the Y axis for ten countries.

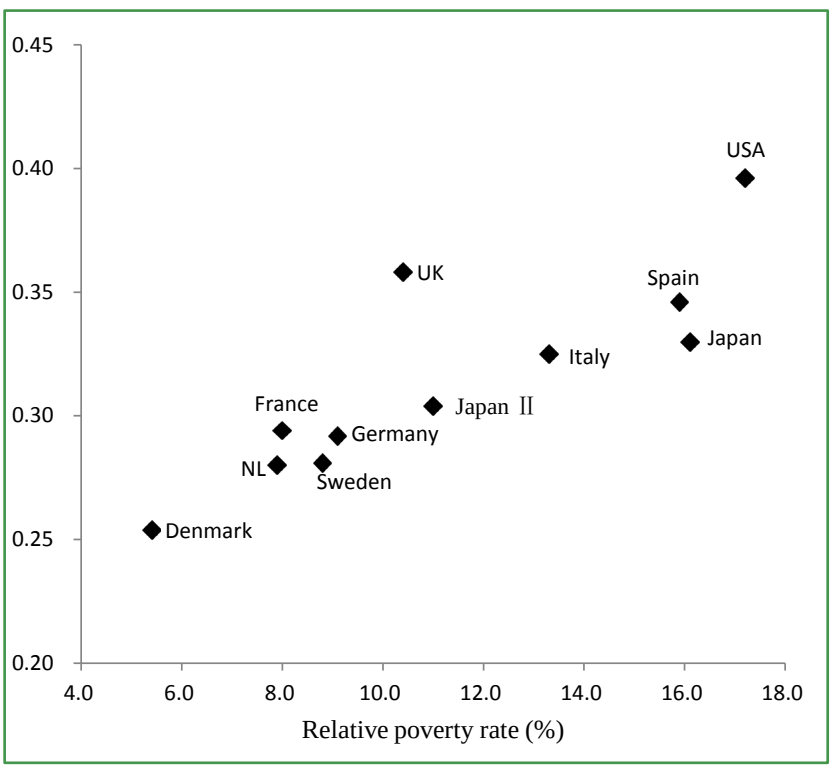

Figure 4. Relative poverty rate (X axis) and Gini coefficient of disposable income (Y axis) for ten developed countries: 2013. Note: Data are 2012 for Japan. Japan II is from Sim.5. Source: OECD income distribution database.

The result of Sim.5 is also included in the figure as Japan II for reference. Most countries except the UK and Japan are on or near the regression line. The Japanese relative poverty rate seems to be higher than the level as expected from its Gini coefficient, which suggests that redistribution policies are not quite effective to reduce poverty in Japan. Among Nordic welfare states, Denmark seems to be a more equal country than Sweden.

Among eleven simulations, Sim.5 showed remarkable improvement in Gini coefficient with small policy cost. However, Japan II in **Figure 4** does not reach the level of Germany, France, and Nordic welfare states yet.

Cingano [8] suggests that reducing inequality through tax and transfer policies does not harm growth, so long as the chosen policies are well designed and implemented. Government transfers, cash transfers as well as public services such as high-quality education or access to healthcare, have an important role to play in guaranteeing that low-income households do not fall further back in the income distribution. Many social policies are aimed at poverty alleviation. However, it is not just poverty (*i.e.* the incomes of the lowest 10 percent of the population) but the bottom 40 percent more generally including the vulnerable lower middle classes at risk of falling to poverty that inhibits growth [8].

6. Conclusion

Growing market income inequality of the working-age population and the weakened function of income redistribution through taxes and social security are considered to be major reasons for Japan's inequality in disposable income. The policy of first increasing social security contributions across-the-board, then reducing social security contributions of low-income households was positive for social insurance finance, and still contributed to reduce income inequality. The policy of first increasing income tax across-the-board, then providing a refundable tax credit reduced the Gini coefficient of the total households remarkably. A combination of these two policies was quite attractive, showing remarkable improvement in Gini coefficient with small policy cost.

References

[1] Fukawa, T. (2006) Income Distribution in Japan based on IRS 1987-2002. *The Japanese Journal of Social Security Policy*, **5**, 27-34.

[2] Förster, M. and Mira d'Ercole, M. (2005) Income Distribution and Poverty in OECD Countries in the Second Half of the 1990s. OECD Social, Employment and Migration Working Papers 22. https:/doi.org/10.1787/882106484586

[3] Oshio, T. (2006) Income Inequality and Redistribution Policies in Japan during the 1980s and 1990s. *Journal of Income Distribution*, **15**, 119-146.

[4] Otake, F. (2005) Inequality in Japan. Nihon Keizai Shinbunsha (in Japanese).

[5] Mira d'Ercole, M. (2006) Income Inequality and Poverty in OECD Countries: How Does Japan Compare? *The Japanese Journal of Social Security Policy*, **5**, 1-15.

[6] OECD (2016) OECD Family Database.

[7] OECD (2015) Income Inequality: The Gap between Rich and Poor.

[8] Cingano, F. (2014) Trends in Income Inequality and its Impact on Economic Growth. OECD Social, Employment and Migration Working Papers, No. 163. https:/doi.org/10.1787/5jxrjncwxv6j-en