

Financing social security in Japan

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Abstract

The scale of social security tends to increase with population aging, and government outlay on social security increases hand in hand with the increase in social expenditure. However, the scale of Japanese social expenditure is modest despite the quite high aging rate in Japan. It is biased towards age-related benefits, and family benefits as well as welfare benefits are lagging behind. Through a 12-country comparison, characteristics of Japanese social security finance were featured. Japanese social expenditure as a percent of GDP is larger than that of the UK or the USA if limited to public systems; however, if we compare social expenditure (Public + Private), Japan belongs to the lowest group together with Australia, Canada, and Spain among the 12 countries. Due to a low level of social expenditure (Total), enough resources are not provided to child-rearing support and welfare benefits, and the extension of unequal society is left unsolved in Japan. The share of social security in government expenditure for the general government was the highest in Japan, caused by the fact that the total expenditure (as a percent of GDP) of the general government was unreasonably low in Japan. Outlay for social security makes a commanding share of government expenditure in every developed country. In view of the high aging rate, Japanese social expenditure (Total) is disproportionally low, which suggests that necessary investment in supporting child-rearing, blocking the poverty chain, creating a flexible and fair labor market, correcting unreasonable differences, etc., is not properly enforced. As Japan is not well prepared for the aging and shrinking of the population, Japan should expand the preparation against foreseeable demographic changes.

Key words: population aging, social security (protection), social expenditure, safety net

Introduction

Since 2004, the Japanese population has been shrinking: it is expected to drop from 125 million in 2022 to 102 million by 2050. The consequences of the aging and shrinking population in Japan include economic crisis, budgetary challenges, pressure on job markets and depopulation of rural areas (D'Ambrogio, 2020). Japan is at the forefront of robot development to face a declining labour force and to take care of its elderly, but the government's efforts to address the demographic crisis have yet to succeed, and immigration has been limited (D'Ambrogio, 2020).

The aging and shrinking population have profound impacts on Japanese social security, namely public pension insurance, medical and long-term care services, family policy and various welfare services. The purpose of this paper is to reveal the status quo of financing social security in Japan among developed countries. Eleven countries are chosen to compare with Japan: Australia, Canada, Denmark, France, Germany, Italy, the Netherlands, Spain, Sweden, the UK, and the USA. The following is main findings from the comparison:

- Japanese social expenditure as a percent of GDP is larger than that of the UK or the USA if limited to public systems; however, if we compare social expenditure (Public + Private), Japan belongs to the lowest group together with Australia, Canada, and Spain among the 12 countries.
- Japan does not provide enough resources for family benefits, although its fertility is quite low.

- It is often discussed in Japan that the size of social security in the central government budget is disturbing for its financial stability. However, outlay for social security makes a commanding share of government expenditure in every developed country.

- Japan is not well prepared for the aging of the population, although Japan is already the front runner of aging.

This paper is structured as follows. The source of funds for social security in Japan was reviewed in Section 1, using national data for FY2019. The scale of social security was compared among the 12 countries in Section 2, using the OECD Social Expenditure Database. We reconfirmed that the outlay for social security makes a commanding share of government expenditure in every developed country in Section 3, and we discussed features of financing social security in Japan in Section 4.

1 Source of funds for social security in Japan

Table 1 shows the social security benefits by function and source of fund for them in Japan for FY2019. The total benefit amount was 123.9 trillion yen or 22.1% of GDP. The pension benefits were the largest item and the medical care costed the second. These two items amounted to 78% of the total social security benefits. The public pension, public medical insurance, and public long-term care (LTC) insurance for the elderly are universal and comprehensive in Japan. However, there are backward fields in Japanese social security. They are welfare services for the handicapped and low income persons, and family policy to support child-raising households. Public assistance is the last resort to save those who cannot be saved by preventive social security. However, the number of those who receive public assistance is about 1.6% of the total population, and the take-up rate of this program is low in Japan.

Contributions from employees (7.0% of GDP) as well as from employers (6.3% of GDP) and outlay from the central government (6.1% of GDP) were the main sources of revenue for social security. About one-fourth of public pension, medical care, and long-term care were financed by the central government.

Table 1 Source of funds for social security benefits in Japan: FY2019

Social security benefits by function		(In trillion Yen)						
		Public fund		Contribution		Asset income	Others	Total
		Central G.	R & L Gov	Employees	Employers			
Total	123.9	34.4	17.5	39.0	35.0	1.6	4.9	132.4
as % of GDP	22.1	6.1	3.1	7.0	6.3	0.3	0.9	23.7
Medical care	41.8	12.6	6.8	12.2	11.5	0.3	2.0	45.4
Work-related injury	0.9	0.0	0.0	0.0	0.9	0.1	0.2	1.3
Pension	55.0	12.6	0.6	21.2	20.4	1.2	1.4	57.4
Employment	1.5	0.0	0.0	0.4	0.8	0.0	0.6	1.9
Family	2.8	1.3	1.0	0.0	0.6	0.0	0.2	3.2
Long-term care	10.7	2.6	3.4	5.2	0.0	0.0	0.3	11.5
Welfare & others	11.2	5.2	5.7	0.0	0.7	0.0	0.1	11.7
Public assistance	3.6	2.7	0.9	0.0	0.0	0.0	0.0	3.6

Note: R & L Gov means regional and local governments.

Source: Prepared by the author based on IPSS (2021).

2 Scale of social security in the 12 countries

2.1 Social expenditure

OECD Social Expenditure Database (Note 1) is often used to compare the scale of social security with other countries. Among the 12 countries in Table 2, the Japanese aging rate (proportion of those who are 65 years old or over to the total population) is the highest, but the scale of the Japanese social expenditure is relatively small. The amounts of social expenditure account for a large part of GDP in many developed countries, but social expenditure (Public) as a percent of GDP varies widely from 29 percent in Denmark to less than 17 percent in Australia and the Netherlands. Japanese social expenditure (Public) was 22 percent of GDP, which was in the middle amongst the 12 countries.

Old age and Health were the largest items of social expenditure (Public), and interestingly enough the aging rate seems to have nothing to do with the health expenditure level. Table 2 suggests that Japanese social expenditure is very much biased towards the elderly. However, as a matter of fact, social expenditure directed towards the elderly was not high in Japan compared with the other developed countries.

In some countries such as the Netherland, the UK, and the USA, private arrangements are quite important in the fields of old age pension and health insurance. Therefore, the size of social expenditure (Public) must be interpreted taking social expenditure (Private) into consideration. It is important to remember that social expenditure is influenced by the age structure of the population, the level of unemployment, and the size and composition of households, and only direct benefits are included and all types of tax relief are not counted as social expenditure.

Table 2 Social Expenditure (SE) by branch in the 12 countries: Percent of GDP, 2017/18

	(In %)											
	AL	C	DK	F	G	I	J	NL	SP	SW	UK	US
Population (m)	25.7	37.9	5.8	67.3	83.2	59.6	125.3	17.4	47.3	10.3	67.2	332.6
Aging rate (%)	16.3	18.0	19.9	20.4	21.8	23.2	28.9	19.5	19.6	20.0	18.7	16.9
SE(Public)	16.7	18.0	29.2	31.1	25.4	27.6	22.3	16.6	23.9	26.0	20.5	18.2
Old Age	4.9	4.5	9.6	12.5	8.4	13.2	10.1	5.9	9.2	9.1	5.9	6.4
Survivors	0.1	0.3	0.0	1.6	1.8	2.5	1.2	0.1	2.2	0.3	0.0	0.6
Incapacity	2.2	0.7	4.9	1.7	2.3	1.8	1.1	2.9	2.4	3.8	1.9	1.0
Health	6.0	7.5	7.1	8.5	8.2	6.4	7.6	2.6	6.3	6.5	7.7	8.4
Family	2.1	1.6	3.4	2.9	2.3	2.0	1.6	1.5	1.2	3.4	3.2	0.6
Active labour	0.2	0.2	2.0	0.8	0.7	0.6	0.1	0.6	0.7	1.2	0.2	0.1
Unemployment	0.6	0.5	0.0	1.5	0.9	0.9	0.2	1.1	1.6	0.3	0.1	0.1
Housing	0.3	0.3	0.7	0.7	0.6	0.0	0.1	0.5	0.1	0.4	1.3	0.2
Others	0.3	2.3	1.5	0.9	0.3	0.3	0.4	1.4	0.2	1.1	0.1	0.7
SE(Private)	6.6	7.1	3.8	3.6	3.6	1.9	2.9	13.5	1.3	3.8	6.4	12.6
Old Age	5.0	5.5	2.1	0.3	0.8	1.1	2.5	4.6	0.3	3.1	5.2	5.4
Incapacity			0.4	1.1	1.6	0.2		1.6	0.1	0.5	0.6	0.2
Health	1.5	1.6	0.2	1.5	1.1	0.2	0.3	6.3	0.6	0.1	0.5	7.0
Others			0.9	0.7		0.3		1.0	0.2			
SE(Total)	23.3	25.1	33.0	34.7	29.0	29.5	25.2	30.1	25.2	29.8	26.9	30.8

Note 1: AL = Australia, C = Canada, DK = Denmark, F = France, G = Germany, I = Italy, J = Japan,

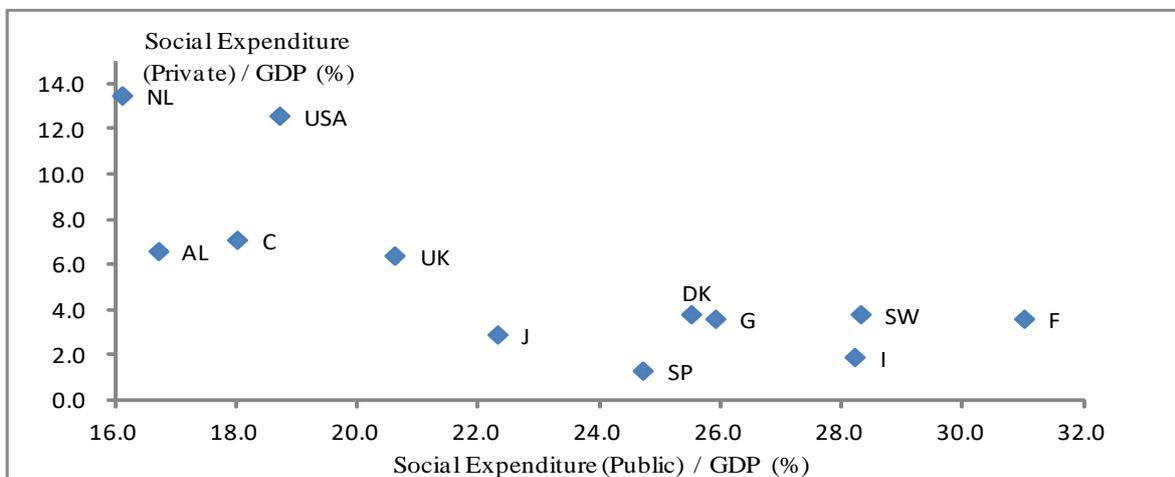
NL = Netherlands, SP = Spain, SW = Sweden, UK = United Kingdom, US = United States.

Note 2: Population and Aging rate are 2020 data.

Note 3: 2018 data are used for Canada, France and the USA.

Sources: OECD Health Statistics 2021, OECD Social Expenditure Database accessed in January 2022.

Figure 1 plots social expenditure (Public) on the X-axis and social expenditure (Private) on the Y-axis, both as percents of GDP, in the 12 countries. Twelve countries can be classified into two groups: one where social expenditure (Public) is dominant and the other where social expenditure (Private) is important.

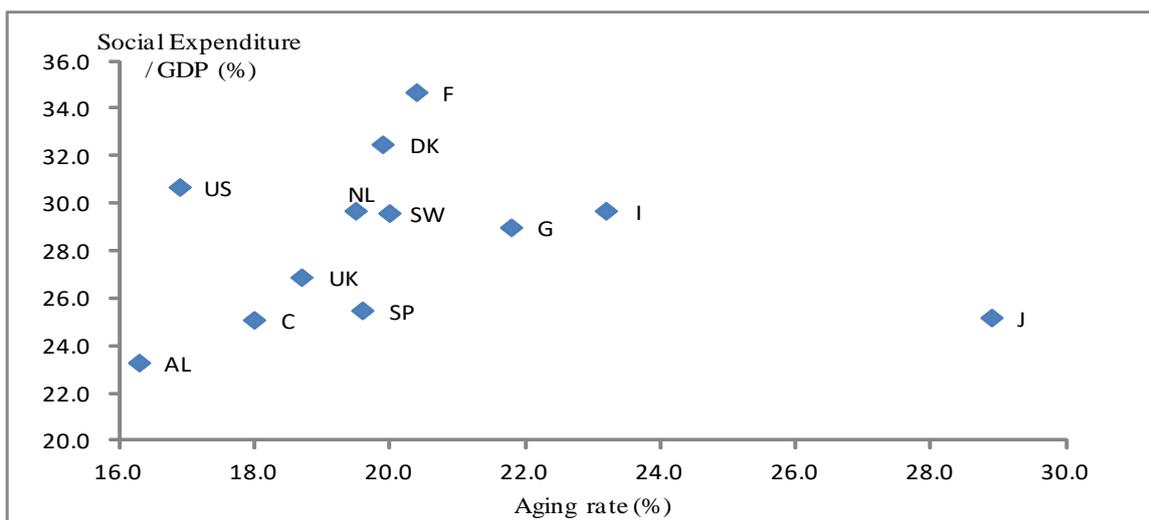


Note: AL = Australia, C = Canada, DK = Denmark, F = France, G = Germany, I = Italy, J = Japan, NL = Netherlands, SP = Spain, SW = Sweden, UK = United Kingdom, US = United States.

Sources: Table 2.

Figure 1 Social expenditure (Public) and social expenditure (Private) in the 12 countries: Percent of GDP, 2019

Figure 2 plots the aging rate on the X-axis and social expenditure (Total) as a percent of GDP on the Y-axis in the 12 countries. Social expenditure (Total) as a percent of GDP was only 25% in Japan, compared to 29% in Germany, 31% in the USA, and 35% in France in 2017/18. Figure 2 clearly indicates how Japan is apart from the other developed countries with a quite low level of social expenditure (Total) despite of the quite high aging rate, suggesting that safety nets may be ripped in Japan.



Note: AL = Australia, C = Canada, DK = Denmark, F = France, G = Germany, I = Italy, J = Japan, NL = Netherlands, SP = Spain, SW = Sweden, UK = United Kingdom, US = United States.

Source: Table 2

Figure 2 Aging rate (2020) and Social Expenditure (Total) as a percent of GDP (2017/18) in the 12 countries

2.2 Family benefits

It is already quite clear from Table 2 that the scale of family benefits (1.6% of GDP) in Japan is far behind Sweden or the UK (3% of GDP). Table 3 shows the scale of family benefits including tax relief for child-rearing families in the 12 countries. Cash benefits as a percent of GDP were high in the UK (2.12%), Canada (1.43%), France (1.42%) and Australia (1.40%), and services as a percent of GDP were high in Sweden (2.15%) and Denmark (2.08%), and tax relief as a percent of GDP was high in Germany (0.84%) and France (0.72%). The total family benefits as a percent of GDP was more than 3% in France, Denmark, Sweden, the UK and Germany, and less than 2% in the USA, Spain, Canada, Japan, and the Netherlands.

Japan has been trying to reverse its low fertility trends for more than 30 years since the “1.57 shock” in 1990 (Note 2), and puts the support for child-rearing families as one of the major targets in social security policy. However, Japanese family benefits as a percent of GDP are still quite low, and the total fertility rate was 1.34 in 2020, much lower than 1.57. The structure of social expenditure in Japan is not favorable for couples in the younger generations who wish to raise a family.

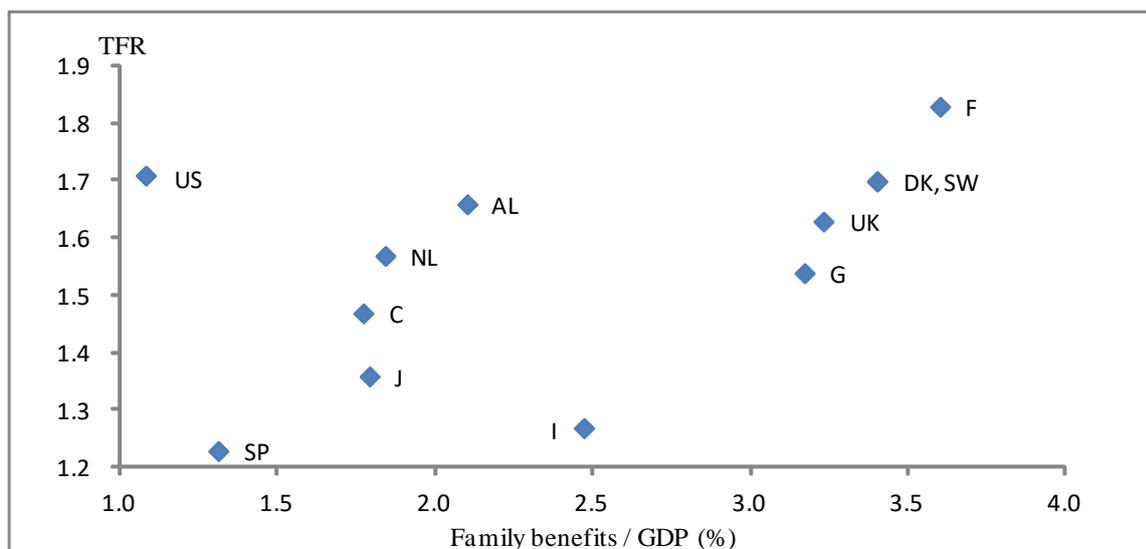
Table 3 Family benefits and Taxes (incl. SS contribution) in the 12 countries: Percent of GDP

	Public family benefits, 2017				Taxes (incl. SS contribution), 2019					
	Cash	Sewrvice	Tax relief	Total	Income tax		SS contr.	Asset tax	Cons. Tax	Total
					Pers.	Corp.				
Australia	1.40	0.70	0.00	2.10	11.6	4.8	0.0	2.7	7.3	27.7
Canada	1.43	0.23	0.11	1.77	12.5	4.3	4.7	3.9	7.7	33.8
Denmark	1.32	2.08	0.00	3.40	26.8	3.3	0.0	2.0	14.1	46.6
France	1.42	1.46	0.72	3.60	9.3	2.2	14.8	3.9	12.4	44.9
Germany	1.08	1.25	0.84	3.17	10.6	2.0	14.6	1.1	10.3	38.6
Italy	1.35	0.63	0.48	2.47	11.4	2.0	13.3	2.4	12.0	42.4
Japan	0.65	0.93	0.20	1.79	5.9	3.8	12.9	2.6	6.2	31.4
Netherlands	0.85	0.64	0.35	1.84	8.5	3.7	13.4	1.5	12.1	39.3
Spain	0.51	0.68	0.12	1.31	7.8	2.1	12.3	2.5	10.0	34.7
Sweden	1.24	2.15	0.00	3.40	12.3	3.0	9.2	0.9	12.1	42.8
UK	2.12	1.12	0.00	3.23	9.0	2.3	6.5	4.1	10.7	32.7
USA	0.07	0.56	0.46	1.08	10.3	1.3	6.1	2.9	4.4	25.0

Note: Other than SS contribution, wages are taxed as 1.3% of GDP in Australia, 0.7% of GDP in Canada, 0.3% of GDP in Denmark, 1.8% of GDP in France, and 5.3% of GDP in Sweden.

Sources: OECD Family Database and OECD Tax Database, both accessed in Jan. 2022.

Figure 3 plots the family benefits as a percent of GDP on the X-axis and the total fertility rate on the Y-axis in the 12 countries. From this figure, we can observe two lines: one is connecting Australia and Spain, the other is connecting France and Germany, both indicating higher family benefits associated with higher TFR. Japan belongs to the low family benefits and low TFR group.



Note: AL = Australia, C = Canada, DK = Denmark, F = France, G = Germany, I = Italy, J = Japan, NL = Netherlands, SP = Spain, SW = Sweden, UK = United Kingdom, US = United States.

Sources: OECD Family Database accessed in Jan. 2022.

Figure 3 Public family benefits as a percent of GDP (2017) and Total Fertility Rate (2019) in the 12 countries

2.3 Tax burden including social security contribution

Taxes (including social security contribution) as a percent of GDP in the 12 countries are also shown in Table 3. Japanese personal income tax was 5.9% of GDP, which was the lowest in the 12 countries. Japanese social security contribution from employees and from employers together was 12.9% of GDP (13.3% in Table 1), which was lower than that in France, Germany, the Netherlands, and Italy. Concerning consumption tax, Japan was the second lowest next to the USA. The total tax burden as a percent of GDP was the highest in Denmark (46.6%), and the lowest in the USA (25.0%). Japanese 31.4% was the third lowest next to the USA and Australia.

3 Government expenditures on social security in the 12 countries

Table 4 shows the share of social security in government expenditure for the central government as well as the general government (central government + regional and local governments + social security fund) in the 12 countries. As shown in the note of Table 4, government expenditure is classified into 10 policy areas, and social security is defined as the sum of Health and Social protection.

3.1 Central government

The total expenditure as a percent of GDP of the central government was the highest in the UK (37.4%), and the lowest in Germany (12.6%) in 11 countries (data is missing for Canada) in 2019. Japan (17.2%) was the second lowest next to Germany. The share of social security in government expenditure for the central government was the highest in the USA (61.2%), followed by the UK (54.0%), Australia (47.1%), and Germany (46.8%). However, as regional and local governments as well as social security funds play a major role in social security in many countries except Australia, the UK, and the USA, the general government should be referred to in discussing social security.

Table 4 Share of social security among government expenditure in the 12 countries: 2019

	(% of GDP)									
	Central government					General government				
	Total	Social Security			Share of SS (%)	Total	Social Security			Share of SS (%)
Total		Health	S. Prot.	Total			Health	S. Prot.		
Australia	31.1	14.6	4.5	10.1	47.1	43.7	18.7	7.7	11.0	42.8
Canada										
Denmark	35.8	12.6	0.4	12.2	35.2	49.2	29.6	8.3	21.4	60.3
France	22.5	5.4	0.4	5.0	24.0	55.6	31.9	8.0	23.9	57.4
Germany	12.6	5.9	0.2	5.7	46.8	45.2	27.1	7.4	19.7	60.0
Italy	29.5	11.6	5.0	6.6	39.3	48.6	28.0	6.8	21.1	57.5
Japan	17.2	6.4	2.0	4.5	37.4	39.3	24.0	7.8	16.2	61.1
Netherlands	25.9	7.9	1.3	6.6	30.7	42.0	23.1	7.7	15.4	55.1
Spain	18.7	2.0	0.2	1.8	10.6	42.0	23.5	6.1	17.4	55.8
Sweden	29.2	11.3	1.4	10.0	38.8	49.3	26.0	7.0	19.0	52.8
UK	37.4	20.2	7.7	12.5	54.0	41.0	22.5	7.7	14.8	54.8
USA	23.0	14.0	6.8	7.2	61.2	38.1	16.9	9.3	7.6	44.3

Note: Government expenditure is classified into 10 areas: General public services, Defence, Public order and safety, Economic affairs, Environment protection, Housing and community amenities, Health, Recreation, culture and religion, Education, and Social protection. Social security is the sum of Health and Social protection.

Source: OECD (2021). National Accounts Statistics: Government expenditure by function.

According to Table 4, the central government spending for social security was 6.4% of GDP in 2019 in Japan. According to Table 1, the central government spending for social security was 6.1% of GDP in FY2019, and both tables seem to be consistent.

3.2 General government

The total expenditure (as a percent of GDP) of the general government was the highest in France (55.6%), and the lowest in the USA (38.1%) in the 11 countries (data is missing for Canada) in 2019. Japan (39.3%) was the second lowest next to the USA. Social security expenditure (as a percent of GDP) of the general government was the highest also in France (31.9%) and the lowest in the USA (16.9%), but Japan (24.0%) was located in the middle. Consequently, the share of social security in government expenditure for the general government was the highest in Japan (61.1%), followed by Denmark (60.3%) and Germany (60.0%).

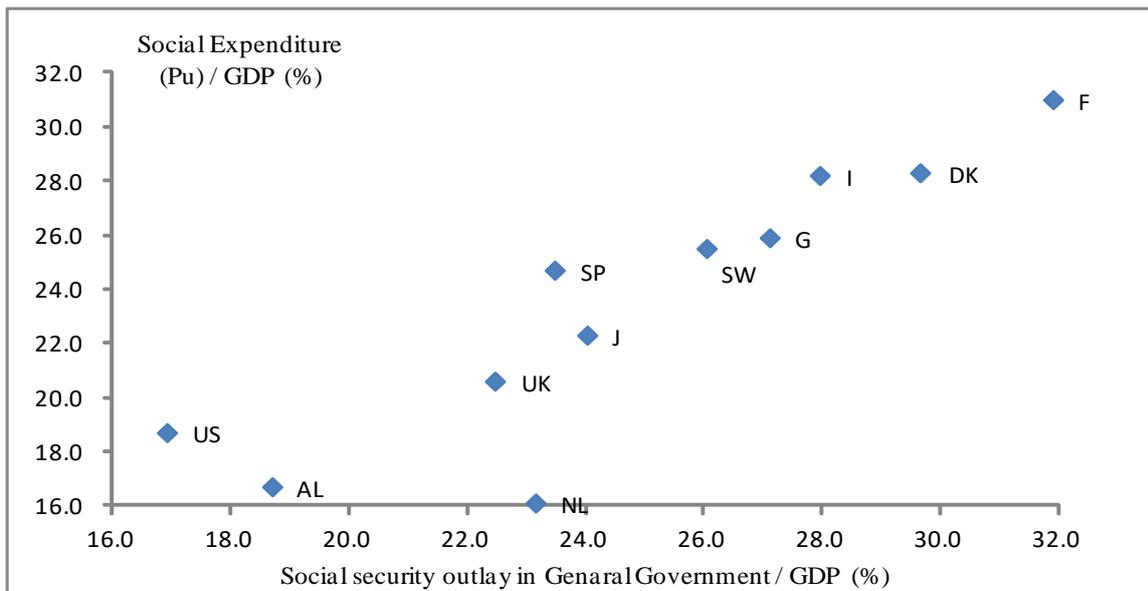
Figure 4 plots the social security outlay in the general government (as a percent of GDP) on the X-axis and social expenditure (Public) as a percent of GDP on the Y-axis in the 11 countries. From this figure, we can observe a rather strong correlation between two variables except for the USA and the Netherlands.

The finance of social expenditure comes mainly from social security contributions and government outlays on social security. Figure 5 plots the government outlay on social security (as a percent of GDP) on the X-axis and social security contribution (as a percent of GDP) on the Y-axis in the 12 countries in 2019. The level of social security contribution (as a percent of GDP) can be classified into 3 groups:

Group 1 (high): France, Germany, the Netherlands, Italy, Japan, and Spain;

Group 2 (low): Sweden, the UK, the USA, and Canada;

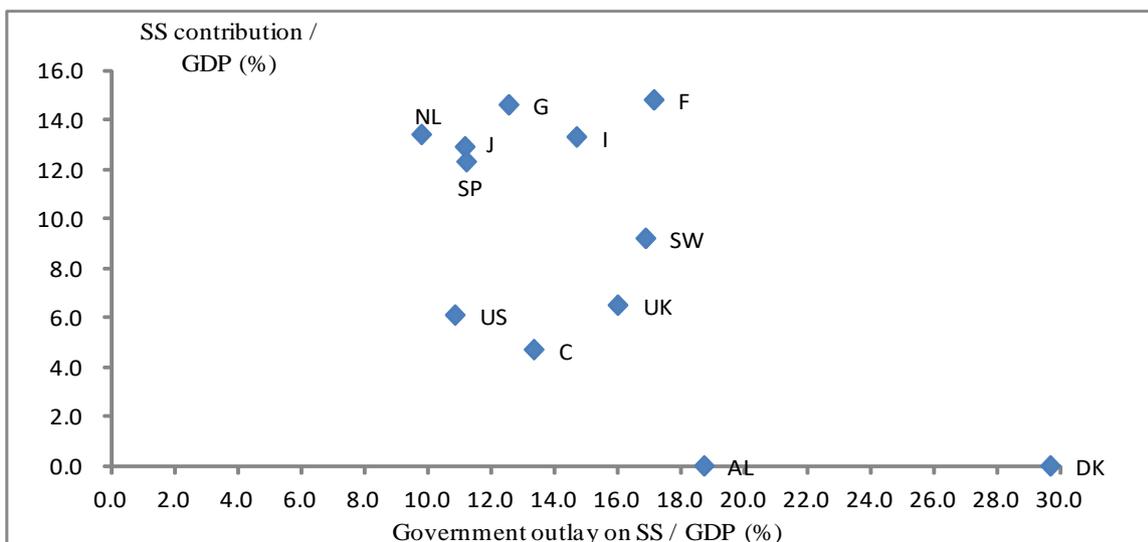
Group 3 (zero): Australia and Denmark.



Sources: Tables 2 and 4.

Figure 4 Social security outlay in the general government and social expenditure (Public) in the 12 countries: Percent of GDP, 2019

In accordance with a low level of social expenditure (Public) as a percent of GDP, the levels of social security contribution and government outlay on social security are modest in Japan. The sum of social security contributions and government outlays on social security, both as percents of GDP, was the highest in France, second in Denmark, then followed by Italy, Germany, Sweden, and Japan in this order. In view of the advanced aging rate, the Japanese source of funds for social security seems to be too small in order to finance reasonable social expenditure.



Sources: Tables 3 and 4.

Figure 5 Government outlay on social security (SS) and SS contribution in the 12 countries: Percent of GDP, 2019

4 Discussions

The scale of social security tends to increase with population aging, and government outlay on social security increases hand in hand with the increase in social expenditure. However, the scale of Japanese social expenditure is modest despite of the quite high aging rate in Japan. It is biased towards age-related benefits, and family benefits as well as welfare benefits are lagged behind. Figure 2 clearly indicates that the scale of social expenditure (Total) in Japan is as large as that in Canada where the aging rate is only 18%, suggesting various kinds of functional disorders in the Japanese safety net. A high income disparity among the Japanese population is just an example of them.

Among structural changes, such as population ageing, changes in the labour market (temporary and part-time employment, including new forms of work) and the increase in new social risks, adaptability to demographic change is most challenging for old-age benefits whatever the funding model and increasingly so for healthcare and long-term care systems (Spasova and Ward, 2019). Through the 12-country comparison, characteristics of Japanese social security finance were featured as follows:

- Not only public systems but also private arrangements affect people's living, especially in the fields of old age pension and health insurance. Japan belongs to the lowest group in the social expenditure (Public + Private) as a percent of GDP.
- Due to a low level of social expenditure (Total), enough resources are not provided for child-rearing support and welfare benefits, and extension of an unequal society is left unsolved in Japan.
- The share of social security in government expenditure for the general government was the highest in Japan, caused by the fact that the total expenditure (as a percent of GDP) of the general government was unreasonably low in Japan. Outlay for social security makes a commanding share of government expenditure in every developed country.
- Social security contribution as a percent of GDP is small in Japan compared to the other countries with social insurance systems.
- Japan is not well prepared for the aging of the population, although Japan is already the front runner of aging.

Japan realized its fertility level was too low by the "1.57 shock" in 1990, and has been trying to reverse the trends since then. However, Japanese effort still remains limited and among the countries with a fertility level similar to Japan or lower, the only country where family benefits as a percent of GDP are lower than Japan is Spain, as shown in Figure 3. Germany also used to suffer from low fertility, but TFR in Germany is now more than 1.5. The experience in Sweden suggests that active family policy may be helpful to coincide with the increase of the female labor participation rate with the recovery of the fertility rate. However, it is quite clear that there is no broad consensus in Japan to introduce an active family policy. Even with the below replacement birth rates for more than three decades, there is no policy emphasis on reducing the costs of childcare such as family / child allowances, family / infant care leave, and public provision of childcare, nor support for mothers as they try to reconcile employment and childcare (Fukawa, 2008). The Japanese government cannot persuade corporations or the general public to pay more for family policies, although their burden level is rather low by international standards.

Higher employment is the only way to avoid an exclusive reliance on increases in tax or social security contribution rates in Sweden, which requires not only investments in education and labour market training, but also access to social services for families so that they can combine caring responsibilities with paid work (Palme and Heap, 2019). To cope with the diminishing working population in Japan, more participation of senior and

female workers should be encouraged in order to maintain the size of the labor force, and as a result, a higher proportion of the working population will maintain or enhance the tax-payer base as well as help reduce the amount of tax paid by worker transferred pension benefits (Yoshino, Kim and Sirivunnabood, 2019). If older workers are encouraged to participate in the labour market through policies like government subsidies, then their contribution to GDP will be greater than the costs of the government subsidies. If the employed older workers pay tax and social insurance contributions, there is a good possibility that tax revenue from them will exceed the costs of employment subsidies.

A massive increase of non-regular workers, especially among younger generations, is a typical example of the extension of an unequal society, being one of the underlining causes of low fertility in Japan. To equalize treatment between regular and non-regular workers, the suggestion is often made to make the labor market active through the leveling down of regular workers and the leveling up of non-regular workers, in terms of their treatment (Fukawa, 2008). In focusing on the working poor, without harming the incentive to work and not carrying a stigma, it would be worthwhile considering child allowances in the form of a refundable tax credit, which allows low-income persons to claim a refundable tax credit of up to a certain level of earnings (Fukawa, 2008).

Personal income tax is levied progressively, but social security contribution is a flat rate (sometimes flat amount). Income tax and pension contribution are mainly imposed on the working age population, but consumption tax and health / LTC contribution are imposed on the general public including the elderly in Japan. The role of social security contribution in Japan is relatively small among social insurance countries (Table 3). Social insurance contributions are the main source of financing in the German social security system. Within social contributions, the distribution of the burden between employers, employees, self-employed people and benefit recipients remained largely unchanged, with a slight reduction for employers and a greater increase for benefit recipients (Gerlinger, Fachinger and Hanesch, 2019). The main drivers for the relief offered to employers were the government's objectives of improving the competitiveness of German enterprises and strengthening the incentives for investment in Germany (Gerlinger, Fachinger and Hanesch, 2019). Social protection finance was originally mostly made up of contributions from work income, but since the 1990s it has become much more diverse in France. While social contributions still represented 63.0% of the financing of social security in 2005, they only represented 60.8% in 2016 due to massive reductions in social contribution rates, in particular those paid by employers, and the substitution of the generalized social contribution (*contribution sociale généralisée – CSG*) for a significant share of social contributions paid by employees (Huteau, 2019).

Relying on social security contribution has some weaknesses. Contributions to social insurance are determined by wage levels, not the added value of a particular industry or enterprise, thus labour-intensive enterprises or industries where productivity is below average pay a higher share of their revenues in social insurance contributions (Gerlinger, Fachinger and Hanesch, 2019). Social insurance contribution is levied solely on earnings, not taking into account of income from other sources. Moreover, as accepting more flexible working in the future, earnings subject to levy social security contribution may shrink, and proper source of funds for social security must be pursued under new socio-economic situations.

The main driver of change has been policies in the UK, and the main policy changes influencing spending have been the freeze and the many cuts to working-age benefits and increases in the state pension age including an increase in the qualifying years required for a new state pension (Bradshaw and Bennett, 2019). Pressures on spending have been exacerbated by cuts in social care spending and both process and outcome indicators show

that the health service is failing, as modelling indicates that health spending needs to increase by 4% per year to maintain the real level, given technological advances and the ageing of the population, which has not happened since 2010 (Bradshaw and Bennett, 2019). In some countries, including Japan, the progressive nature of taxes and social contributions are insufficient, resulting in redistribution by halves accordingly. The social protection financing mix could be diversified by extending taxation on property and corporations, especially if these are earmarked for social protection (Spasova and Ward, 2019).

Population aging is unavoidable. In terms of policy options, encouraging higher laborforce participation among the general population as in Sweden, and education-selective migration together with high integration efforts, could largely avoid the widely assumed negative impacts of aging and maintain a dynamic labor force based on high human capital (Marois, Belanger and Lutz, 2020). Considering the multi-dimensional nature of population ageing and shrinking, and the high context-specificity of the observed patterns across the world, it is expected that broader policies would be needed that seek to prevent macroeconomic decline such as to (a) increase the retirement age; (b) support continuing and lifelong education and health care for all; (c) encourage savings behaviour and healthy lifestyles throughout the life course; (d) promote employment among women, older persons and others traditionally excluded from the labour force; (e) support family-friendly policies to facilitate work-life balance and increased gender equality in both public and private life (Jarzebski et al., 2021).

As seen in Table 4, social security is an important branch for each government, and its share in total expenditure is dominant (61% in the central government expenditure in the USA and 60% in the general government expenditure in Germany). The share of social security in government expenditure for the general government was the highest in Japan (61.1%), which creates a false impression that social security is oppressing government financial stability. However, the Japanese situation can be simply explained that the total expenditure of the general government (39.3% of GDP) was not big enough and the social security expenditure of the general government (24.0% of GDP) was in the middle in the 12 countries. Consequently, sticking issues remain unsolved for many years in Japan.

Since the Japanese social security system has traditionally been built around full-time employees and the residual functions are left to local governments, a rapid aging of the population, changes in the labor market structure and an increase in poverty conspire to make the pieces of safety nets operate separately, leaving the needy caught in the holes without help (Hayashi, 2010). In view of the high aging rate, Japanese social expenditure (Total) is disproportionately low, which suggests that necessary investment in supporting child-rearing, blocking the poverty chain, creating a flexible and fair labor market, correcting unreasonable differences, etc., is not properly enforced. As seen in Figure 5, it is not yet the time to discuss the limit of the burden on social security in Japan. Japan should rather expand the preparation against population aging before it is too late, because the Japanese position is just unreasonable as seen in Figure 2. Social protection spending needs to increase and thus taxation as well as social security contribution need to rise to fund it in Japan. There is no other way but to provide necessary policies one by one according to their priority.

(Note 1) According to the OECD Social Expenditure Database, social expenditure is classified into 9 areas: Old age benefits such as old age pension and long-term care benefits, Survivors benefits, Incapacity-related benefits, Health benefits, Family benefits, Active labour policy, Unemployment benefits, Housing benefits for low-income households, and the other welfare benefits including public assistance. Social expenditure includes both through public systems and through private arrangements.

(Note 2) Japan has failed to raise its fertility rate to the replacement level of 2.1 since 1974. The issue gained national attention in 1990, with the so-called '1.57 shock', when Japan's total fertility rate in 1989 was published as 1.57, which was lower than the lowest record in history due to an exceptional reason.

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