

## **The Future presented by Japan's Population Trends**

### **- Who will bear the Financial Burden of Social Security? -**

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In the 2020s, Japan's baby boom generation will enter their "latter-stage elderly" years; in the latter half of the 2030s, the "second-generation" baby boomers will become elderly. In addition to this, the decline in the working generations will be ongoing. The dramatic progression in the aging of Japanese society which is inevitably coming is confronting the nation with major issues. In order to gain a clear perspective on the effect of this reality, the authors conducted an estimate of future expenditure on social security up to fiscal 2041, focusing in particular on changes in the population structure.

The results of estimation taking into consideration policies currently being put into effect indicated that social security expenditure would increase from 21.5% of GDP to 24.5% (in terms of nominal values, this represents an increase from 116.2 trillion yen to 190.7 trillion yen). The aging of Japanese society will see a significant increase in expenditure for medical and nursing care, with the increase particularly high in the area of nursing care. With a simultaneous increase in the population needing to be supported and decline in the population providing support, a considerable burden will be placed on the working generations. In the case of medical care, in addition to population factors, the rapid advancement of treatments and technologies must also be borne in mind.

Against the background of the nation's ongoing difficult fiscal situation, it goes without saying that the problems facing Japan's social security system represent an urgent policy agenda. As the aging of the population progresses, numerous issues must be addressed, including reform of the structure of benefits and burdens and the formulation of responses for people facing ever-greater risk. It is vital that we embrace a realistic vision of Japan's future and proceed steadily with the implementation of policy efforts on this basis.

The decline in Japan's birthrate and the aging of the nation's population will continue into the future. In 2025, Japan's baby boom generation will enter their "latter-stage elderly" years; in the latter half of the 2030s, the "second-generation" baby boomers will become elderly. In addition to this, the decline in the working generations will be ongoing. This unavoidable change in Japan's population structure will have a significant impact on social security. In order to allow us to take a clear perspective on this reality, it is vital that we identify medium- to long-term trends in social security expenditure and formulate responses on this basis. However, since the Ministry of Health, Labour and Welfare published estimates of future social security expenditure as part of its discussions towards integrated reform of the social security and taxation systems in 2012, estimates have not been updated, and we have not delineated a vision beyond 2025, a mere eight years away. Focusing on changes in the nation's population structure due to the declining birthrate and aging population, the authors therefore conducted an estimate of social security-related expenditure up to fiscal 2041<sup>12</sup>.

## Future Outlook for Social Security Benefit Expenditure

Considered in terms of ratio to GDP, social security benefit expenditure will increase from 21.5% of GDP in fiscal 2016 (116.2 trillion yen in terms of nominal values) to 24.5% (or 190.7 trillion yen) in fiscal 2041, representing a three percentage point increase<sup>3</sup> (see Figure 1). This corresponds to consumption tax revenue for a rate of 6%.

Looking at a breakdown of these figures, reflecting the fact that there will be a significant increase in the percentage of the population aged 65 and above, medical benefit-related expenditure will increase from 7.0% of GDP in fiscal 2016 to 8.5% in fiscal 2041<sup>4</sup>. Expenditure related to benefits for nursing care will more than double, from 1.8% of GDP in fiscal 2016 to 3.9% in fiscal 2041. The scale of these increases is not exclusively due to the fact that the percentage of the population aged 65 and above will increase, but is also a result of the fact that the percentage of the population aged 80 and above, which makes particularly high use of nursing-care services, will also increase. Expenditure on medical and nursing care combined will increase from 8.7% of

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<sup>1</sup> For further details regarding the estimates discussed in this paper, please refer to the more extended version of the paper published on NIRA's website. Estimates related to medical and nursing care were conducted by Yasushi Iwamoto and Tadashi Fukui; estimates for other policy areas were mainly conducted by Daisuke Ozaki and Mari Kawamoto of NIRA.

<sup>2</sup> Estimates were conducted until 2041 in consideration of the policy cycle in the areas of medical and nursing care. The period of the 3rd Term Medical Expenditure Optimization Plan has been extended to six years from the previous five, synchronizing it with the Insured Long-term Care Plans, which are formulated on a three-year cycle. This realizes a further level of cooperation between the implementation of measures in each field. In accordance with this policy cycle, fiscal 2041 was selected as the final year for the estimates because it will be the year in which four cycles of the Medical Expenditure Optimization Plan (24 years) will be completed.

<sup>3</sup> Total benefit expenditure is based on social security benefit expenditure as indicated in social security expenditure statistics. The baseline scenario in the Economic and Fiscal Projections for Medium to Long-term Analysis (Cabinet Office, January 23, 2018) was employed for the economic preconditions until fiscal 2027. Following fiscal 2027, it was assumed that the wage growth rate and inflation rate for the final fiscal year of the Economic and Fiscal Projections for Medium- to Long-term Analysis would be maintained. The wage growth rate was estimated based on the "Health and Long-term Care Insurance Model" developed by Yasushi Iwamoto and Tadashi Fukui.

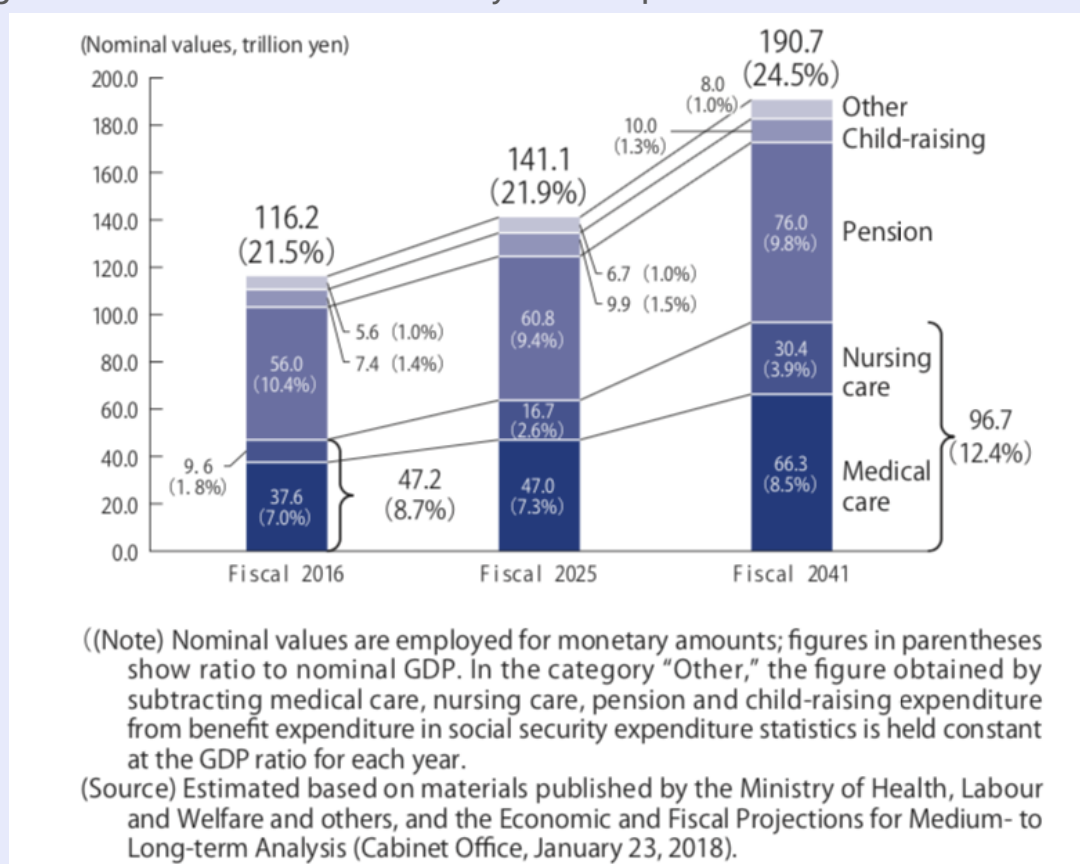
<sup>4</sup> Medical expenditure in this estimation was based on national medical care expenditure, and included public medical assistance provided by welfare benefits. It should be borne in mind that the expenses contributed by patients and those requiring nursing care was not included in this estimate.

GDP in fiscal 2016 to 12.4% in fiscal 2041.

At the same time, expenditure on pension benefits will register a slight decline, from 10.4% of GDP in fiscal 2016 to 9.8% in fiscal 2041. This is due to the “macroeconomic slide” mechanism, which will automatically reduce the level of pension benefits in line with the reduction in the working population and the extension of average lifespan, thus controlling expenditure on benefits in order to ensure the long-term viability of pension financing.

Expenditure related to children and child-raising will decrease from 1.4% of GDP in fiscal 2016 to 1.3% in fiscal 2041. Policies currently being implemented seek to enhance relevant services; and taking into consideration the decline in the population of children that will continue following this, the level of expenditure will remain largely unchanged.

Figure 1: Future outlook for social security benefit expenditure



## The Burden placed on Working Generations

For a social security system which is based on a pay-as-you-go funding mechanism reliant on insurance premiums and tax revenue, a further increase in the elderly and decline in the working generations means an increase in the population being supported and a decline in the population providing support. This will lead to a rapid increase in the financial burden on each member of the working generations.

Under the current system, approximately 50% of an increase in medical and nursing care benefits would be funded by revenue from the payment of insurance premiums by the person

concerned or the proprietor of a business; the remainder would be publicly funded from consumption tax revenue. The burden of medical insurance premiums will increase from 3.7% of GDP in fiscal 2016 to 4.3% in fiscal 2041 (from the perspective of Japan Health Insurance Association premium rates, the increase will be from 10.0% to 11.4%). The increase in the burden of nursing care insurance will be greater, with the premium burden increasing 2.2-fold, from 0.8% of GDP in fiscal 2016 to 1.7% in fiscal 2041. The burden on public funding will increase from 3.5% of GDP in fiscal 2016 to 5.5% in fiscal 2041, an increase of 2.0 percentage points (see Table 1). This corresponds to consumption tax revenue for a rate of 4%.

**Table 1 :Trends in public burden and insurance premium burden for medical and nursing care**

	Fiscal 2016	Fiscal 2041	Rate of change (Against fiscal 2016)
<b>Public burden (Ratio to GDP)</b>			
Total	3.5%	5.5%	1.6
Medical care	2.5%	3.4%	1.3
Nursing care	1.0%	2.1%	2.2
<b>Insurance premium burden (Ratio to GDP)</b>			
Total	4.5%	6.0%	1.3
Medical care	3.7%	4.3%	1.1
Nursing care	0.8%	1.7%	2.2

(Note) Estimated burden in relation to insurance benefits based on the “Health and Long-term Care Insurance Model” (In the case of medical care, the burden in relation to medical expenditure covered by medical insurance within national medical expenditure; the scope differs from Figure 1). The public burden is made up of the national and regional government burden in relation to Japan Health Insurance Association, national health insurance, late-stage elderly medical care insurance and long-term care insurance benefits, and the national and regional government burden in relation to funding of the late-stage elderly medical care system and contributions to the long-term care insurance system. Rate of change does not necessarily agree with stated figures due to rounding off.

(Source) Same as Figure 1.

## **Focusing on the Effects of Changes in Population Structure**

When long-term projections are published, interest focuses on the degree to which they hit the mark. The purpose of the estimates discussed here, however, is not to realize certainty, but rather to provide the basis for discussion that will guide policy in a more desirable direction in future. The intention is to sketch out a general direction based on the current situation, a vision of the most likely future. To this end, the particular focus in these estimates was the effect of changes in Japan’s population structure.

Estimation of expenditure for medical and nursing care employed the “Health and Long-term Care Insurance Model” developed by Yasushi Iwamoto and Tadashi Fukui. The basic assumption of this model is that multiplying medical and nursing care expenditure per person in

each age cohort by the population makes it possible to see the effect of medium- to long-term changes in the population structure. For the economic preconditions, of the two scenarios published in the Economic and Fiscal Projections for Medium to Long-term Analysis (Cabinet Office, January 23, 2018), the analysis selected the more reliable baseline scenario, which assumes economic growth in accord with the current potential growth rate. However, the Cabinet Office estimates only extend to fiscal 2027; the economic preconditions for fiscal 2027 were used for the years from 2027 onwards in the analysis discussed in this paper.

Estimates were conducted for medical care based on the assumption that the effects of the 3<sup>rd</sup> Term Medical Expenditure Optimization Plan and other initiatives would continue to be manifested. Given that this plan seeks to control medical costs, the authors projected that the ratio of medical care expenses to GDP would increase only slightly until fiscal 2023, but taking into consideration the fact that increases in the general price level and real wages would be reflected in the cost of services, assumed that following this, the rate of increase in unit costs would follow the nominal wage growth rate. Because of this, only changes in population structure were reflected in trends in the ratio of medical expenses to GDP in this analysis.

In the case of nursing care, the analysis took into consideration fuller use of services and the effect of the transition of elderly patients from long-term hospitalization to nursing care services, based on estimates published by the Ministry of Health, Labour and Welfare during discussion of the integrated reforms, and assumed the same rate of increase in unit costs from 2025 onwards as for medical care.

As in the case of government Financial Verifications, the estimates were calculated with public pension benefits divided into basic pension, employees' pension (welfare pension), and national pension. For the basic pension and employees' pension, the amount of benefit expenditure prior to adjustment by the macroeconomic slide was estimated based on estimates of the number of pension recipients and nominal wages; in order to estimate the post-adjustment amount of benefit expenditure, this figure was multiplied by a rate of reduction based on the rate of adjustment by the macroeconomic slide assumed in the fiscal 2014 Financial Verification. In the case of national pensions, estimates were conducted with consideration of the rate of population decline<sup>5</sup>. The economic preconditions were the same as those employed in the case of medical and nursing care.

Child- and child-care-related expenditure was estimated by obtaining actual figures for each system based on Ministry of Health, Labour and Welfare estimates conducted at the time of the integrated reforms and reflecting the decline in the relevant population of children. Taking into consideration the Outline of Measures to address the Declining Birthrate and other initiatives launched following the integrated reforms, the child-care-related policies in the New Economic Policy Package published at the end of 2017 have been incorporated as much as possible. It should be noted that the establishment of a child-care environment of the type sought by these policies

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<sup>5</sup> The estimation methodology employed in the pension section of the Long-term Fiscal Estimation Tool (Beta version; Version 6.2, updated on June 2, 2016) developed by the Tokyo Foundation for Policy Research was used as a reference in the estimation of public pension benefit expenditure. The number of pension recipients was based on the estimate employed in the FY2014 Financial Verification. Other pension benefits (public employees' pensions, etc.) were estimated based on social security expenditure statistics and added to pension benefit expenditure.

might have the potential to increase the birthrate, but this has not been considered in the analysis under discussion.

## **Discussion based on the Outlook for Benefits and Burdens is Essential**

The estimates conducted in this analysis indicated that the effect of changes in the population structure alone would increase the scale of benefit payments by an amount corresponding to a consumption tax rate of 6%, and that the burden on the working generations would increase. Even at present, the basic fiscal balance at both national and regional levels is recording an enormous deficit (a debt-to-GDP ratio of approximately 3.0% in fiscal 2016). In addition, if we consider the fact that in the future, about half of medical and nursing care benefits, which will increase due to population factors, will be publicly funded, a revision of the burden on citizens is unavoidable.

Particular attention should be focused on nursing care, because here the amplitude of the increase in expenditure will be greater than in the case of medical care due to the progress of aging among the elderly. There has been little advance in concrete discussion of nursing care expenditure by comparison with the streamlining of medical care expenditure; it will be necessary in future to give more attention to issues including the best direction for the system.

In the field of medical care today, high-priced drugs are being developed and treatments advanced at a remarkable pace, and this pace is expected to accelerate still more. The estimates discussed here incorporated the possibility of increases in medical expenditure due to increases in the advancement of medical care to a certain degree, but it is possible that rapid increases in the level of advancement in the field could cause a further upswing in expenditure.

In addition to this, the authors would like to point to the problem of reduction of the level of benefits as an issue for the pension system. Adjustment of the level of benefits by the macroeconomic slide will be essential to the maintenance of pension funding, but the fact that the mechanism largely failed to function in the past under conditions of deflation has extended the period for adjustment of the basic pension, with the result that a reduction of the pension is projected for the future. Because of this, there is a possibility that elderly people whose working wage was low and who do not possess the assets required for their daily expenses in their old age will require welfare payments. Estimates calculated by Seiichi Inagaki suggest that the income of approximately 40% of single or divorced elderly women may be at or below the level at which welfare is required in 2040<sup>6</sup>. It will be essential to engage in policy discussion regarding the prevention of poverty among the elderly, for example by expanding the scope of recipients of employee's pensions.

## **Reform of the System of Provision of Medical and Nursing Care and Increased Productivity**

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<sup>6</sup> Inagaki, S., "Simulation Analysis of Increasing Poverty among Elderly Japanese Women," *Pension and Economy*, Vol. 35, No. 3, pp. 3-10.

In addition, advancing discussion of reform of the system of provision of medical and nursing care will be important to the ability to control expenditure without any decline in the quality of care. It will be essential to actively implement (with consideration of regional differences) initiatives including integration of the management of medical facilities, reform of the system of provision of services, and the realization of increased productivity and reduced costs through the use of information and communications technology on the basis of cooperation between the public and private sectors.

While the Ministry of Health, Labour and Welfare estimates published at the time of the integrated reforms used as one of the preconditions for the present estimates assumed a certain increase in the use of nursing care services due to factors including an increase in single-person households, as the aging of Japanese society proceeds, personal care by family members and others will play a greater social role. The total amount of hours expended annually per person on personal nursing care was 18.1 in 2016; this figure is expected to increase to 36.6 in 2040. As a result, problems including the psychological burden on family members providing care and decline in their standard of living will represent policy issues.

It goes without saying that the problems that will be faced by Japan's social security system as the nation's tight fiscal management continues are urgent policy issues. The change in population structure being experienced by Japan has the potential to significantly change the future direction of Japanese society. The issues are numerous, including reform of the structure of benefits and burdens that has prevailed up to the present, and the putting in place of responses for those facing increased risk. It is vital that we proceed with the implementation of policy with a clear vision of the real future that faces Japan.

## **Column: Will Economic Growth solve the Problem?**

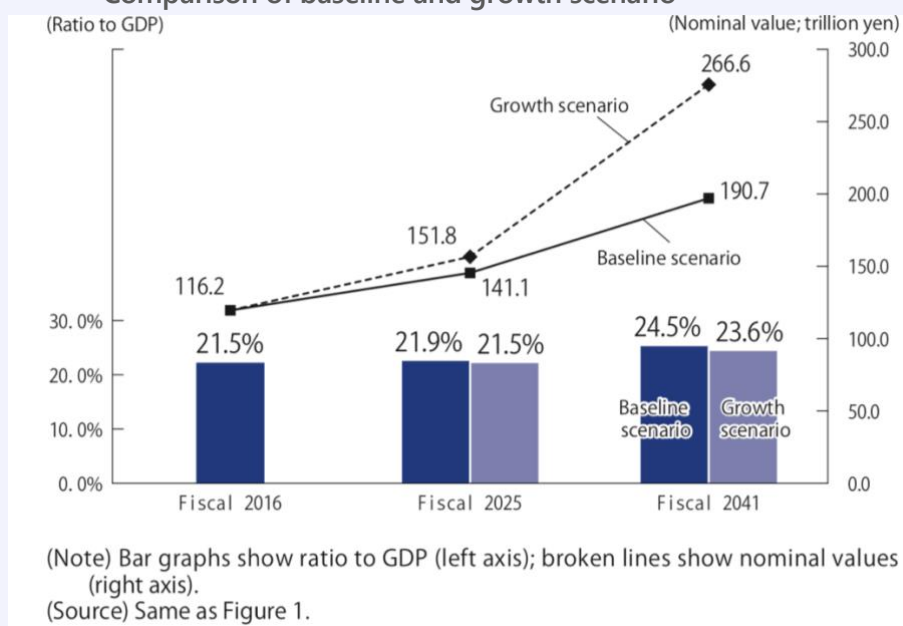
The discussion in this paper is based on the results of estimates for the baseline scenario in the Cabinet Office's Economic and Fiscal Projections for Medium to Long-term Analysis (January 23, 2018); however, the Economic and Fiscal Projections also contains a growth scenario, in which the economy realizes a high level of growth. The nominal economic growth rate in 2027 is 1.7% in the baseline scenario, and 3.5% in the growth scenario (2027 nominal GDP is 668 trillion yen in the former scenario, and 758 trillion yen in the latter).

The authors therefore also conducted estimates for the high-growth-rate scenario. Assuming that the wage growth rate derived on the basis of the Cabinet Office estimates remained fixed at the fiscal 2027 rate from fiscal 2027 onwards, the nominal economic growth rate was estimated with consideration of the reduction in labor power. The results showed a ratio of total benefit expenditure to GDP of 23.6% in fiscal 2041 for the growth scenario. This figure is one percentage point lower than the figure of 24.5% for the baseline scenario, and 2.1% higher than the figure for fiscal 2016.

Naturally, this result was significantly affected by the preconditions for the estimates. However, as this indicates, it is not self-evident that the burden of medical and nursing care will be reduced even if the economy achieves a high rate of growth. This is due to the fact that in a

situation of high growth, the general price level and real wages will increase; an increase in the general price level will increase the cost of medical and nursing care services together with the GDP, and if real wages increase, the personnel costs for medical and nursing care services will also increase. Based on this argument, it is not a given that economic growth will help us avoid an increase in the burden associated with social security expenditure.

**Figure 2: Outlook for social security benefit expenditure:  
Comparison of baseline and growth scenario**



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