Aging population in Asian countries
— Lessons from Japanese experiences —

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The views expressed in this paper are those of the authors and not those of the Ministry of Finance or the Policy Research Institute.
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Abstract

Many Asian countries are facing a rapidly aging population. An aging population will cause social security expenditures in national budget to rise. Currently, fiscal conditions in Asian countries are relatively stable, but governments will be required to control social security expenditures to maintain fiscal soundness.

Japan established universal health insurance and pension insurance systems in 1961. In 1973, the so called “first year of high-level social welfare”, free medical services for the elderly and the index-linked pension system were started. Currently, in Japan, the aging rate, which measures the share of the population aged 65 years old or over, has reached 27%, while the country continues to face fiscal deficits and government debt has been accumulating. Other Asian countries have started to develop their countries’ social security systems, so it is time to review the lessons that can be drawn from Japanese experiences relating to social security expenditures and national budget conditions.

In this paper, we focused on Japanese social insurance systems, especially health insurance and pension insurance systems, and addressed some lessons to Asian countries. Lessons from health insurance system are: (1) It is important to determine public contributions’ share of medical expenses not by patients’ age, but based on their income and assets, (2) To establish universal health insurance system, it is important to ensure the stable financial revenues of insurers with subscribers who are unable to enroll with other insurers.

Lessons from the pension insurance system are: (1) It is important for the government to manage sharp acceleration of inflation in such a way as to not increase pension benefits, thereby preventing the financial burdening of future generations, (2) The pension system should be designed based on the long-term projections of the population aging rate and total fertility rate, and policies should be adapted accordingly, (3) It would be preferable that the government take a “Macro-economic slide” pension system which is a fixed contribution schedule coupled with a mechanism to rebalance pension finances through automatic adjustment of benefits.

1 This paper was conducted relating to the PRI and ADBI workshop on “Aging Population in Asian Countries and its impact on Fiscal Sustainability”. We are grateful to seminar participants at the Ministry of Finance for their valuable suggestions and comments. The views expressed herein are those of the authors and do not necessarily reflect the views of the Ministry of Finance, Japan or the Policy Research Institute.
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1. Introduction

The aging rate (the share of population aged 65 or over) in Japan reached 27% in 2017. Social security expenditures in the national budget have increased, especially for social security expenditures for the elderly. Population aging is a worldwide trend. The speed of population aging in Asian countries is faster than in other areas. Asian governments will face the increasing pressure of social security expenditures in national budgets, like Japan.

We first review the trend of population aging in Asian countries. Figure 1 shows the trend of population aging, the share of the population aged 65 or over in Asia from 1950 to 2100. In particular, the speed of population aging in Japan has skyrocketed. Korea, Singapore, China and Thailand have the next highest rates. Korea and Singapore will catch up to the same population aging level of Japan in 20 years, Thailand in 25 years, and China in 30 years. Other Asian countries will also increase the rate of their aging population gradually.

![Figure 1: The trend of population aging (65 years old and over)](source)

The society in which the aging rate exceeds 7% is said to be called an “aging society”, and that of 14% is an “aged society”. Table 1 shows the “Doubling time” which is the number of years it takes for a country’s aging rate to rise from 7% to 14%. In Europe, France took 115 years, Sweden took 85 years, England took 46 years and Germany took 40 years. In Asian countries, Vietnam is projected to

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shift from a 7% aging rate to 14% in only 17 years. Even the Philippines, which is known for a high total fertility rate, will complete this shift in 39 years.

The countries of Europe were afforded much time to change their societies to cope with the increasing size of the aging population. Unlike Europe, however, Asian countries, which are now facing a rapidly aging population, do not have enough time to take the necessary policy actions, especially in the social security area. Therefore Asian countries will be imposed great financial pressures to prepare social security systems.

<table>
<thead>
<tr>
<th>Country</th>
<th>Population aging rate</th>
<th>Doubling time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philippines</td>
<td>7% 2032 to 14% 2071</td>
<td>39 years</td>
</tr>
<tr>
<td>India</td>
<td>7% 2023 to 14% 2051</td>
<td>28 years</td>
</tr>
<tr>
<td>Indonesia</td>
<td>7% 2025 to 14% 2050</td>
<td>25 years</td>
</tr>
<tr>
<td>Japan</td>
<td>7% 1970 to 14% 1995</td>
<td>25 years</td>
</tr>
<tr>
<td>Malaysia</td>
<td>7% 2020 to 14% 2045</td>
<td>25 years</td>
</tr>
<tr>
<td>China</td>
<td>7% 2002 to 14% 2025</td>
<td>23 years</td>
</tr>
<tr>
<td>Singapore</td>
<td>7% 1999 to 14% 2019</td>
<td>20 years</td>
</tr>
<tr>
<td>Thailand</td>
<td>7% 2002 to 14% 2022</td>
<td>20 years</td>
</tr>
<tr>
<td>Korea</td>
<td>7% 1999 to 14% 2017</td>
<td>18 years</td>
</tr>
<tr>
<td>Vietnam</td>
<td>7% 2017 to 14% 2034</td>
<td>17 years</td>
</tr>
</tbody>
</table>


As we see in Figure 1, Japan is a forerunner of population aging in the world. In this paper, we will address some lessons from Japanese experiences, focusing on social insurance systems and fiscal impacts on the national budget in the following sections.

2. Related literatures on population aging and its impact on fiscal sustainability

In this section, we review the literature relating to social security expenditures and the national budget. Kawai and Morgan (2013) pointed out that the biggest long-term fiscal challenge in emerging Asian economies is the aging of their populations, which will lead to much higher levels of old-age-related spending, especially for health and pension benefits. Édes and Morgan (2014) also mentioned that many Asian countries are aging fast, which will raise old-age-related spending dramatically, while tending to reduce economic dynamism caused by the pressure from population aging. Therefore they propose to increase the efficiency of social protection programs.

insurance system. This literature discussed mainly the historical policy trends in the social security system itself, but did not mention so much the fiscal impact of the social security system. Oku and Hirakawa (2015) analyzed the impact of the social security system on fiscal policies with the “History of fiscal policy” issued by the Ministry of Finance, but they didn’t cover what would be the lessons to Asian countries.

There is the report of the Global Aging Institute (2015) asked whether respondents agreed or disagreed that “Supporting the growing number of the elderly will be a large burden for tomorrow’s workers and taxpayers” (Figure 2). The results showed that Korea, Taiwan, Hong Kong, Thailand, China and Singapore supported “agree” over “disagree”. These countries which supported “agree” are the same countries facing a rapidly aging population in Figure 1. On the other hand, the Philippines, Malaysia, Vietnam and Indonesia supported “disagree” over “agree”. This fact implies that the increasing size of the aged population may change their views regarding the level of burden of supporting the elderly.

Even though Asian countries are not uniform, every Asian country is facing population aging. Japan is the leading example for Asian countries to deal with fiscal policy under population aging.

Figure 2 Questionnaire: “Supporting the growing number of elderly will be a large burden for tomorrow’s workers and taxpayers”


3. Fiscal conditions of Asian countries

We review the current fiscal conditions of Asian countries before to discuss population aging and its fiscal impact. Figure 3 shows the trend of the general government fiscal balances from 1996 to 2017. This graph shows that most of Asian countries have kept their fiscal balances stable.
Next, Figure 4 shows the trend of general government debt to GDP. This ratio of India and Vietnam are around 60%, and that of other countries is under 60%, except Singapore. Asian countries have kept relatively sound fiscal conditions except Japan.

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6 IMF (2016) mentioned about Singapore that “Government debt is issued to develop domestic capital markets and to provide an investment vehicle for the mandatory saving scheme.” (p44).
4. Fiscal condition of Japan

We review the fiscal condition of Japan in this section. Figure 5 shows general account expenditures in FY2017. The share of social security expenditure is 33% and that of national debt service expenditure is 24%. These two expenditure shares amounted to 57%, more than half of the general account total expenditures\(^7\).

Figure 5  General account expenditure FY2017 of Japan  
(billion)  


Figure 6 shows the comparison chart of aging countries, Japan and Sweden, which shows the ratio of social expenditures by policy areas. The ratio of “Old age” expenditure of Japan (46.4%) is much higher than that of Sweden (34.9%). On the other hand, the ratio of “Family” and “Incapacity” of Japan (5.5%, 4.5% each) is smaller than that of Sweden (13.3%, 15.5% each).

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\(^7\) Social security related expenditures of the general expenditure is 55.6% (General expenditures = Total expenditure in central government’s general account – National debt service – Local allocation tax grants).
Figure 6  Comparison ratio of Social Expenditure by policy areas (2013)

Figure 7 shows the trends in social benefits for the elderly in Japan from 1951. “Social benefit for the elderly” includes “pension benefits”, “medical care benefits”, “welfare service benefits” and “subsidies for employee”. It shows that the share of social benefit for the elderly has been increasing since 1973 (the collecting of data of social benefit for the elderly was started). Recently, the share of social benefit for the elderly has reached to 70%.

Figure 7  Social benefit (Japan)

Figure 8 shows social security revenue by source, such as “Contribution from insured persons”, which includes “Contribution from insured employers”, “State contribution”, “Other public
contribution\textsuperscript{8} and “Income from capital” and “Others”. The sum of “State contribution” and “Other public contribution” are said “Public contribution”. The amount of public contribution has been increasing in Figure 8.

**Figure 8** Social security revenue by source\textsuperscript{9} (Japan)

![Figure 8](image)


In the following, we will focus on social insurance, especially health insurance and pension insurance systems to review the relationship between an increasing size of the aged population and increasing amount of public contribution in social security expenditures of the national budget. This paper makes clear the trends in the Japanese social security system, that is, if the number of aged people increases, the contribution from insured persons which have not been covered by total benefit increases under the social security system in Japan, and, in turn, the amount of public contribution which covers the gap also ultimately increases.

5. Lessons from health insurance and pension insurance systems of Japan

5-1. Lessons from the health insurance system of Japan

First, we review how Japanese universal health insurance system has affected the expenditures of public contributions. In 1958, the National Health Insurance Act was revised such that municipalities

\textsuperscript{8} “Other public contribution” means local governments' contribution.

\textsuperscript{9} Balance refers to the difference between figure 8 (social security revenue (127.1 trillion yen in FY2013)) and figure 7 (the sum of social benefit, administrative costs, operating losses, and others (113.9 trillion yen in FY2013)), and does not include any transfer to and from other systems; in particular, balance represents transfers to the reserve fund and the balance carried forward to the following fiscal year.
take responsibility for administering National Health Insurance. This revision of the act forced those who had not belonged to the employees’ insurance to join the National Health Insurance. Eventually, universal health insurance system was established in 1961\(^\text{10}\).

In the following, we analyzed the impact on free medical care expenses for the elderly and the financial situation of National Health Insurance.

1) The impact on free medical expenses for the elderly

In the latter half of 1960, after introducing universal health insurance, an increasing number of the elderly who live alone or are bedridden became a social problem\(^\text{11}\). Some municipalities started free medical care for the elderly or subsidized their medical payments, and these elderly care policies spread to other municipalities gradually. Reflecting on these movements, the government revised the Act on Social Welfare Service for the Elderly, and started free medical care for the elderly, which was intended to cover all of the medical expenses of the elderly aged 70 or over using public funds from January 1973. In the same year, insurers increased payments to family from 50% to 70%. Moreover, provision of benefits for a high-cost medical care\(^\text{12}\) was also introduced. Therefore, 1973, the year of the enhancement of the health care system, was called “The first welfare year”.

Once this free medical care for the elderly started, the rates of estimated patients aged 70 or over jumped up both in the Inpatient (Figure 9) and Outpatient (Figure 10) categories. Comparing the rates of estimated patients aged 70 or over from 1970 to 1975, the hospitalization rate increased 1.6 times and the number of outpatients 1.7 times\(^\text{13}\). The Ministry of Health, Labour and Welfare (2011) described that “There were disagreements and expressions of caution over making medical expenses for the elderly free. At that time, Japan developed with a high economic growth rate and had a large production-age population. As a result, the policy of free medical care for the elderly was finally implemented\(^\text{14}\).”


\(^{11}\) Tsuchida (2011), p250.

\(^{12}\) If the amount of self-payment exceeds the upper limit, the insurer will cover the excess amount. (In 1973, the upper limit was 30,000 yen).


Figure 9  Inpatient: Yearly trend in the rates of estimated patients (per day) by age group (per 100,000 population) (Sources) Patient Survey 2014

Figure 10  Outpatient: Yearly trend in the rates of estimated patients (per day) by age group (per 100,000 population) (Sources) Patient Survey 2014

Figure 11 shows the share of national budget of medical expenses for elderly per GDP\textsuperscript{15}. Even though inflation happened due to oil shocks during this time, government contributions rapidly increased due to free medical care for the elderly.

\textsuperscript{15} Elderly medical expenses include the expenses of free medical care for the elderly aged 70 years old and over, and the subsidy expense for blind seniors with low income to receive surgical operations. Elderly medical expenses were part of social welfare expenses in social security expenditures in the national budget at this time.
The Act on Health Care for the Elderly was enacted in 1982, which abolished the policy of free medical care for the elderly and introduced co-payments of medical expenses (outpatient: 400 yen per month, inpatient: 300 yen per day (up to 2 months)) in 1983 to be a fair burden of the growing medical expenses of the elderly. To maintain the sound financial conditions of the National Health Insurance, in which many of the elderly are enrolled, the medical expenses which were not covered by co-payments were financed by public contributions at 30% (20% for government, 5% for prefectures, 5% for municipalities) and by other insurers at 70%\textsuperscript{17}. From 1987 to 1997, the amount of co-payment for the elderly increased year by year. Since 2000, the payment method shifted from a fixed amount to fixed share of total medical expenses for the elderly. Nowadays, the elderly aged 70 to 74 are required to pay 20% of their medical expenses and the elderly aged 75 or over pay 10%. The elderly whose income level is the same as members of the working generation are required to pay 30%\textsuperscript{18,19}.

\textsuperscript{16} This graph shows the ratio of national budget of medical expenses for elderly. (The burden sharing of the medical expenses for elderly was 2/3 for government, 1/6 for prefectures, 1/6 for municipalities.) The Government also pay 1/2 of office expenses.
\textsuperscript{17} Ministry of Health, Labour and Welfare (2011), p57.
\textsuperscript{19} Ii (2016) pointed out that doctors tend to prescribe excessive medicines (especially high price medicines which are not clarified the superiority) and excessive medical inspections under free-for-service payment in Japan. To solve these problems, it is necessary to change the current payment system to improve doctor’s consultation qualities and introduce the payment system accompanied with this change.
(2) Financial condition of National Health Insurance

There are many elderly subscribers in National Health Insurance, including those who withdrew other health insurance for health reasons, compared with other health insurance. It has also been pointed out that the average income of National Health Insurance subscribers is lower than those other health insurance subscribers^{20}. In addition, the average age and medical expenses per National Health Insurance subscriber is also higher, making the premium rate of National Health Insurance higher than other health insurance (Table 2).

Table 2 Outline of the health care insurance system

<table>
<thead>
<tr>
<th></th>
<th>Municipality controlled National Health Insurance</th>
<th>Japan Health Insurance Association</th>
<th>Cooperative Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of insurers (End of March 2014)</td>
<td>1,717</td>
<td>1</td>
<td>1,419</td>
</tr>
<tr>
<td>Total enrollment (million of people) (End of March 2014)</td>
<td>33.97 (household:20.1)</td>
<td>35.64 (Insured Person:20.3) (dependents:15.34)</td>
<td>29.27 (Insured Person:15.6) (dependents:13.68)</td>
</tr>
<tr>
<td>Average age of subscribers (FY2013)</td>
<td>50.9</td>
<td>36.6</td>
<td>34.3</td>
</tr>
<tr>
<td>Percent of 65-74 years old (FY2013)</td>
<td>35.6%</td>
<td>5.5%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Medical expenses per Subscribers (thousands of yen) (FY2013)</td>
<td>325</td>
<td>164</td>
<td>146</td>
</tr>
<tr>
<td>Average income of subscribers (thousands of yen) (FY2013)</td>
<td>830 (per household:1,400)</td>
<td>1,390 (per household:2,430)</td>
<td>2,020 (per household:3,780)</td>
</tr>
<tr>
<td>Average premium of subscribers (thousands of yen) (FY2013)</td>
<td>85 (per household:144)</td>
<td>106 &lt;211&gt; (per insured person: 185 &lt;370&gt;)</td>
<td>114 &lt;250&gt; (per insured person: 213 &lt;468&gt;)</td>
</tr>
<tr>
<td>Premium rate</td>
<td>10.3%</td>
<td>7.6%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Public expenditure share 50% of benefits etc. + premium reduction</td>
<td>16.4% of benefits etc.</td>
<td>Assistance to insurers that contribute a heavy burden to support the elderly aged 75 or over</td>
<td></td>
</tr>
<tr>
<td>Public expenditure (billions of yen) (FY2015 budget)</td>
<td>4,381 (national government coverage 3,138)</td>
<td>1,169 (national government)</td>
<td>30.8 (national government)</td>
</tr>
</tbody>
</table>

(Source) All-Japan Federation of National Health Insurance Organizations.

Figure 12 shows the trends in National Health Insurance subscribers by age. This graph shows that the share of the elderly has been high since the 1970s.

^{20} All-Japan Federation of National Health Insurance Organizations (2015), p2.
Figure 12  Trends in the share of National Health Insurance subscribers21 by age

Figure 13 shows the trends in premium income of National Health Insurance and national treasury disbursements during the 1960s and 1970s22. Since 1961, when universal health insurance system was established, the total amount of premium income increased by 1.2 times every year, and the amount of national treasury disbursement also increased accompanied with this trend.

Figure 13  Trends in premium income of National Health Insurance and national treasury disbursements

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21 Subscribers’ share means the ratio of the number of National Health Insurance subscribers out of all the number of each aged categories. Since 2008, all the elderly aged 75 years old or over (including the elderly aged 65 years old or over if bedridden) enrolled the long life medical care system. Therefore, the graph of the elderly aged 70 years old or over includes only 70-74 years from 2008.

22 National Health Insurance subscribers do not consist only of the elderly. Figure 13 therefore does not clearly express the direct effect of aging. However, Figure 13 implies that the impact of aging affects the financial condition of National Health Insurance.
To review the National Health Insurance system since the 1980s, the Health Insurance Act was revised in 1984, introducing a medical system for retired people. The mechanism of this system was to transfer money from employer-based insurance funds to the National Health Insurance fund to support the covering of the costs of retired employees\textsuperscript{23}. In 2008, a long life medical care system for the elderly aged 75 or over was started, and these subscribers withdrew from the National Health Insurance or other health insurance scheme that they used to be enrolled in, and newly enrolled in the long life medical care system in order to separate medical costs from other generations. In addition, the insurer of this long life medical care system was the long life medical care partial-affairs association, which centralized the management of insurance finance to clarify the financial and operational responsibility\textsuperscript{24}.

The lessons from Japanese experiences on health insurance system are: (1) Recipients were able to receive medical care without hesitation under a free medical care system, but this induced excessive visits and increased medical costs, which was anticipated to happen beforehand. It is important to determine the share of public contribution for medical expenses not by age, but based on income and assets, (2) Japan established universal health insurance system to establish National Health Insurance for people who could not enroll in other insurance schemes, such as the elderly and people with low incomes. Therefore the financial condition of the National Health Insurance has been weak. To establish universal health insurance system like Japan, it is important to ensure the stable financial revenues of the insurers of people with financial difficulties.

5-2. Lessons from the pension insurance system of Japan

In this section, we discuss the national government contribution to pension insurance system. After Japan established the universal pension insurance system in 1961, the government revised the pension systems to raise pension benefits. The Japanese pension system adopted a social insurance scheme, but the shortfall of premiums was funded by the national government contribution. As the pension benefits increased, the national government contribution also increased. Half of the benefits of the National Pension had been funded by the national government contribution since 1961\textsuperscript{25}. When it was started, 10% of the benefits of the Employees’ Pension Insurance system was funded by public contribution\textsuperscript{26}, which then increased to 20% in 1965\textsuperscript{27}.

\textsuperscript{23} Fukawa (2002).
\textsuperscript{25} National government contribution had been calculated based on pension premiums in 1961 when this system was started, but it was changed to be based on benefits in 1976.
\textsuperscript{26} Ministry of Health, Labour and Welfare (2014), p98. The share of public contribution to pension benefits for pit workers was 20% in 1961.
\textsuperscript{27} Ministry of Health, Labour and Welfare (2014), p102. The share of public contribution to pension benefits for pit workers was 25% in 1965.
(1) Effect of sharp increase in the Consumer Price Index

During the middle of the 1970s, the share of the national government contribution increased rapidly in the revenues of the National Pension fund (Figure 14). The share of the national government contribution in the Employees’ Pension Insurance system also increased (Figure 15).

The key factor that triggered such a rapid increase in national government contribution was that, in 1973, pension systems were revised and index-linked pension payments were introduced. In the same year, the first oil shock happened and it led to sharp acceleration of inflation (Figure 16). Just after the introduction of index-linked pension payments, it caused a sharp increase in pension benefits. The annuity cost, which increased by the most, was financed by the national government contribution.
Meanwhile, this enabled the reduction of the deterioration of the real value of the annuity arising from rapid price growth.

Figure 16  Consumer Price Index (All items, except imputed rent), % Change from the previous year

![Graph showing Consumer Price Index from 1974 to 1995](Source) Statistics Bureau, Consumer Price Index.

Table 3  Revenue sources of National Pension fund and its growth ratio during 1974 and 1975

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>1974 (hundreds of millions of yen)</th>
<th>1975 (hundreds of millions of yen)</th>
<th>Growth ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pension premiums</td>
<td>2,808</td>
<td>3,691</td>
<td>31.4%</td>
</tr>
<tr>
<td>National government contribution</td>
<td>878</td>
<td>2,113</td>
<td>140.7%</td>
</tr>
<tr>
<td>Investment return</td>
<td>957</td>
<td>1,093</td>
<td>14.2%</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>21</td>
<td>90.9%</td>
</tr>
</tbody>
</table>


(2) Importance of long-term projections of population aging rate and total fertility rate

It is important to design pension systems based on long-term projections of the population aging rate and total fertility rate to keep pension reserves sustainable in the long run. In addition, the government needs to review the public pension system constantly in light of the latest projections. Figure 17 and Figure 18 show the projections of the population aging rate and total fertility rate each. The projections in the past were very different from the actual results. These implied that population aging and the falling of the total fertility rate had progressed more rapidly. The projections have been revised based on the speed of population aging since the 1980s. Late adjustments to the government policies could be considered one of the reasons that led to the financial condition of the public pension strain.
Financial methods of pension system

Pension schemes have been repeatedly revised to maintain financial sustainability. Shortly after WWII, the Employees’ Pension Insurance, which was started in 1942, needed financial reconstruction because economic stagnation and hyper-inflation happened at that time. However, it was difficult to raise pension premiums because of the slow progress in postwar rebuilding.

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28 The pension premium and benefit were proportionate to wages, and the contribution rate was 11% based on the perfect funding system. (National Institute of Population and Social Security Research (2014)).

29 Ministry of Health, Labour and Welfare (2011) mentioned that the Employees’ Pension Insurance Act was revised in response to inflation.
Therefore the premium rate of the pension was reduced from 11% to 3%\(^{30}\) in 1948 as a temporary measure. This caused a shortfall of pension reserves. As economic recovery progressed during the 1950s, the government started to consider pension system reforms. The Employees’ Pension Insurance Act was entirely revised in 1954, pension benefits were raised and the financial scheme was shifted from a fully funded method to a modified funded method, a sort of combination of a pay-as-you-go system and a partially funded pension. The premium was to be raised in stages until an appropriate level. Though the government intended to raise pension premiums in the Employees’ Pension scheme to the same level as before the revision in 1948\(^{31}\), both employers and employees opposed increasing the burden of premium payments. Therefore, it was decided to gradually increase the premium rate from a lower level than from a required level.

The National Pension system was established in 1961, and introduced a fully funded method. In the 1966 reform, the pension benefits were raised and the financial method was shifted to a modified funded method. Although the National Pension system also needed to raise premium rates due to the increase in pension benefits, it was difficult to actually raise it because the National Pension system had many low-income individuals\(^{32}\). Then, the National Pension system introduced the modified funded method as the Employees’ Pension did.

According to Yokoyama and Tada (1991), “The modified funded method is a method making up unfunded pension liabilities resulting from economic change and improving the benefit level by passing the financial burden to future generations.” During the economic growth era, the government was able to increase the level of pension benefit due to wage increases and inflation. However, as the speed of economic growth slowed, a modified funded method was adopted.

In 2004, Japan’s public pension system was reformed, and an automatic balancing mechanism adjusting benefits according to demographic conditions (declining birthrate and the population aging), the so-called Macro-Economic slide, was adopted. Before the 2004 reform, the pension scheme conducted a recalculation every five years to change the pension premium to finance the benefits. Under this scheme, the future benefits were not clear. After the 2004 reform adopted the automatic adjustment mechanism, this problem was solved because of its automatically balancing benefits and contributions.

The Ministry of Health, Labour and Welfare (2014) mentioned that “The 2004 pension reform adopted a financing method whereby the public pension fund was scheduled to be used on the 100-year plan, and at the end of the plan, the amount of remaining funds were expected to be equal to a 1-year pension benefit. It could be said that Japan’s pension system was basically called a pay-as-you-go system judging by the level of pension reserves.” (p155). In addition, Oya (2015) mentioned that “While it was originally assumed that the Japanese Public Pension system was based on a fully funded


\(^{32}\) Hamada (1966), p63.
system, the current pension system is often called a revised pay-as-you-go system as most of all premiums are used to fund pension benefits in the same year."

The lessons of the Japanese pension insurance system to Asian countries are: (1) it is important for government to manage sharp acceleration of inflation not to increase pension benefits, so that the government prevents financial burdening on future generations. In addition, (2) the pension system should be designed based on the long-term projections of the aging rate and total fertility rate, and when the projections are newly revised, the policies should be adjusted based on these projections. Moreover, (3) it would be preferable that the government take a “Macro-economic slide” pension system which is a fixed contribution schedule coupled with a mechanism to rebalance pension finances through the automatic adjustment of benefits.

6. The common and different points among Japan and Asian countries

Figure 19 shows the trend in the ratio of social security benefit per GDP. When Japan established universal health insurance and pension insurance systems in the 1960s, the social security benefit as percentage of GDP was only 5%. However, since 1973, the so called “First year of high-level social welfare”, the percentage has increased. In 2013, it reached 23%.

![Figure 19](image)


Figure 20 shows social protection expenditures as percentage of GDP in Asian countries in 2013. The share of Japan is over 20%, on the other hand, that of most Asian countries is under 5%.
Figure 20  Social protection expenditures (% of GDP) (2013)

(Source) ADB Social Protection database 2013.

Going forward, the number of aged people will continue to increase, and the economy will grow further in Asian countries. In addition, social security systems will be required to expand. Of course, Asian countries are not uniform. However, the key to maintain financial sustainability must be how much the government contributes to paying for increasing social security benefits.

7. Challenges for Asian countries

We discussed the lessons from Japanese experiences to Asian countries above. In this section, we point to the three challenges of Asian countries.

The first challenge is a slowdown of each country’s economic growth rate. In Figure 21, the x-axis shows the per capita real GDP and the y-axis shows the real economic growth rate. This graph shows the connected position of each country by year, so the right side of the curve shows the 2010s. Japan established universal health insurance and pension insurance systems when its real economic growth rate was more than 10% in the 1960s33. Economic growth rate in Asian countries is lower than that of Japan’s in the 1960s. As per capita GDP increases in Asian countries, the pressure to increase social security expenditures would also increase.

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33 Ministry of Finance (2000) says that “In the economic boom from 1958 to 1961 so called “Iwato” economic growth era, the Japanese government had been rapidly building the systems to achieve a welfare state.” (p259).
The second challenge is to control inflation moderately. In Japan shortly after the introduction of the index-linked pension system in 1973, there was sharp acceleration of inflation resulting from the oil shock, and it caused increasing pension benefits. The Japanese pension system was based on a modified funded method, so most of the increased burden of pension benefit expenses were shifted to the burden of future generations at that time. The inflation rate in Asian countries seems relatively stable in recent years (Figure 22). However, Asian countries need not only to take sound macro-economic policy, but also take into account the effect of inflation on the social security system, for example pension, and decide how to respond by fiscal policy if sharp acceleration of inflation actually occurs.

(Source) IMF, World Economic Outlook database, April 2017.
The third challenge is to handle medical costs caused by advances in medical technology\textsuperscript{34}. The development of new medicine leads to increasingly expensive treatments, and puts pressure on health insurance finance. Therefore, governments need to discuss how to balance medical expenditure and medical quality.

8. Conclusion

We reviewed the Japanese social security system and discussed the challenges for Asian countries to maintain sound fiscal situations in the face of rapidly aging populations. Japan faces severe fiscal conditions, and the share of social security expenditures in the budget is increasing every year. On the other hand, the fiscal conditions of Asian countries have been relatively stable. However, enhancing the social security system would make social security expenditures increase along with the progress of the aging population in Asian countries. Therefore, whether they can maintain stable fiscal conditions today depends on how these governments establish social security systems from now on.

We focused on the social insurance systems, especially health insurance and the pension insurance systems in this paper.

Lessons from the health insurance system are: (1) It is important to determine the public contributions’ share of medical expenses not by age, but based on income and assets, (2) To establish universal health insurance system, it is important to ensure the stable financial revenues of insurers with subscribers who are unable to enroll with other insurers.

Lessons from the pension insurance system are: (1) It is important for the government to manage sharp acceleration of inflation in such a way as to not increase pension benefits, thereby preventing the financial burdening of future generations, (2) The pension system should be designed based on long-term projections of the population aging rate and total fertility rate, and policies should be adapted accordingly, (3) It would be preferable that the government take a “Macro-economic slide” pension system which is a fixed contribution schedule coupled with a mechanism to rebalance pension finances through an automatic adjustment of benefits.

Asian countries are not uniform, but the trend of aging populations and the expanding social security system are the same. Japan is one of the countries which offers a universal health insurance and pension insurance systems. However, it is not sustainable if the system will be maintained by imposing financial burdens on future generations. The Japanese government has been endeavoring to control social security expenditures which increase year by year in accordance with population aging. Asian countries could learn lessons from Japanese experiences to formulate social security policies.

\textsuperscript{34} Ministry of Health, Labour and Welfare (2013) mentioned that “medical cost in 2010 was 37.4 trillion yen (292 thousand yen per person) and the amount will be increased by development of medical technology and population aging.” (p310).
that maintain sound fiscal conditions.

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