KEY THEME: Social Security

TITLE: SOME WEAKNESSES OF A BENEFIT LEVEL INDICATOR

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ABSTRACT

Japan's social security pension reform in 2004 had two objectives. One was to remove anxiety from people on the level of contributions which people feared would go up endlessly. Therefore Japan fixed the future contribution programme and introduced an automatic balancing mechanism to recover financial equilibrium under the incessant decline of fertility and the continual improvement of mortality averting political battle. On the other hand, the automatic balancing mechanism might cause another anxiety for people on the level of benefit that people might fear would be reduced infinitely. The other objective was, therefore, to remove the second anxiety as well. To realize this, Japan defined a measurement of benefit level called a replacement rate and, by using this, introduced the minimum benefit level provision whereby, if the actuarial projection shows that the benefit level measurement threatens to go below the prescribed level before the next actuarial valuation, the automatic balancing mechanism is to be frozen and drastic reform discussion on benefit and contribution regime is to be resumed. The prescribed level was supposed to represent the threshold below which the benefit level the social security pension schemes provide would become inadequate. After some time elapsed since the 2004 reform and we experienced unusual economic conditions, we became aware of some weaknesses of this measurement as benefit level. This paper summarizes such weaknesses and proposes alternative ways to monitor benefit level of social security pension schemes. At the same time we draw lessons from this experience that heavy dependence upon a single indicator would hinder us from understanding social security pension schemes properly.

Keywords: automatic balancing mechanism, benefit level, replacement rate, benefit adequacy

1. Introduction

Five years have passed since the social security pension reform bill passed the Diet in June 2004 in Japan. It was the bill to introduce a form of automatic balancing mechanism in the social security pension schemes after having experienced several reforms caused by the repeated decrease of mortality and fertility surpassing the latest updated projections and accompanied by fierce and fruitless political battles between the government parties and the opposition parties. The political battle, in a way, reflected people's anxiety over the contribution level that they feared might increase endlessly. For this reason, the new law stipulates the contribution programmes for the future period in order to show the public that the contribution level does not increase endlessly.

As the contribution programmes are fixed, the next issue to be addressed is how to attain their financial equilibrium under the fixed contribution programmes. The answer was the automatic balancing mechanism. The Japanese government learned this idea from the Swedish reform in the 1990's. The final form of the mechanism is, however, different from it. Quite interestingly, it is, by chance, similar to the German sustainability factor method. The financial equilibrium is to be attained through modifying the indexation by deducting the modifier from the normal index as long as the schemes are not financially balanced. The modifier is defined to be the sum of the decrease rate of the number of active participants in the social security pension schemes and the increase rate of the life expectancy at age 65.

Through such modified indexation we have established a framework to attain the financial equilibrium under the fixed contribution programmes. However, another anxiety appeared on the way to finalizing the proposals. It was about the level of benefits the social security pension schemes provide. Many people expressed concerns about the future benefit level since it is to be automatically reduced through modified indexation. To cope with this new problem, the minimum benefit level provision has been introduced in the law. The law stipulates that a measurement is to be introduced to represent the benefit level[1] and that the contributions and benefits are to be drastically reviewed if the measurement threatens to go down below a prescribed level. This prescribed level is called the minimum benefit level.

The measurement seemed to work well when the law passed the Diet in 2004. In fact it would well function if the per-capita disposable income were to grow in any way as we unconsciously assumed. Our actual experience since then has been contrary to it; the per-capita pensionable remunerations little by little but constantly decreased in FY 2004-FY2007. The

[1] The measurement is a form of replacement rate for a specific household. The detail is described in **2.**

Consumer Price Index (CPI) has also been deflationary since then as it had been for the preceding decade. Under such circumstances, the modifying of the indexation has not been activated yet[2]. However, this may still be something we just have to continue to monitor.

When the result of the 2009 actuarial valuation was published, the measurement for FY 2009 increased from that for FY 2004 due to the fact that the per-capita disposable income of the active participants decreased. The author wondered if the prescribed minimum benefit level under such circumstances would mean the same level of benefit as initially planned. He analysed the situation and came to be aware of some weaknesses of the measurement implied by this unexpected phenomenon. Since they do not have immediate effects on the benefit level, we have time to work out a measure to amend them, but it is important to bear them in mind and monitor the actual experience. Therefore, in this paper, the author would like to describe them and propose a remedy for them.

In conclusion, one of the weaknesses of the measurement would eventually result in the excessive reduction of the benefit level that may threaten the adequacy of the benefit when the wage level becomes lower than that in FY 2004. Another weakness may be the fact that it does not tell anything about the benefit level of basic pensions.

2. Framework of the Financial Management of the Social Security Pension Schemes in Japan

(1) Social security pension schemes

Before we start the analysis of the measurement, we briefly describe the social security pension schemes in Japan to form a proper framework for discussion.

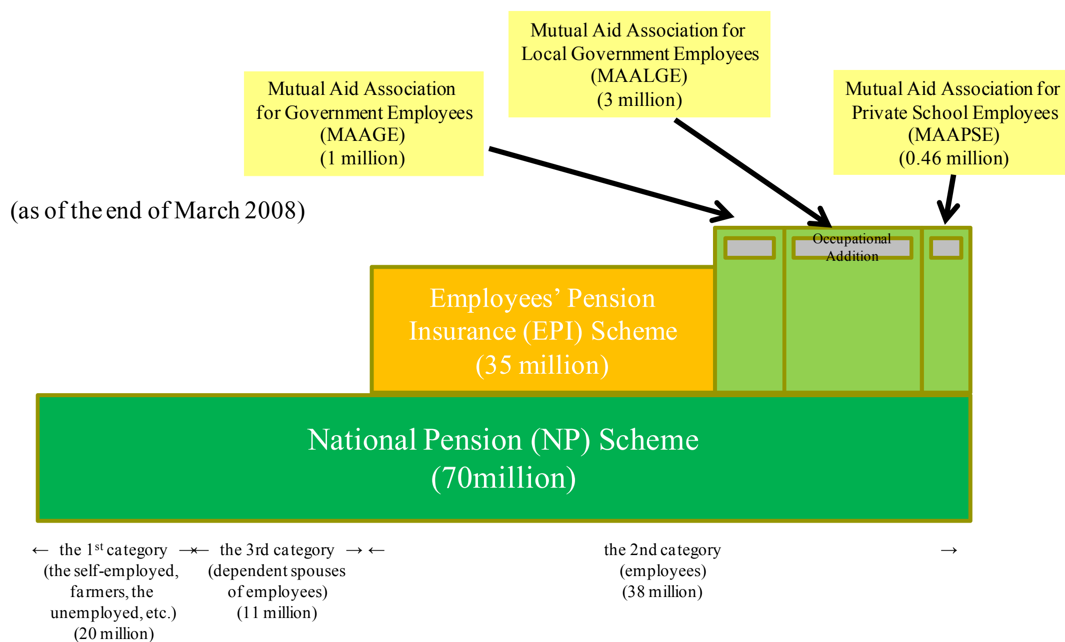
Everyone either working as an employee or aged 20-59 is compulsorily covered by the National Pension (NP) scheme. It provides flat-rate benefits. These benefits are usually called basic pension benefits. In addition to the coverage by the NP scheme, employees in the private sector are covered by a scheme called the Employees' Pension Insurance (EPI) scheme. This means that employees in the private sector are doubly covered by the NP scheme and the EPI scheme on a mandatory basis. It provides earnings-related pension benefits based on the career average salary. Civil servants are covered by different schemes called the Mutual Aid Association (MAA) schemes

[2] When the disposable income or the CPI decreases, the modifying of the indexation is not activated.

though they are doubly covered by the NP scheme for flat-rate benefits as in the same way as private employees. Private school employees are also covered by another different MAA scheme though they are compulsorily covered by the NP scheme as well. The benefits of the MAA schemes are calculated in the same way as those of the EPI scheme except that what is called the occupational addition is added to the amount[3]. However, their contribution rates are different from each other and from that of the EPI scheme.

Fig 1 shows the framework described above.

Fig 1 Social Security Pension Schemes in Japan



(2) Indexation

Since the benefit adequacy is of vital importance to the social security pension schemes, they stipulate indexation provision. The EPI, NP and MAA benefits follow the same indexation. Until the age 65 it is indexed to the increase rate of the disposable income. After the age 65 it is to the CPI increase rate. This indexation method is prevalent around the world. We call it the principal indexation hereinafter. Likewise the index under the principal indexation is called the principal

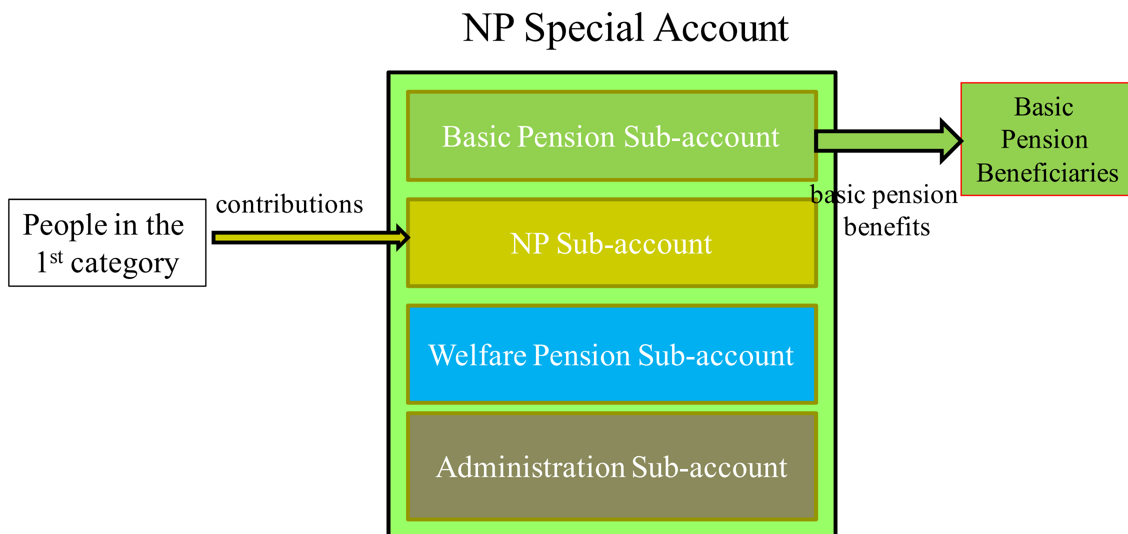
[3] Before April 1986, the MAA schemes were completely separate from the EPI scheme. It formed a part of the civil service system in Japan and included what corresponded to corporate pension plans in the private sector. When the benefit formula was amended from the final salary scheme to career average scheme in the 1985 reform responding to the pension jealousy discussion, the occupational addition was introduced. Again the occupational addition has become the target of the pension jealousy discussion. The amount of the occupational addition is 20% of the earnings-related benefits the EPI scheme provides.

index.

(3) Financing of the schemes

As stated in (1), the NP scheme covers the whole nation. However, the covered participants are classified into three categories. The first category consists of the self-employed, farmers, medical practitioners, lawyers, the unemployed, etc. They pay flat-rate contributions to the National Pension (NP) Sub-account of the National Pension (NP) Special Account. They receive flat-rate basic pension benefits from the Basic Pension Sub-account of the National Pension Special Account. **Fig 2** shows this money flow.

Fig 2 Money Flow of the NP Participants in the First Category

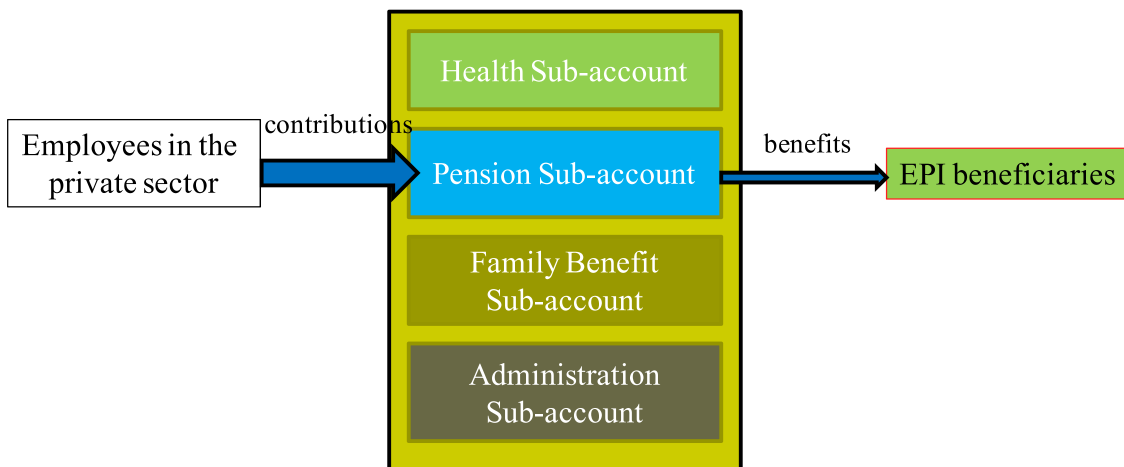


The second category consists of employees. They pay contributions only to schemes for employees, i.e. the EPI scheme and the three MAA schemes, in proportion to their salary. The Pension Sub-account of the Social Insurance Special Account collects the contributions of the employees covered by the EPI scheme. **Fig 3** shows this money flow. The mutual aid associations collect the contributions of civil servants or private school employees. Part of the contributions to the Pension Sub-account of the Social Insurance Special Account and to the mutual aid associations is transferred to the Basic Pension Sub-account of the National Pension Special Account to finance the basic pension payment every fiscal year. In return for this the employees receive flat-rate basic pension benefits as well as the earnings-related EPI benefits. Thus the contributions to the EPI or MAA schemes are the financial resources not only for the earnings-related benefits these schemes

provide but also for the basic pension benefits the Basic Pension Sub-account of the NP Special Account provides. From the individual beneficiary perspective, the basic pension benefits are paid by the Basic Pension Sub-account of the NP Special Account to them while the earnings-related benefits are paid by either the Pension Sub-account of the Social Insurance Special Account or the mutual aid associations. **Fig 4** shows the flow of money for the basic pension benefit payment as explained later.

The third category consists of non-working dependent spouses aged 20-59 of employees. They are mostly dependent housewives. They do not have to pay contributions. Nevertheless, as explained in the next paragraph, the schemes for employees transfer the designated amount of money for them to the Basic Pension Sub-account of the NP Special Account when they transfer that of the employees. This practice is rooted in the idea that the schemes for employees provide benefits not for individuals but for households. As a result of this, they receive basic pension benefits from the Basic Pension Sub-account of the National Pension Special Account.

Fig 3 Money Flow for the Employees in the Private Sector

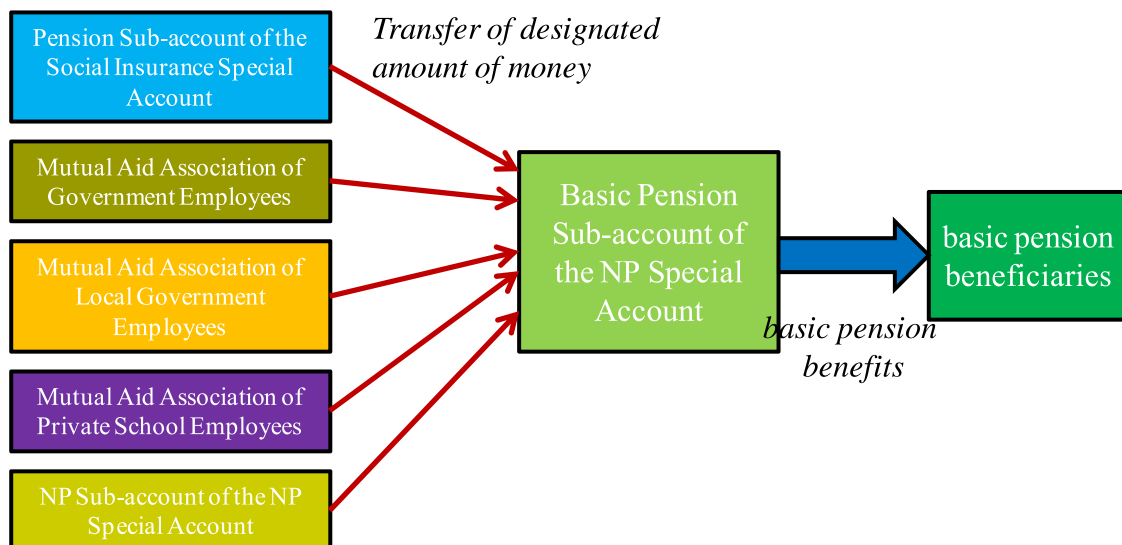


As **Fig 4** shows, every fiscal year the Basic Pension Sub-account of the NP Special Account collects money from the Pension Sub-account of the Social Insurance Special Account, the mutual aid associations and the NP Sub-account of the NP Special Account to finance the basic pension benefits. The amount to be transferred from each scheme is the share of the total amount of basic pension benefit payment of the year in proportion to the number of the insured people aged 20-59 plus the number of the dependent spouses aged 20-59 of the insured people in the case of schemes for employees and to the number of the covered people paying the contributions in the first

category of the NP scheme in the case of the NP Sub-account of the NP Special Account.

It should be noted here that when each scheme for employees or the NP Sub-account transfer the money to the Basic Pension Sub-account of the NP Special Account, the government give each scheme for employees or the NP Sub-account the national subsidy equivalent to a half of the money to be transferred. The rate used to be a third but was raised to a half in April 2009. However, the financial resources for this raising of the national subsidy rate are only secured for FY 2009 and FY 2010. The government should secure the future financial resources by the end of the FY 2010.

Fig 4 Financing the Basic Pension Benefits



The framework described above shows that the expenditures of the EPI scheme or strictly speaking of the Pension Sub-account of the Social Insurance Special Account are the sum of the EPI benefit payment and the transfer of designated amount of money to the Basic Pension Sub-account of the NP Special Account. Likewise the expenditures of the NP Sub-account of the NP Special Account that manages the flat-rate contributions of the people in the first category are the sum of the benefit payment proper to the people in the first category and the transfer of designated amount of money to the Basic Pension Sub-account of the NP Special Account. The expenditures of the MAA schemes are also of the same structure as the EPI scheme.

(4) Financial management framework of the NP and EPI schemes

Since the main focus of this paper is on the framework of financial management of the NP and EPI schemes, we describe it in this section[4]. It consists of the following five elements:

- Actuarial valuations are to be carried out at least every five years to look into the financial conditions of the schemes.
- The future contribution programmes are fixed and never reviewed unless some prescribed emergency happens.
- Financial equilibrium is checked for a finite period of about 100 years and not in perpetuity.
- Every actuarial valuation investigates the financial equilibrium of the scheme. If it is not attained, the indexation is modified in a prescribed manner to reduce the benefit level gradually until the financial equilibrium is attained.
- Every actuarial valuation also projects the future benefit level. If the modified indexation threatens to reduce the benefits below a prescribed level within the next five years, the modifying of the indexation should be stopped and the government should take measures to keep the benefit level no less than the prescribed level by drastically reviewing the benefit and contribution regime.

The framework is characterized by the fixed contribution programmes and by the modified indexation that is activated to restore financial equilibrium. **Table 1** shows the actual fixed contribution programmes of the EPI scheme and the NP scheme. It is stipulated in the law to show clearly that the contribution rate will never go up endlessly as **Table 1** literally tells. At the same time the benefit level is to be gradually and automatically reduced through the modified indexation until the financial equilibrium is attained. It is to avoid the fruitless political battle that would be fought if the legislative change through the Diet vote were necessary.

Given the framework, another anxiety increased. Some policy-makers expressed concerns that the benefit level would be automatically reduced endlessly so that the benefits the social security pension schemes provide would eventually lose adequacy. This was quite a natural reaction to the proposal of the modified indexation. The government, therefore, decided to work out a provision that would stop the modified indexation if the benefit level threatened to be reduced excessively. It is called the minimum benefit level provision. To stipulate it, the government had to define what the benefit level was. So the government also worked out its definition. In the following sections we

4. The framework of financial management of the MAA schemes is based on the principles that the indexation of the benefits is the same as the EPI scheme and that they actuarially review the contribution rates at least every five years. The latter part is different from the EPI practice since the EPI contribution rates for the future period are fixed and never reviewed unless some prescribed emergency happens.

summarize the modified indexation and the minimum benefit level provision.

Table 1 Fixed Contribution Programmes

the EPI scheme		the NP scheme (the 1st category)	
period	rate (%)	period	monthly rate (JPY)
Oct. 2004 -	13.934	- Mar. 2005	13,300
Sept. 2005 -	14.288	April 2005 -	13,580
Sept. 2006 -	14.642	April 2006 -	13,860
Sept.2007 -	14.996	April 2007 -	14,140
Sept.2008 -	15.35	April 2008 -	14,420
Sept. 2009 -	15.704	April 2009 -	14,700
Sept. 2010 -	16.058	April 2010 -	14,980
Sept. 2011 -	16.412	April 2011 -	15,260
Sept. 2012 -	16.766	April 2012 -	15,540
Sept. 2013 -	17.12	April 2013 -	15,820
Sept.2014 -	17.474	April 2014 -	16,100
Sept. 2015 -	17.828	April 2015 -	16,380
Sept. 2016 -	18.182	April 2016 -	16,660
Sept. 2017 -	18.3	April 2017 -	16,900

(Note) The contribution rate of the people covered in the first category of the NP scheme is expressed in terms of FY 2004 value. The actual amount is determined in accordance with the increase rate of the gross salary after FY 2004.

(5) Modified indexation

As the contribution programmes were fixed, the EPI and the NP schemes had to work out a means of attaining financial equilibrium other than the orthodox one through reviewing the contribution programmes. Faced with this, the government paid attention to the factors that were undermining the sustainability of the schemes. They were the decrease of the active population and the improvement of the life expectancy of beneficiaries. The government noticed that, if the benefit increase was to be reduced by the same rate as the decrease rate of the active participants in the schemes or as the increase rate of the life expectancy, the financial conditions of the schemes would be more balanced.

Based on this idea, the modified indexation was worked out. First we define the modifier. The modifier is the sum of the decrease rate of the active participants in the social security pension schemes including the MAA schemes and the increase rate of life expectancy at age 65. In the law the increase rate of life expectancy at age 65 is fixed at 0.3% taking account of the population

projection by the National Institute of Population and Social security Research because it would fluctuate considerably depending on whether there was an epidemic like flu or not in the year if we followed the actual experienced data.

Then we define the modified indexation. The modified indexation indexes the benefit amount to the principal index minus the modifier. If it becomes negative under the condition that the increase rate of disposable income is positive[5], we replace it by zero. Thus the nominal amount of benefits is guaranteed.

As long as the financial equilibrium is not attained, the modified indexation is applied to the benefit amount. When the financial equilibrium is attained, the modified indexation is stopped and return to the principal indexation.

(6) The definition of benefit level and the minimum benefit level provision

As stated in (4), the government had to work out the minimum benefit level provision that necessitated the clear and practical definition of the concept of benefit level. In order to define it, the government adopted a sort of replacement ratio of the benefits a specific household would receive to the average disposable income of the male active workers. It had been used for a very long time to show what the benefit level would be under the new law when the government proposed reforms to cope with the ageing of the population before the 2004 reform. This is the benefit level indicator we would like to discuss in detail in this paper.

The definition of the replacement ratio of a fiscal year as the benefit level indicator is the ratio of the sum of the benefits that a specified household receives in the year assuming that they reach the age of 65 in the year to the average disposable income of the male active workers in the year. The household consists of the husband and the wife of the same age. The husband works as a private employee covered by the EPI scheme from the age 20 to 59 for 40 years with the salary always equivalent to the average salary of male workers. The wife is always a non-working dependent housewife from the age 20 to 59.

The 2009 actuarial valuation shows that the replacement ratio of FY 2009 is 62.3%.

The concept of the replacement ratio as the benefit level indicator was stipulated in the law

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[5] If the increase rate of the disposable income is negative, the modified indexation in not activated. Furthermore if the increase rate of the CPI is negative while the increase rate of the disposable income is positive, the modified indexation is activated only for the people aged below 65 and not for the people aged 65 and over.

in the 2004 pension reform. It was introduced in order to construct a framework that would prevent the benefit level from being reduced excessively through the modified indexation. In fact the 2004 reform introduced the provision that the government should stop modifying the indexation if it is projected on an actuarial valuation that the replacement ratio threatens to go down below 50% within five years. The provision also orders the government to review the benefit and contribution regime and to take measures to keep the replacement ratio no less than 50%. This provision is called the minimum benefit level provision.

3. The 2009 Actuarial Valuation

Since the government has to carry out actuarial valuations every five years, it did so in 2009 and published its result in February 2009. The main result was that, under the intermediate assumptions, the replacement ratio or the benefit level indicator would go down from 62.3% in FY 2009 to 50.1% in FY 2038 and would keep 50.1% from FY 2038 onwards.

As long as this result is concerned, it appears that there is no problem at the moment. It should, however, be noted that there are two peculiar facts in the report. It does not mean that the report is erroneous. It only shows that the benefit level indicator has some weaknesses. They are not fatal defects but weaknesses anyway and cautious handling seems necessary.

One peculiarity is that the replacement ratio or the benefit level indicator increased from 59.3% in FY 2004 when the 2004 actuarial valuation was carried out to 62.3% in FY 2009. It is due to the fact that the average salary decreased for the last five years more than the CPI as **Table 2** shows. The smoothed disposable income increase in **Table 2** is the three-year average of the disposable income increase used for the revaluing of pensionable remunerations. According to the provisions of indexation, the index is the CPI increase rate when the increase rates of both the smoothed disposable income and the CPI are negative and the CPI increase rate is greater than the increase rate of disposable income. The provisions of indexation also stipulate that the index is the smoothed disposable income increase when the increase rate of smoothed disposable income is smaller than the CPI increase rate. Therefore from **Table 2** we see that in the years between 2004 and 2008 the indexation was almost zero[6]. The actual disposable income of the active male workers[7], on the other hand, steadily decreased during the period as we can easily imagine from **Table 2**; the salary decreased. Therefore the replacement ratio or the benefit level indicator increased.

[6] Furthermore there is another transitional provision for the indexation, but it becomes too much complicated if we look into it. So it is neglected here.
[7] Its monthly amount was JPY 393,000 in FY 2004 and JPY 358,000 in FY 2009.

Table 2 Annual Increase Rate of Salary and CPI

year	salary	smoothed disposable income	CPI
2000	1.0	-	-0.7
2001	-0.7	-	-0.7
2002	-1.9	-	-0.9
2003	-0.4	-	-0.3
2004	-0.7	0.3	0.0
2005	1.0	-0.4	-0.3
2006	-0.1	0.0	0.3
2007	-1.1	-0.4	0.0
2008	-1.8	0.9	1.4

(Source) Salary is based on the Monthly Labour Syrvey by the Ministry of Health, Labour and Welfare.
Smoothed disposable income is announced every year by the Ministry of Health, Labour and Welfare.
CPI is based on the Consumer Price Index by the Ministry of Internal Affairs and Communications.

Another peculiarity is that the basic pensions are projected to be reduced more than the earnings-related EPI benefits. **Table 3** shows that the basic pension benefits as percentage of the total benefits the specified household receives is projected to decrease from 59% in FY 2009 to 53% in FY 2038. It is attributable to the fact that longer period of modified indexation is necessary for the NP Sub-account of the NP Special Account to attain financial equilibrium. In fact the 2009 actuarial valuation shows that the modified indexation is projected to be applied to the basic pensions until FY 2038 while it is projected to be applied to the earnings-related benefits until FY 2019. Longer period of modified indexation means more reduction of benefit level. As a result of this the percentage decreases.

Table 3 Projection of the Basic Pensions As Percentage of the Total Benefits

	FY 2009	FY 2025	FY 2038 onwards
basic pension benefits as percentage of the total benefits the specified household receive	59%	58%	53%

(Source) The author's calculation based on "The current financial conditions and the prospect of the NP and EPI schemes: the results of the 2009 actuarial valuation" that was submitted to the Pension Subcommittee of the Social Security Council by the Ministry of Health, Labour and Welfare

4. Weaknesses of the Benefit Level Indicator

The two peculiar realities described in the previous chapter reveal some weaknesses of the benefit level indicator.

The first peculiarity implies that, if the salary remains the same level as that of the FY 2009, the pension benefits may possibly be reduced to 50% of the FY 2009 salary level that is lower than the FY 2004 level. However the adequate level of benefit is not proportionate of the average per-capita disposable income because the price of essential items for daily life does not change so much whatever the salary level is. In other words the lower the salary level is the higher is the adequate benefit level as percentage of the salary level. It can, therefore, be said that, when the salary level is lower than the FY 2004 level, it is to reduce the benefit level excessively if the modified indexation reduce the benefit level to 50% of the per-capita disposable income of active male workers. The benefits may well lose adequacy.

This is the first weakness of the benefit level indicator. In order to correct it, the government should first monitor the salary level and if it remains lower than the FY 2004 level, the government should work out a revised minimum benefit level by monitoring the people's expenditures for daily life as expressed, for example, in the results of the Survey of Household Economy conducted by the Ministry of Internal Affairs and Communications every five years. The revised minimum benefit level in such a case will be higher than 50% of the per-capita disposable income of male active workers. The modified indexation might be stopped if the benefit level threatens to go below this level.

The second peculiarity clearly reveals that the benefit level indicator tells nothing about the basic pension benefit level. Since the modified indexation is first applied to the basic pension benefits until the financial equilibrium is attained in the NP Sub-account of the NP Special Account, the benefit reduction may possibly be excessive. However, since there are many beneficiaries who live only on basic pension benefits, the government should monitor it and take every measure to keep the basic pension benefit capable of compensating for the basic expenditures[8] as set as the target level in the 1985 reform. The Survey of Household Economy also serves as a good source of information.

[8] The basic expenditures include those for food, housing, fuel, lights and water charges, furniture and household utensils, clothes and footwear.

5. Concluding Remarks

When planning the modified indexation, we unconsciously assumed that the salary level would go up in the long run; it would restart going up even if it dropped once in a while. The reality is that, as **Table 2** shows, it continued to decrease for a fairly long time. If such situation happens and the salary level is lower than the FY 2004 level when the benefit level is close to 50%, the benefit level will lose adequacy if the modified indexation continues. This should be avoided. We should bear in mind that the lower the salary level is the higher is the adequate benefit level as percentage of the per-capita disposable income of male active workers.

The weaknesses of the benefit level indicator are not fatal defects. As mentioned above, there is a way to correct them. However, from this experience, we can say that too much dependence on one indicator is almost always misleading in some respects as long as the social security pension schemes are concerned.

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