Social Security Pensions in Japan: A Balance Sheet Approach

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Abstract

Japan is experiencing a rapid ageing of its population with a subsequent strain on its social security pensions. Despite periodic reforms over recent decades and comprehensive reforms in 2004, many outstanding issues remain. Using the balance sheet approach we show that despite its recent reforms, Japan's social security pensions face substantial excess liabilities. As well, the reforms themselves may have exacerbated the incentive-compatibility problem.

1. Introduction

Japan already has the oldest population in the world. It has built a generous social security pension program. In 2001 the income statement of this program moved into deficit and its balance sheet has continued to suffer from huge excess liabilities. This has been accompanied by a growing distrust of the government's commitment on public pensions and increased concern about the incentive-compatibility problem. The 2004 reforms went some way towards addressing these issues.

This paper uses a balance sheet approach to describe the current financial performance of social security pensions in Japan, and analyses the impact of the recent reform measures. The balance sheet approach was first used about 700 years ago in Italy and since then has become one of

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the two major accounting tools. However, it has been underutilized for public policy analysis. Benefits of the balance sheet approach are three-fold. First, it describes the current financial status in stock terms by presenting assets and liabilities with their compositions. Second, it implies how smoothly future financing will be carried out, and third, it makes clear the impacts of alternative policy measures on future financing.

The paper begins with a brief sketch of the Japanese social security pension program and summarizes Japan's major pension problems. It then explains the 2004 pension reforms and uses the balance sheet approach to analyse the implications for the Japanese economy. The paper concludes with a discussion of future policy options.

2. Japanese Pension Provisions Before the 2004 Reforms

Since 1980, Japan has undertaken piecemeal pension reforms every 5 years or so to address the stresses caused by anticipated demographic and economic factors. This has resulted in a step-by-step reduction in the generous pension benefits, an increase of the normal pensionable age from 60 to 65, and an increase in the pension contribution rate. Yet, in 2004, the pension provisions still remained generous and the system seemed likely to face serious financial difficulties in the future.

Japan currently has a two-tier benefit system. All sectors of the population receive the first-tier, flat rate basic benefit. The second-tier earnings-related benefit applies only to employees.[1] The system operates largely like a pay-as-you-go defined benefit program.

The flat-rate basic pension covers all residents aged 20 to 60. The full old-age pension is payable after 40 years of contributions, provided the contributions were made before 60 years of age. The maximum *monthly* pension of 66,200 yen (in 2004 prices) per person is payable from age 65.[2] This benefit is indexed annually to reflect changes in the consumer price index (CPI). The pension may be claimed at any age between 60 and 70 years and is subject to actuarial reduction if claimed before age 65, or actuarial increase if claimed after 65 years.

Earnings-related benefits are given to all employees. The accrual rate for the earnings-related component of old-age benefits is 0.5481 per cent per year; 40 years' contributions will thus earn 28.5 per cent of career average monthly real earnings.[3] The career-average monthly earnings are calculated over the employee's entire period of coverage, adjusted by a net-wage index factor, and converted to the current earnings level. The full earnings-related pension is normally payable from age 65 to an em-

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ployee who is fully retired.[4] An earnings test is applied to those who are not fully retired. The current replacement rate (including basic benefits) for take-home pay or net income is about 60 per cent for a typical male retiree (with an average salary earned during 40 years of coverage) and his dependent wife. This translates to a *monthly* benefit of about 233,000 yen in 2004.

Equal percentage contributions are required from employees and their employers. The contributions are based on annual standard earnings including bonuses. Before the 2004 reforms, the total contribution rate for the principal program for private-sector employees (Kosei-Nenkin-Hoken, KNH), was 13.58 per cent. Non-employed persons between the ages of 20 to 60 years paid flat-rate individual contributions. The current rate since April 1998 is 13,300 yen per month.Those who cannot pay for financial reasons are exempt. The flat-rate basic benefits for the period of exemption are one-third of the normal amount.

As well, if the husband has the pension contribution for social security deducted from his salary, his dependent wife is automatically entitled to the flat-rate basic benefits, and she is not required to make any individual payments to the public pension system. The government subsidizes one-third of the total cost of the flat-rate basic benefits plus administrative expenses. There is however no subsidy for the earnings-related part. All social security pension contributions are tax-deductible, while benefits are virtually tax-exempt.

For 2004 the aggregate amount of social security pension benefits is estimated at around 46 trillion yen, or about 9 percent of GDP.[5]

3. Demography and its Impact on Financing Social Security

In January 2002, the Japanese National Institute of Population and Social Security Research (NIPSSR) released its latest population projections. These indicate that the total population will peak at 128 million in 2006 and then begin to fall steadily, decreasing to about 50 per cent of the current number by 2100.

The total fertility rate (TFR) was 1.29 in 2003 and there is little sign that it will stabilize or return to a higher level. Yet, the 2002 *medium variant* projections assume that it will record the historical low of 1.31 in 2006 and will gradually rise to 1.39 around 2050, progressing slowly to 2.07 by 2150. The number of births in 2003 was about 1.12 million and will continue to decrease to less than 1.0 million by 2014, falling further to 0.67 million in 2050.

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Because it has the world's longest life expectancy, Japan is now experiencing a very rapid ageing of its population. The number of the elderly (65 years and above) was 24.9 million in 2004. This will increase sharply to reach 34 million by 2018, remaining around 34-36 million thereafter until around 2060. Consequently the proportion of the elderly (65 years and above) will go up very rapidly from 19.5 per cent in 2004 to 25.3 percent by 2014, rising further to more than 30 per cent by 2033. Japan already has one of the oldest populations in the world.

Currently in Japan, nearly 70 per cent of social security benefits are distributed to the elderly. Along with the ailing domestic economy, the rapid population aging will put increased stresses on the financing of social security.

In May 2004 the Ministry of Health, Labor and Welfare published the latest estimates of the cost of social security using the 2002 population projections of the NIPSSR. According to these estimates, the aggregate cost of social security was 17.2 per cent of GDP in 2004. This is expected to increase steadily to 24.3 per cent by 2025, if the current provisions for benefits remain unchanged. Of the various social security costs, that of pensions is predominant, amounting to 9.2 per cent of GDP in 2004, with an expected increase to 11.6 per cent by 2025. The cost for health care is 5.2 per cent in 2004, but is projected to rapidly rise to 8.1 per cent by 2025.

The Japanese economy is still reeling from the effects of the burst in the asset price bubble and the subsequent sharp downturn in economic activity. The expected decline in its population will soon be reflected in a sharp reduction in young labour, in a falling savings rate and in a decrease in capital formation, all of which will contribute to a further shrinking of the country's economy.

4. Some Basic Facts on Pensions

Any pension reform proposal must take into account the current basic facts on social security pensions. Of these, the following five are especially crucial.

A persistent deficit in the income statement

Since 2001, the pension scheme for private sector employees (KNH) has been facing an income statement deficit. It recorded a deficit of 700 billion yen in 2001, increasing to 4.2 trillion yen in 2002. It is estimated that this deficit will persist for a long time, unless radical changes are made to KNH financing.

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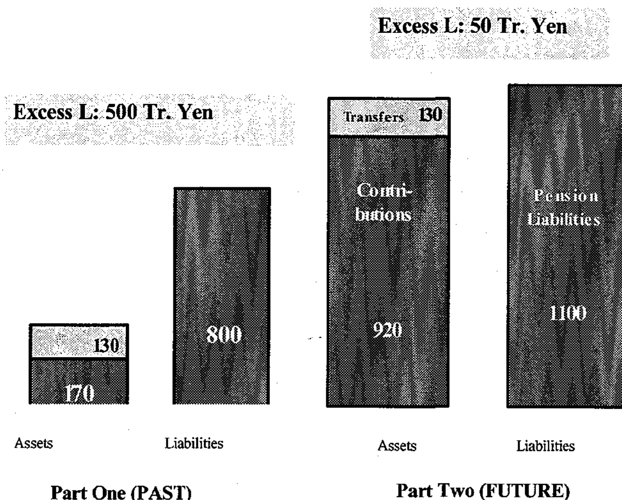
Huge excess liabilities in the balance sheet

The KNH balance sheet is shown in Figure 1. In calculating the balance sheet, it was assumed that: the annual increases in wages and the CPI were 2.1 percent and 1.0 percent respectively, nominal, while the discount rate is 3.2 percent annually; and the current contribution rate of the KNH of 13.58 percentage points, would remain unchanged over the projection period (to the year 2100).

Figure 1 indicates that as at the end of March 2005, excess liabilities of the KNH are estimated at 550 trillion yen, which is a quarter of the total liabilities.[6]

Figure 1 KNH Balance Sheet: Before Reform



The balance sheet set out in Figure 1 has two parts. Part one illustrates the assets and liabilities accrued from past contributions, while part two refers to assets and liabilities accrued from future contributions. It can be seen that as far as part two is concerned, any excess liabilities are almost eliminated. That is, the funding sources of the current provisions will be sufficient to finance future benefits. Here the only task left is to slim down future benefits by 4.5 percent.

But if we look at part one of the balance sheet, things appear quite different. The remaining pension liabilities are estimated to be 800 trillion yen, while pension assets are only 300 trillion yen (comprising a funded reserve of 170 trillion yen plus transfers from general revenue of 130 trillion yen). The difference, which is quite large at about 500 trillion yen,[7] accounts for most of the excess liabilities in the KNH, and is equivalent to about 100 percent of GDP of Japan in 2004.

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In the past, too many pension promises were made, with insufficient funding sources. As a result, the Japanese have enjoyed a long history of generous social security pensions. However, contributions made in the past were relatively small, resulting in a fairly small funded reserve. Consequently, the focus of the true crisis in Japanese social security pensions is how to handle the excess liabilities of 500 trillion yen representing entitlements from contributions made in the past.

The heavy burden of pension contributions

In Japanese public policy debates, one of the principal issues has been how to cut down personal and corporate income tax. But recently the situation has changed drastically. Social security contributions (for pensions, health care, unemployment, work injury and long-term care) were 55.6 trillion yen (11.2 percent of GDP) for FY2003, more than all tax revenues (43.9 trillion yen) of the central government for the same year. This has been the case since 1998. For example FY2003 revenue from personal income tax was 13.8 trillion yen and from corporate income tax 9.1 trillion yen, while revenue from social security pension contributions stood at 29.0 trillion yen. As a result many Japanese now feel that the burden of social security pension contributions is far too heavy and employers have begun to express serious concerns about any further increases in social security contributions.

Overshooting the income transfer between generations

Recent data shows the amazing fact that currently in Japan the elderly are better-off than those aged 30 to 44 in terms of per-capita income after redistribution (see Figure 2, opposite). This suggests that current pension benefits may be too generous and there is still room for a reduction in benefits provided to the current retired population (which would address the excess liabilities indicated by the balance sheet).

An increasing drop-out rate

In the past 20 years, the Japanese government has made repeated changes to the pension program, increasing social security pension contributions and reducing benefits through raising the normal pensionable age while reducing the accrual rate. Similar piece-meal reforms are likely to continue into the future.

Many Japanese feel that the government is breaking its promise. As distrust of the government's pension commitment builds up, non-participation is growing. In 2002 nearly 50 percent of non-salaried workers and

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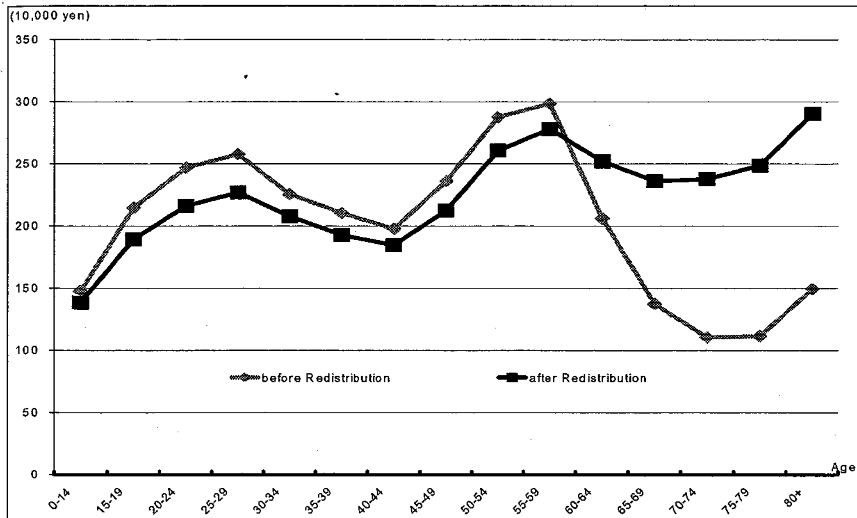

Figure 2 Per capita income by age in Japan

persons with no occupations dropped out from the basic level of old-age income protection, owing to exemption or failure to pay contributions (see Figure 3, page 248).

Also, employers are trying to find ways of avoiding to pay social security pension contributions. Indeed, the aggregate amount of the KNH contributions has been decreasing since 1998, despite no change in the contribution rate.[8] Any further escalation in the social security contribution rate is likely to induce an even higher drop-out rate.[9]

5. The 2004 Pension Reforms: Main Features and Remaining Difficulties[10]

The administration of Prime Minister Koizumi Junichiro submitted a set of pension reform bills to the National Diet on February 10, 2004. These were enacted on June 5. This section will describe the gist of these reforms and explore issues that remain to be addressed.

Increases in contributions

Salaried workers are, as a rule, enrolled in the KNH, which is part of the public pension system. Contributions under this plan had since October 1996 been set at 13.58 per cent of annual income, paid half by the worker and half by the employer. The newly enacted reforms raised this rate by 0.354 percentage points in October 2004. The rate will rise every September thereafter by the same amount until 2017, after which it will remain

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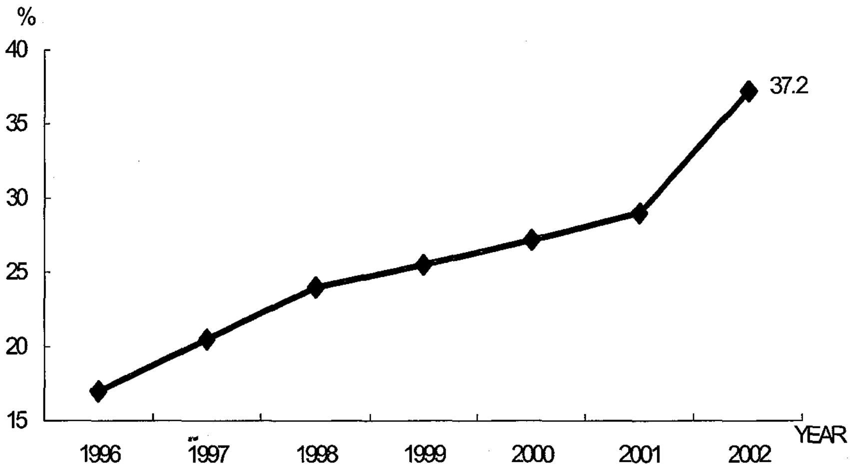

Figure 3. Drop-out rate from SS Pensions (Non-employees) Delinquency in Paying Pension Contributions

fixed at 18.30 per cent of annual income. The portion paid by workers will accordingly rise from the current 6.79 per cent of annual income to 9.15 per cent.

For an "average" male company employee earning 360,000 yen a month plus an annual bonus equivalent to 3.6 months' pay, total contributions will increase by nearly 20,000 yen a year starting from October 2004, and by the time they stop rising in September 2017, they will have reached just under 1.03 million yen a year (of which the share paid by the worker will be just over 514,000 yen or 35 per cent more than the current level of contributions).

Those who are not enrolled in the KNH or other public pension schemes for civil servants, are required to participate in the National Pension plan, which provides the so-called basic pension only - (the basic pension also forms the first tier of benefits under the KNH and other public pension systems for civil servants). Contributions under this plan will rise by 280 yen each April from the current 13,300 yen per month until they plateau at 16,900 yen (at 2004 prices) in April 2017. The actual rise in National Pension contributions will be adjusted according to increases in general wage levels. In addition, the government will increase its subsidies for the basic pension. Currently one-third of the cost of basic pension benefits is paid from the national treasury; this share is to be raised in stages until it reaches one-half in 2009.

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Reductions in benefits

Benefits provided under the KNH consist of two tiers; the flat-rate basic pension, which is paid to all public pension plan participants, and a separate earnings-related component. The latter is calculated on the basis of the worker's average preretirement income, converted to current values. Until now, the index used to convert past income to current values was the rate of increase in take-home pay. Under the recently enacted reforms, this index will be subject to a negative adjustment over a transition period based on changes in two demographic factors. These are the decline in the number of participants and the increase in life expectancy. This period of adjustment is expected to last through to 2023.

The application of the first demographic factor means that benefit levels will be cut to reflect the fact that fewer people are supporting the pension system. The actual number of people enrolled in all public pension schemes will be ascertained each year, and the rate of decline will be calculated based on this figure. The average annual decline is projected to be around 0.6 points.

The second demographic factor will adjust for the fact that people are living longer and thus collecting their pensions for more years; the aim is to slow the pace of increase in the total amount of benefits paid as a result of increased longevity. This factor will not be calculated by tracking future movements in life expectancy. Instead, it has been set at an annual rate of about 0.3 percentage points on the basis of current demographic projections for the period through to 2025. Together, the two demographic factors are thus expected to lead to a negative adjustment of about 0.9 points a year during the period in question.

How will these changes affect people's actual retirement benefits? Let us consider the case of a pair of "typical" KNH beneficiaries as defined by the Ministry of Health, Labor, and Welfare: a 65-year-old man who earned the average wage throughout his 40-year career and his 65-year-old wife who was a full-time homemaker for 40 years from her twentieth birthday. In FY 2004, this typical couple would receive a retirement income of 233,000 yen a month.

How does this amount compare to what employees are currently taking home? The average monthly income of a salaried worker in 2004 was around 360,000 yen, before taxes and social insurance deductions. Assuming that this is supplemented by bonuses totaling an equivalent of 3.6 months' pay, the average annual income is roughly 5.6 million yen. Deducting 16 per cent of this figure for taxes and social insurance payments leaves a figure for annual take-home pay of about 4.7 million yen, or 393,000 yen a month.

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The 233,000 yen provided to the typical pensioners is 59.3 per cent of 393,000 yen. However, under the 2004 reforms this percentage, or replacement rate, will gradually decline to an estimated figure of 50.2 per cent by FY 2023 (assuming that consumer prices and nominal wages rise according to government projections by 1.0 per cent and 2.1 per cent a year, respectively). Over the next two decades, then, benefit levels are projected to decline by roughly 15 per cent by comparison with wage levels.

The revised pension legislation stipulates that the income replacement rate is not to fall below 50 per cent for the typical case described above, so the transition period of negative adjustment will come to an end once the replacement rate declines to 50 per cent. This provision was included to alleviate fears that retirement benefits would continue to shrink without limit.

How will the reforms affect those who are already receiving their pensions? Until now, benefits for those 65 years old and over were adjusted for fluctuations in the consumer price index. This ensured that pensioners' real purchasing power remained unchanged and helped ease postretirement worries. But this cost-of-living link will effectively be severed during the transition period, since the application of the demographic factors will pull down real benefits by around 0.9 points a year. In principle, however, nominal benefits are not to be cut unless there has also been a drop in consumer prices. Once the transition period is over, the link to the consumer price index is to be restored.

Changes to provisions for working seniors and divorcees

People aged 60-64 who are receiving pensions and also have wage income have up to now had their benefits reduced by a flat 20 per cent, regardless of how much or little they earn. This rule was abolished in the 2004 reforms so as not to discourage older people from working. However these older workers will still be subject to the current rule that if the sum of wages and pension benefits exceeds 280,000 yen a month (after factoring in annual bonuses), the pension benefits are to be cut by 50 per cent of the amount in excess of this level.

Workers aged 70 and over, meanwhile, have been exempt from paying into the KNH, even if they are still on a company's payroll. And they have not had their benefits reduced no matter how much they earn. Beginning in April 2007, however, their benefits will be reduced if they are high-income earners. Those receiving more than an equivalent of 480,000 yen a month in wages and pension benefits will have their benefits cut by 50 per cent of the amount in excess of this level. This is a rule that currently

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applies to those aged 65 to 69, and it will be maintained for this age group. The over-70s group will still be entitled to the full amount of the basic pension, and they will continue to be exempt from paying contributions.

Currently divorced wives are not legally entitled to any portion of their former husbands' earnings-related pension benefits, but this will change under the 2004 reforms. Couples who divorce after April 2007 will be able to split the rights to the earnings-related portion of the husband's pension that accrued during their marriage. The wife will be able to receive a share of up to 50 per cent of these rights with the actual share to be determined by agreement between the two. For rights accruing after April 2008, moreover, a full-time homemaker will be able to automatically receive half of her husband's benefits in case of divorce by filing a claim at a social insurance office. Underlying this rule is the assumption that even though the contributions are paid in the husband's name, the wife has provided half of the couple's livelihood through her work as a homemaker.[11]

Improved survivors' benefits and child-raising concessions

Until now widowed spouses younger than 30 and without children under the age of 18 have been entitled to lifelong benefits under the survivor's pension scheme (based on the earnings of the deceased spouse). After April 2007, however, they will receive benefits for no longer than five years. As well, workers taking child-care leave are exempt from making pension contributions, and to prevent a decrease in their future benefits due to this period of nonpayment, they are treated as having continued their full payments, even when they have no income. This special exemption can now be claimed for up to one year after childbirth, but starting in April 2005 the period will be extended until the child reaches age three. Also from April 2005, parents who change their working arrangements to put in shorter hours so as to care for children under age three and who take a corresponding cut in pay will be treated as having worked full time and earned a full salary. Actual contributions during this three-year period, though, will be based on the lower earnings.

Other public and private pension reforms

As a rule, a person cannot simultaneously receive more than one public pension. But the recent reforms have created an exception. People with disabilities who had gainful employment and paid pension contributions will, from April 2006, be entitled to not only their basic disability pension but also the earnings-related component of the old-age pension or survivor's pension. This measure is designed to encourage greater employment among these people.

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Participants in the National Pension plan who have low incomes currently pay either half of the regular contributions or none at all. There will be a finer tuning of payment exemptions starting in July 2006, when low-income earners may also be exempt from paying one-quarter or three-quarters of the regular contributions. As well, the administrative processes will be improved and streamlined. Under the current setup, pension plan participants can find out how much they will receive in benefits only by going to a social insurance office with their pension passbooks after they have reached age 55. From April 2008, however, such information will be disclosed to all contributors each year, along with their payment records.

The reforms cover private pension plans as well. From October 2004, the upper limit of the amount that can be put aside each month under company-funded defined-contribution pension plans was raised from 36,000 yen to 46,000 yen in cases where there is no other corporate pension plan and from 18,000 yen to 23,000 yen where there is another plan in effect. The ceiling on monthly installments under individually funded defined-contribution plans for salaried workers was raised from 15,000 yen to 18,000 yen where there is no corporate pension coverage, while the cap for the self-employed remained unchanged at 68,000 yen. The higher ceilings for private plans are designed to make up for the anticipated smaller benefits of public old-age schemes.

Are the 2004 reforms incentive-compatible?

Social insurance contributions in Japan already exceed the amount collected in national taxes, and contributions to the pension system are by far the biggest social insurance item. If this already huge sum is increased by more than 1 trillion yen a year, as the government plans, both individuals and companies are very likely to change their behaviour. Government projections of revenues and expenditures, though, completely ignore the prospect of such change.

It is possible that companies will reconsider their hiring plans and wage scales to avoid the higher social insurance burden. They may cut back on recruitment of new graduates and become more selective about mid-career hiring as well. Many young people will be stripped of employment opportunities and driven out of the labour market, instead of being enlisted to support the pension system with a percentage of their income. As well, the employment options for middle-aged women who wish to re-enter the work force will be reduced and, as only a few older workers will be able to continue commanding high wages, there is likely to be a dramatic rise in the number of ageing workers who will be forced to choose between remaining on the payroll with a cut in pay or settling for retire-

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ment. It is possible that many more companies will either choose or be forced to leave the KNH, causing the number of subscribers to fall far below the government's projections and pushing the system closer to bankruptcy.

If these events come to fruition, the jobless rate on the whole could rise. The Japan Ministry of Economy, Trade, and Industry has estimated that higher pension contributions could lead to the loss of 1 million jobs and boost the unemployment rate by 1.3 percentage points.

The government plans to increase pension contributions annually for the next 13 years will therefore exert ongoing deflationary pressure on the Japanese economy. For the worker, a rise in contribution levels means less take-home pay. As a result, consumer spending is likely to fall, and this will surely hinder prospects for a self-sustaining recovery and return to steady growth. Another problem with increasing pension contributions is that they are regressive, since there is a ceiling for the earnings on which payment calculations are based and unearned income is not included in the calculations at all.

One major objective of the 2004 reforms is to eventually eliminate the huge excess liabilities in the balance sheet of the KNH. The plan is to generate a surplus by (1) increasing contributions, (2) increasing payments from the national treasury, and (3) reducing benefits. The policy measures adopted in the 2004 pension reform bill will induce huge *excess assets* of 420 trillion yen in part two of the balance sheet while offsetting excess liabilities of the same amount in part one, as shown in Figure 4 (page 254). The huge excess assets of part two of the balance sheet imply that future generations will be forced to pay more in contributions than the anticipated benefits they will receive. That is, it is estimated that in aggregate the present value of future benefits will be around 80 percent of the present value of future contributions.

It is as if the Japanese government is cutting paper not with scissors but with a saw. Younger generations are most likely to intensify their distrust against Government and the incentive-compatibility issue or dropout problem will intensify. The management lobby (Nippon Keidanren) and trade unions (Rengo) both oppose any further increases of more than 15 percentage point in the KNH contribution rate.

A declining replacement rate

As noted above, those who are already receiving their pensions will see their benefits decline in real terms by an average 0.9 percentage points per year. The government's scenario sees consumer prices eventually rising 1.0 per cent a year and take-home pay by 2.1 per cent a year. This

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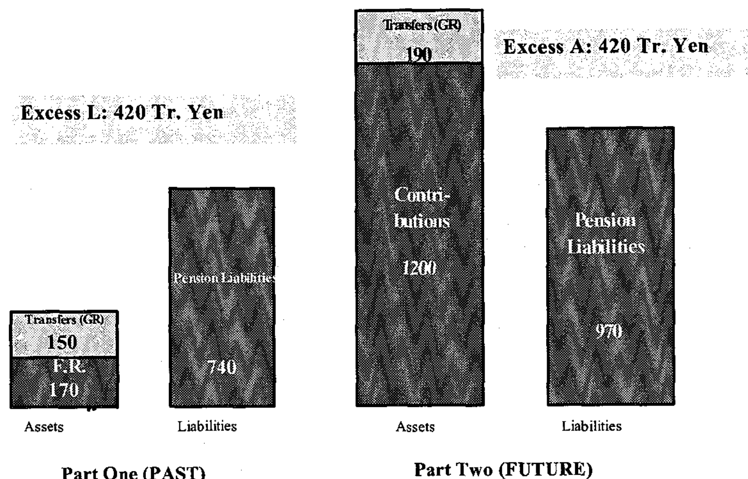
Figure 4 KNH Balance Sheet: After Reform



means that the typical beneficiary who begins receiving 233,000 yen a month at age 65 in 2004 will get roughly 240,000 yen at age 84 in 2023. In other words, nominal benefits will remain virtually unchanged for two decades, despite the fact that average take-home pay of the working population is projected to have risen by over 40 per cent. The income replacement rate, which stood at nearly 60 per cent at age 65, will dwindle to 43 per cent by the time the typical recipient turns 84. The promise of benefits in excess of 50 per cent of take-home pay does not apply, therefore, to those who are already on old-age pensions.

Automatic balance mechanism: still incomplete

The so-called demographic factors are likely to continue changing for the foreseeable future. The government itself foresees the number of participants in public pension plans declining over the coming century: The estimated figure of 69.4 million participants in 2005 is expected to fall to 61.0 million in 2025, 45.3 million in 2050, and 29.2 million in 2100. This corresponds to an average annual decline of 0.6 per cent through 2025, 1.2 per cent of the quarter century from 2025, and 0.9 per cent for the half century from 2050. In other words, the decline in the number of workers who are financially supporting the public pension system will continue for many decades.

The 2004 reforms, however, adjust benefit levels in line with the decline in the contribution paying population for the next 20 years only; the government's "standard case" does not foresee any further downward revisions, even if the number of participants continues to fall. If the government really anticipates an ongoing decline in participation, there is no

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good reason to abruptly stop adjusting benefit levels after a certain period of time. Sweden and Germany, for instance, have adopted permanent mechanisms whereby benefit levels are automatically adjusted for fluctuations in demographic factors.

The decision to keep the typical income replacement rate at 50 per cent at the point when pension payments commence represents, in effect, the adoption of a defined benefit formula. Maintaining both fixed contributions on the one hand and defined benefit levels on the other is not an easy task, as there is no room to deal with unforeseen developments. The government will be confronted with a fiscal emergency should its projections for growth in contributions and a reversal in the falling birthrate veer widely from the underlying assumptions. For example, the government has based its population figures on the January 2002 projections of the National Institute of Population and Social Security Research. Under these projections, the medium variant for the total fertility rate (the average number of childbirths per woman) falls to 1.31 in 2007, after which it begins climbing, reaching 1.39 in 2050 and 1.73 in 2100. Actual figures since the projections were released have been slightly lower than this variant, and there are no signs whatsoever that the fertility rate will stop declining in 2007.

The normal pensionable age

If the government is to keep its promise on an upper limit for contributions and a lower limit for benefits, the only policy option it will have in the event of a financial shortfall will be to raise the age at which people begin receiving benefits. The reform package makes no mention of such a possibility; policymakers no doubt chose to simply put this task off to a future date.

Increasing transfers from general revenue, why?

By FY 2009 the share of the basic pension benefits funded by the national treasury will be raised from one-third to one-half. This means that more taxes will be used to cover the cost of benefits. Taxes are by nature different from contributions paid by participants in specific pension plans, and there is a need to reconsider the benefits that are to be funded by tax revenues.

The leaders of Japanese industry tend to be quite advanced in years. For the most part, they are over the age of 65, which means that they are qualified to receive the flat-rate basic pension. Even though they are among the wealthiest people in the country, they are entitled to the same basic pension as other older people hovering around the poverty line. Using tax

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Table 1. Results of a Sensitivity Analysis (units: trillion yen)

	Discount rate 2.1%				Discount rate 3.2%				Discount rate 4.0%			
Period	2005-2040	2005~2080	2005~2100	2005~infinity	2005~2040	2005~2080	2005~2100	2005~infinity	2005~2040	2005~2080	2005~2100	2005~infinity
Assets												
Past												
Funded reserve	170	170	170	170	170	170	170	170	170	170	170	170
TGR	150	190	190	190	130	150	150	150	120	130	130	130
Sub-total	320	360	360	360	300	320	320	320	290	300	300	300
Future												
Contributions	840	1,510	1,750	2,370	720	1,100	1,200	1,350	620	870	920	970
TGR	60	250	330	520	50	150	190	230	40	110	120	140
Sub-total	900	1,760	2,080	2,890	770	1,250	1,390	1,580	660	980	1,040	1,110
Total	1,220	2,120	2,440	3,250	1,070	1,570	1,710	1,900	950	1,280	1,340	1,410
Liabilities												
Past	750	870	870	870	660	740	740	740	590	640	640	640
Future	370	1,280	1,650	2,530	290	820	970	1,180	240	580	650	730
Total	1,120	2,150	2,520	3,410	950	1,560	1,710	1,920	830	1,210	1,290	1,370
Excess Liabilities												
Past	430	510	510	510	360	420	420	420	300	340	340	340
Future	-530	-480	-430	-360	-480	-430	-420	-400	-420	-400	-390	-380
Total	-100	30	80	150	-120	-10	0	20	-120	-60	-50	-40

Note: TGR=Transfers from General Revenue

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Table 2 Benefit/ Contribution Ratio

	Discount rate (%)		
	2.1	**3.2**	**4.0**
1. year: 2005~2100			
Benefits, tri. yen	1,650	970	650
Contributions, tri. yen	1,750	1,200	920
Benefits/contributions, %	94.3	80.9	70.7
2. year: 2005~infinity			
Benefits, tri. yen	2,530	1,180	730
Contributions, tri. yen	2,370	1,350	970
Benefits/contributions, %	106.8	87.5	75.3

revenues to finance a bigger share of the basic pension essentially means asking taxpayers to foot a bigger bill for the benefits of wealthy households as well. For an elderly couple, the tax-financed portion of the basic pension will rise from 530,000 yen a year to 800,000 yen. If a need arises to raise taxes at a future date, who will then actually agree to pay more? Few people will be willing to tolerate such wasteful uses of tax revenue.

6. A Sensitivity Analysis

Needless to say, conclusions drawn by the balance sheet in the preceding section are sensitive to the major assumptions such as the discount rate, the accounting period, and demographic/economic conditions. This section will consider the robustness of our conclusions to alternative assumptions. We consider three alternative annual discount rates - 2.1 per cent, 3.2 per cent and 4.0 per cent, all in nominal terms. For the accounting period, we consider four cases - 35 years, 75 years, 95 years, and infinity. The date of evaluation is the end of March 2005.

Tables 1 and 2 present the result of our sensitivity analysis. Assumptions for demographic and other economic conditions remain unchanged. The Japanese Government says that with the 2004 pension reform, the balance sheet of the KNH has completely become healthy, with all excess liabilities eliminated. This conclusion does not hold, however, with alternative assumptions – such as a longer accounting period (of more than 95

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years) or a lower discount rate (of less than 3.2 per cent per annum in nominal terms) see Table 1 (page 256). For a discount rate of 3.2 per cent, the excess liabilities are still positive, and increase to about 20 trillion yen if we extend the accounting period to infinity. For a discount rate of 2.1 per cent the excess liabilities become 150 trillion yen. Thus, the "healthy" balance sheet hypothesis is crucially dependent on the discount rate and the accounting period.

Table 2 (page 257) compares the present values of discounted future contributions and the pension benefits entitled by them. As we described earlier in this paper, the future pension benefits will be about 80 per cent of the future contributions. This gap could lead to an incentive-compatibility problem. However, with a lower assumed discount rate, the result can be quite different. If we assume a 2.1 per cent discount rate for example, the benefit/contribution ratio will increase more than 100 per cent within the infinite time horizon, and the pension benefits could be more than the contributions. Under these assumptions incentive-compatibility is not a problem.

In summary, the choice of the discount rate and the accounting period is quite decisive in the balance sheet approach. The 95-year accounting period seems rather a little shorter in the Japanese context, since the "healthy" balance sheet hypothesis can be misleading. When it comes to the choice of a discount rate, a rate of return from investment is often used. The assumption of a 3.2 per cent discount rate is therefore reasonable. In the FY 1999 balance sheet, the Japanese Government assumed an annual discount rate 4.0 per cent, which was equivalent to the rate of return from investment. In the FY 2004 balance sheet, the Japanese Government assumes two discount rates; 2.1 per cent (the rate of increases in wages and salaries) and 3.2 per cent (the rate of return from investment). However, the rationale to link the assumed discount rate to the rate of increase in salaries is unclear.

7. Future Policy Options

The Ministry of Health, Labor and Welfare has shown a great interest in switching the pension system to an NDC (notional defined contribution) arrangement. It has indicated, however, that it does not consider such a switch to be realistic until the KNH contribution rate reaches its peak level in 2017.

We believe however, that an NDC arrangement could be introduced in Japan sooner, if we *separate* the "legacy pension" problem from the issue of re-building a sustainable pension system for the future. The legacy

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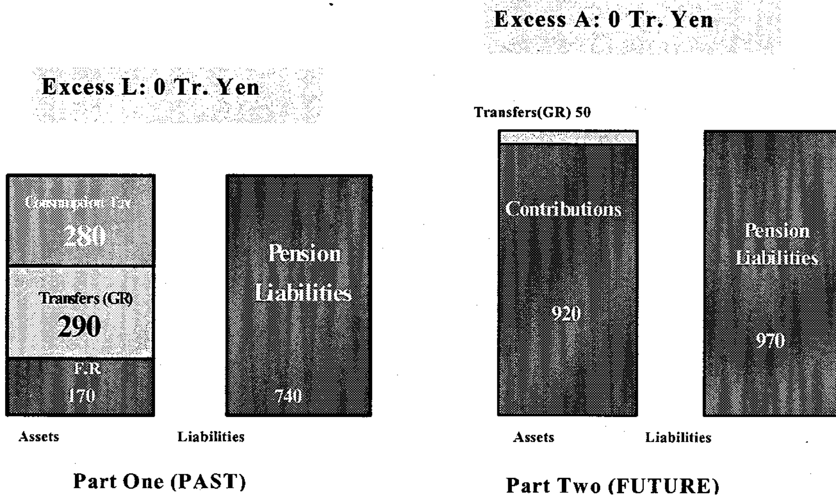
Figure 5 KNH Balance Sheet: Alternative Reform



pension problem is equivalent to *sunk costs* in the economic context. It can be solved not by increasing the KNH contribution rate but by introducing a new tax – for example a 3.2 per cent earmarked consumption tax and an intensive interjection of the increased transfers from general revenue (see Figure 5).[12] Needless to say, the current generous benefits have to be reduced more or less by the same percentage in the aggregate level as implemented in the 2004 pension reform bill.

As far as part two of the balance sheet is concerned, which relates to future contributions and promised pension benefits entitled by future contributions, a switch to the NDC is possible and preferable. The KNH contribution rate can be kept unchanged at the before-reform level of 13.58 percentage points. As well, the notional rate of return should be endogenous, following a Swedish-type automatic balance mechanism.

Importantly, with the NDC plan, the incentive-compatibility problem can be avoided. Indeed, every dollar counts in the NDC, and this would be the most important element of a switch to an NDC plan. It will be demonstrated to the public that everybody gets a pension equivalent to his/her own contribution payments.[13]

Further, an NDC plan is expected to be rather neutral to the retirement decision. The labour force participation rate for a Japanese elderly male still remains at a considerably high level (71.2 percent in 2003 for those of age 60 to 64) as compared with other developed countries. The shift to NDC arrangements can induce later retirement also in Japan, but its effect may not be so significant. A move to NDC arrangements may lead to

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lower replacement rates at age 65. However, this can be compensated by working longer to age 67 or so, or by more voluntary saving.

However, while not explicitly considering NDC arrangements, the Japanese government has signalled increased support of defined contributions arrangements by deciding to give more tax incentives to the existing defined contribution plan from October 2004 onward.

8. Concluding Remarks

The Japanese are increasingly concerned with the "taste of pie" rather than the "size of pie" or the "distribution of pie." When it comes to social security pensions, the most important question is whether or not they are worth buying. It has become a secondary concern how big or how fair they are. Despite the comprehensive 2004 reforms many issues remain. In particular, the basic design of the pension program should be incentive-compatible. Contributions should be much more directly linked with old-age pension benefits, while an element of social adequacy should be incorporated in a separate tier of pension benefits financed by sources other than contributions.

Traditionally the current (and projected future) income statement has been the major tool for describing the financial performance of social security pensions all over the world. It can only give half the story, however. Financial sustainability of social security pensions is not often attained even if its income statement enjoys a surplus. The balance sheet approach is now an indispensable tool for people to understand the long run financial sustainability of social security pensions and to evaluate varying financial impacts of different reform alternatives. Balance sheet analysis of occupational pensions is an essential part of the financial accounting of companies. Why not for social security pensions?

Notes

1 A detailed explanation of the Japanese social security pension system is given by Takayama (1998, 2003b).
2 1,000 yen = US$9.46 = Euro7.41=UK pound 5.10 as at February 2005.
3 A semi-annual bonus equivalent to 3.6 months salary is typically assumed.
4 The normal pensionable age of the KNH (the program for private sector employees) is 65, though Japan has special arrangements for a transition period between 2000 and 2025. See Takayama (2003b) for more details.
5 Almost all Japanese employees receive occupational pensions and/or lump-sum retirement benefits, as well. See Takayama (2003b) for more information.

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6 Excess liabilities of all social security pension programs in Japan as at the end of March 2005 amounted to around 650 trillion yen, which is equivalent to 1.3 times the year 2004 GDP of Japan.

7 The amount of excess liabilities (EL) will vary depending on alternative discount rates. For example, a 2.1 per cent discount rate induces EL of 650 trillion yen, while another 4.0 per cent discount rate produces EL of 420 trillion yen. Part One excess liabilities can be termed as "accrued-to-date net liabilities" or "net termination liabilities". See Franco (1995) and Holzmann et al. (2004).

8 Part of the lower contributions were also due to reduced contributors under population ageing, however.

9 Contributions to social security pensions operate as "penalties on employment." Further hikes in the contribution rate will bitterly damagedomestic companies which have been facing the mega-competition on a global scale, thereby exerting negative effects on the economy, inducing a higher unemployment rate, lower economic growth, lower saving rates and so on. Further increases in the contribution rate will be sure to decrease take-home pay of actively working people in real terms, producing lower consumption and lower effective demand.

10 This section draws heavily on Takayama (2004).

12 The provisions for working husbands and dependent homemaker wives apply conversely in cases where a home-maker husband is dependent on the wife.

13 Another 2 per cent earmarked consumption tax might be all right, since the remaining excess liabilities of 90 trillion yen might be acceptable as a "hidden" national debt.

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