2nd PBSS Colloquium
21-23 May 2007
Helsinki, Finland

Topic B. Longevity and annuitisation, risk sharing in pension design

A balance sheet for pay-as-you-go finance: Solvency indicators for Spain

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The solvency and sustainability of pension systems financed by the pay-as-you-go method can be measured with indicators derived from the actuarial balance sheet. Calculating the actuarial balance annually and making the outcome transparent to the public can provide incentives to improve the financial management of pay-as-you-go pensions and reduce the traditional divergence between the policymakers' planning horizon and that of the pension system itself. This paper provides the first estimate of the actuarial balance of the Spanish contributory pension system for the old age contingency, based on official data. The main accounting entries are developed from the principles of double-entry bookkeeping. The novel entry in the balance sheet, named “Contribution Asset” or “Hidden Asset”, is explained in detail. A comparison between the official balance sheet for the Swedish notional account system and our balance sheet for the Spanish contributory pension system is also provided. The main finding is that the Spanish pension system has an insolvency rate of 36.2 %. The policy implication is that unless current legislation is reformed, Spanish taxpayers (the plan sponsor) should count on making transfers to the pension system with a present discounted value of 36.2 % of current liabilities, for all golden-rule steady states. Moreover, a comparison of the consecutive balance sheets for 2001-05 shows that the degree of insolvency is growing over time, even though the cash flow outcome has improved over the same period. Taking steps to reverse this trend and restore solvency is in the Spanish taxpayers' interest, and possibly also in the interest of those in the European Union who recognize that there is a chance that they may have to support the Spanish budget in the future. (JEL: H55, J26, M49).

Keywords: Retirement, Pay-as-you-go system, Accountancy, Pensions, Spain.

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Public sector pension plans in Japan – Changes in plan design, financing and investment policies

Takayuki Igawa

As public sector pension plans in Japan, there are private pension plans which non-profit organizations provide and public pension plans which government officials' pension funds and private school teachers' pension fund provide.

Private pension plans which non-profit organizations provide had not been regulated by the law, so various types of plans ware established for government officials and private school teachers and each plan had financing, an investment policy and risk management of its own.

Recently the insurance law has become applicable for non-profit organization's pensions, and the new non-profit organization law, the new tax law and the new accounting rules will be in effect by FY2008. Furthermore, the additional pensions of the government officials' pensions and the private school teachers' pension will be reformed in 2010.

I introduce the current status of some non-profit organization's pension plans and deliberating the new additional pensions, and compared to corporate pension plans, I state what plan design, financing and investment policies should be in these public sector pension plans in conjunction with the regulation.

Keywords: Public Sector Pension, Government Official, Financing, Investment Policy, Regulation

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Balancing distribution of surpluses, and the role of bookkeeping and the balance sheet in the Swedish public pay-as-you-go pension scheme

Kristoffer Lundberg, Danne Mikula and Ole Settergren

This paper discusses the role of bookkeeping and the balance sheet in the Swedish public Pay-As-You-Go (PAYG) pension scheme. The paper gives a short presentation of the income statement and the balance sheet of the Swedish PAYG pension scheme, the balancing mechanism, and the proposed legislation for the distribution of system surplus.

A stochastic simulation model for projections of the Swedish pension scheme is presented as a tool to analyse alternative settings for different rules to identify and distribute surpluses. These model runs are then used to discuss the effects from alternative rules in respect to balancing risks and generational fairness.

Keywords: Actuarial bookkeeping, financial stability, balance mechanism, balance sheet, Pay-As-You-Go financing

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Applying Swedish "Automatic Balance Mechanism" to Japanese Population

Masaaki Ono

As many researchers in the world know, Japan is one of those countries that have the most rapidly greying population. During the pension reform in 2004, some Japanese economists argued the issue of "Intergenerational Inequality" using the balance sheet of Japanese State Pension Scheme, which I believe is completely incorrect.

During my study, I was interested in Swedish pension reform. Among many reform measures, such as Notional Defined Contribution, Financial Defined Contribution, and so-called Orange Envelopes, I evaluate that the "Automatic Balance Mechanism " is the most significant tool for governing the financial soundness under the Pay-as-you-go (Pay-Go) system.

Under the Automatic Balance Mechanism, "Contribution Asset (CA)" is calculated and treated as the "quasi asset" in Pay-Go system. Although CA is expressed as the product of the annual premium and "Turnover Duration", it is characterized as the actuarial liability of the hypothetical "Steady State Population" assuming the wage increase rate as the discount rate. To the extent that the sum of CA and the real fund (F), which are constituents of the asset side of the balance sheet, exceeds the pension liability (L), the scheme will be operated without any problem. If the ratio of CA+F to L went to less than 1, the Automatic Balance Mechanism would be activated and the accrued benefits of both active and inactive participants would be adjusted.

Although introducing the balance sheet for Pay-Go state pension schemes would be a kind of innovation, the new concept should be analyzed from various points of view.

In this paper, I tried to apply the mechanism to Japanese Population using a very simple old age pension model and based on "The Population Projections for Japan: 2001-2050" issued by the National Institute of Population and Social Security Research in 2002, and "The Report of 2004 actuarial valuation on Employees' Pension Insurance and National Pension in Japan" issued by the Ministry of Health, Labour and Welfare in 2005.

I would like to show that, although the mechanism works efficiently to some extent, it has its own limit under the decreasing population because it does not assume the rate of annual decrease in the discount rate.

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The Swedish NDC System - A critical assessment.

Karl-Gustav Scherman

The pension reform in Sweden is subject to much comment, and the "Swedish model" is being recommended by the World Bank, the European Commission and numerous finance ministries. Swedes are saying: "With so much international praise, it must be a good reform we have implemented".

There is an obvious need to sort out what this new "Swedish model" really is, and to realize that it contains a whole range of different features.

From a pension system point of view, there are the following features:

- A completely changed PAYG scheme, ending up in the "notional defined contribution" (NDC) model; including
  - Life-time earnings as the basis for the level of retirement pension;
  - Abolishing the "normal pension age";
  - Taking increasing life expectancy into account in the calculation of pensions, thereby steadily raising the age when a person can retire with an adequate pension.
- The introduction of a funded pension component alongside the PAYG part;
- A successive phasing out of the minimum pension in the face of economic growth.

From the point of view of pension politics, other features come to the fore:

- There was a broad political consensus behind a reform that effectively reduces pensions and pension expenditure;
- There was no public opposition despite reductions in future pensions.
- Sweden's reputation as an advanced welfare state makes it useful for politicians elsewhere to refer to their reform proposals as following the Swedish model.

Given the above aspects of the Swedish reform, it is clear why it is claimed that many reforms follow the Swedish model. Indeed, this can be claimed for every reform which reduces pension expenditure. Second, it can be claimed for every reform that, in the face of raising life expectancy, increases retirement ages and/or accomplishes a corresponding result by reducing benefits drawn at a certain age (such as has happened in Finland and Germany and is proposed in Norway). Third, such a resemblance can be claimed following the introduction of a funded component in the public pension arrangements (for example, in Poland, Hungary and in the voluntary scheme in Germany). Finally, it can be claimed whenever an NDC approach is adopted (such as in Latvia, Poland and Italy)

There is a need to know what a reference to "the Swedish model" really means. This is needed in order to avoid confusion that otherwise might arise from an association of various features of the new Swedish model with what Swedish welfare arrangements have traditionally stood for, but which does not apply to this pension model. And such a clarification it is needed for Swedes better to understand the reasons for the international praise of our reform.

In his report Mr. Scherman will give an account for the new pension system, its targets, rules and function and for the financial sustainability and social adequacy of the system. Against a

background of general challenges and needs that face every aging society, particularly its pension systems, he will discuss the outcome of the reform. His thesis is that the reform is based on sound financial and social principles but that a whole range of measures must be designed and implemented in order to make the system acceptable from a social point of view.