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Optimal financing of social security pension schemes

Financing of Pension and Social Security Schemes

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Agenda

1. Introduction
2. Financing Social Security Schemes
3. Financing Pension Schemes
4. Financial Viability
5. Social Security Schemes in the GCC
6. Conclusions

Introduction

Financing Pension and Social Security Schemes

- **Priority in government's agendas**
- **Optimization of scheme funding**
- **Recent changes in demographic patterns**
  - **new labor market structures**
  - **increasing longevity of pensioners**
- **New legislative regimes**
- **Objectives**
  - **current funding methods, range of options**
  - **funding methods, scheme viability and sustainability**
  - **separate analysis for pension and for social security schemes**

Financing Social Security Schemes

- Unfunded e.g. raising taxes/borrowing and pay benefits as they fall due
- Funded – setting aside money in advance to pay future benefits
- Fully or partially
- Financing system adopted by each country depends on:
  - historical/cultural reasons
  - financial circumstances
  - investment capacity available in the country
- Arguments in favor and against funding

Financing Social Security Schemes

Arguments in favor of funding

- fairer to have higher contributions than PAYG when a social security scheme is new with low pension expenditure
- increases the level of savings
- develop capital markets
- creates extra investment that stimulates growth
- eases pressures of an ageing population
- investment returns earned reduce the long-term cost of benefits

Arguments against funding

- overall saving may not rise but redirected
- even if overall savings rise, it may not create real investment
- does not solve the problems of an ageing population
- transition to funding may be problematic
- the fund may prove a political temptation to divert money for other uses
- managing a large investment fund has significant risks

Financing Social Security Schemes

Main Funding Methods

- Pay as you go
- General Average Premium
- Terminal Funding
- Scaled Premium

Financing Social Security Schemes

Pay as you go

- **Contribution income in each year exactly (or almost exactly) equals benefit expenditure in the same year – no fund is established**
- **Contribution rate varies as the system matures or the population ages**
- **Two variations**

  - Smoothed pay as you go: building up a contingency reserve in years where income exceeds outgo

  - Equalized pay as you go: equalized contribution rate is calculated so that expected income covers expected expenditure over a fixed period of years (control period)

Financing Social Security Schemes

General Average Premium (GAP)

- The contribution rate is set such that a level rate will be payable throughout the lifetime of the scheme
- Contribution rate = present value of benefit expenditure over present value of future salaries
- Stability of contribution given that assumptions are borne out in practice

Financing Social Security Schemes

Terminal Funding

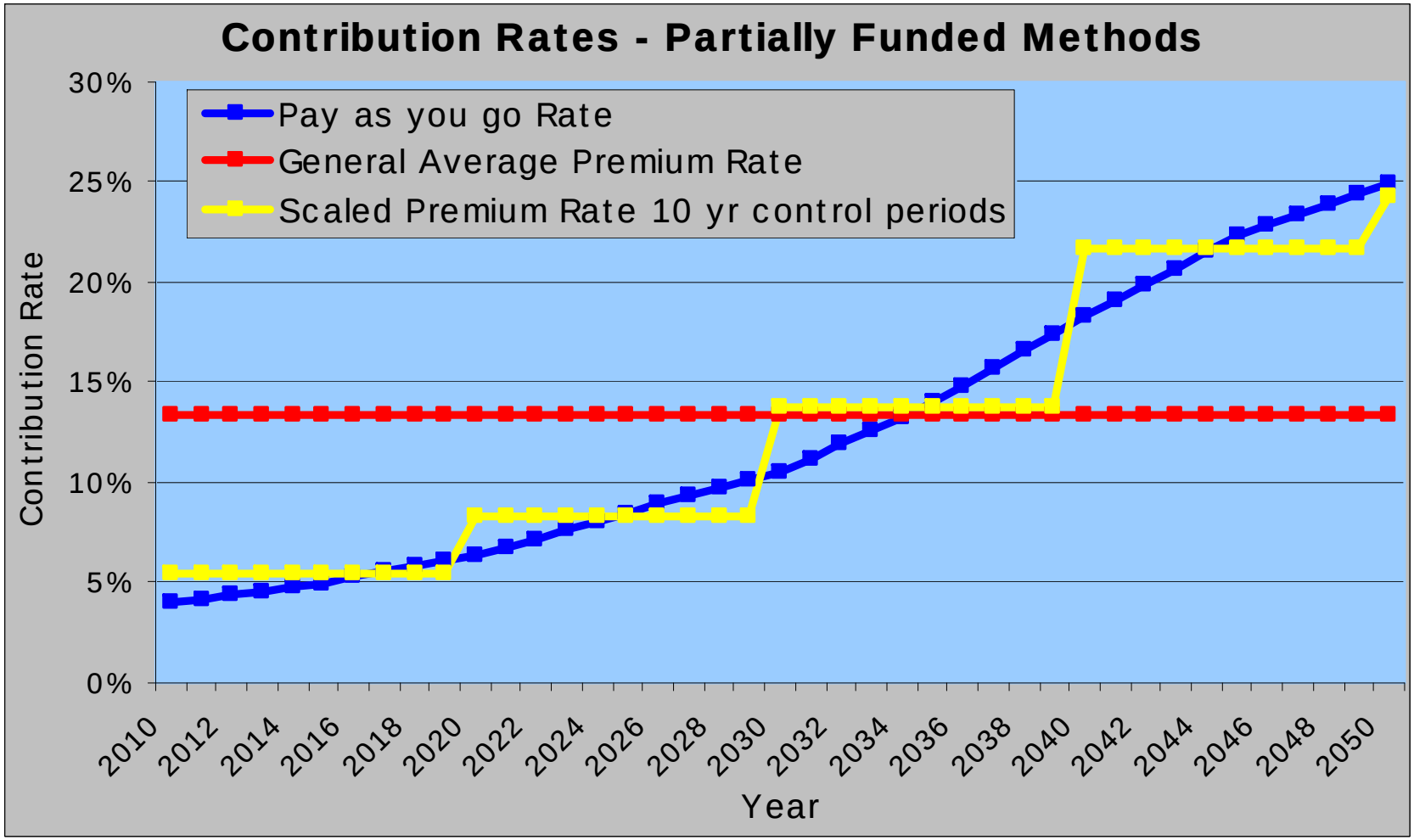
- Intermediate financial system between PAYG and GAP
- Benefits are prefunded at the time they are awarded
- The contribution income required in any period is the amount required to finance the capital value of the benefits awarded
- Widely used for pension benefits paid from occupational injuries funds

Financing Social Security Schemes

Scaled Premium

- Usually applied to partially funded social security schemes
- Lies between PAYG and GAP
- Similar to equalized PAYG but the fund is not allowed to fall to zero
- The contribution rate is calculated to apply for a period of time that would be sufficient to provide the benefits to be paid over the control period
- In a maturing or ageing scheme this method results in a stepped increasing contribution rate in successive control periods and a non-decreasing fund

Financing Social Security Schemes



Financing Pension Schemes

- Occupational defined benefit schemes
- Higher risk of default
- "proper funding" – a fund linked in some way to the plan's accrued liabilities
- Usually prescribed by regulatory or accounting requirements
- Number of methods used to calculate accrued liabilities:
  - Projected Unit Method
  - Current Unit Method
  - Attained Age Method
  - Entry Age Method
- Book reserving method – provision in a company's accounts for a benefit liability payable in the future for which no funds have been set aside

Financing Pension Schemes

- **Two statutory measures of liabilities**
  - directed by the pension regulator for funding purposes
  - by plan sponsors for business accounting purposes
- **Differences usually relate to:**
  - level of funding
  - actuarial method to be used
  - choice of discount rate
  - benefits to be considered
- **Differences in discount rates**
  - regulators usually apply a maximum discount rate
  - accounting standards are based on market yields of fixed income securities

Financing Pension Schemes

- **Discount rate used in regulatory and accounting measures of pension liabilities in selected OECD countries (2005)**

	Regulator	Accountant
Belgium	6	4.87
Canada	4.5	5.98
Germany	2.75-4	4.91
Ireland	4.6-7.25	4.81
Japan	1-1.6	2.07
Netherlands	4	4.94
Portugal	4.5	5.12
Spain	4	4.87
United Kingdom	4	5.41
United States	4.7	5.83

* Source: OECD Working Paper, Reforming the valuation and funding of pension promises

Financing Pension Schemes

- **Valuation methods for funding purposes**
- **Example of Regulators required discount rates**
  - specific or maximum rate
  - current market yield on an identifiable group of securities
  - rates implicit in the purchase from insurance companies of immediate and deferred annuities
- **Recent trend to move towards market-based discount rates – usually the market yields of government bonds**
- **This is likely to bring out some convergence between regulators requirements and accounting standards**
- **OECD countries that introduced market-based liability valuations of DB pension funds: Japan, the Netherlands, the United States.**

Financing Pension Schemes

- **Valuation methods for accounting purposes**
- **IAS 19**

  - approved in May 1999

  - adopted by many OECD countries

  - European Union – June 2002 Resolution – all listed companies based in EU to comply with IASB accounting standard in the preparation of their consolidated group accounts
- **Based on market valuation principles using the PBO measure of pension liabilities**
- **Benefits are discounted at a specified corporate bond rate**
- **Actuarial gains/losses may be either amortized over the remaining service period of plan members or immediately recognized in the P&L or immediate recognition in a separate income statement**

Scheme Funding

- **Choice of Funding Method**
- **Timing of meeting the cost**
- **Cost is not affected**
- **Choice of method depends**
  - meeting the needs of various parties
  - accounting needs
  - regulatory restrictions
  - meeting certain criteria (security, stability, realism, liquidity, flexibility, opportunity cost, durability)
  - financial circumstances
  - historical and cultural reasons

Financial Viability

Pension Funds

- **viability is defined by the funding level (assets held to cover accrued promised liabilities)**

Social Security Schemes

- **definition for viability is debatable**
- **no predetermined benchmarks**
- **viability can take many forms**

  - projected reserve to cover benefit expenditure a number of times

  - projected reserve remains positive for e.g. 60 years

  - benefit expenditure will not exceed a certain % of GDP
- **Different countries developed different implied definitions for scheme sustainability for social security pension arrangements**

Financial Viability

Canadian Pension Plan

- Set a steady contribution rate
- Defined to be the lowest level rate that results in the projected reserve ratio being the same in the 10th and the 60th year following the end of the actuarial review period

U.S.A Social Security System

- Two summarized rates for a given period
- Income rate: ratio of present value of contribution income to the present value of insurable earnings
- Cost rate: ratio of the present value of total expenditure to the present value of insurable earnings
- The difference of the two rates determined the actuarial balance
- "in close actuarial balance" for a long range period e.g. 75 years if the income rate is between 95% and 105% of the cost rate for the period

Financial Viability

- **Definition of surplus – equally important**
- **Reserves/surpluses of young schemes**
- **Misuse of reserves**
- **Sometimes understood by politicians to be an economic surplus and were used to give out benefit increases**

Financial Viability

- International Public Sector Accounting Standards Board
- Long term fiscal sustainability reporting and recognition and measurement of social benefits
- Objective: serve the public interest by developing high quality accounting standards for use of public sector around the world in the preparation of general purpose financial statements
- Conclusions: traditional approaches to liability recognition may not be suitable for conveying information to users about the future provision of social programs

Social Security Schemes in the GCC

- Social Security Schemes in countries members of the Gulf Cooperation Council (GCC)
- Generous benefits which represent the largest, and possibly, the only pillar of pension provision in the country
- Large mandates and high expectations
- Financing method and/or definition of viability are not set out
- Guaranteed by the Government – if the schemes' funds are not sufficient, the Government is obliged to fund the shortage – what is the definition of shortage?
- Depends on the Actuary

Financing Social Security Schemes

Financial Position of five GCC schemes

Scheme	State of Scheme Maturity	Reserve Ratio	Dependency Ratio	Year the reserve is expected to be depleted	Reserve as a % of past service liability	Past Service Liability as a % of GDP
A	medium	39.2	29.2	2091	56.9%	2.6%
B	mature	11	7.3	2020	39.5%	12.1%
C	young	22.6	35.5	2040	52.8%	3.8%
D	young	8.8	3.6	2044	38.9%	3.9%
E	mature	11.2	5.4	2026	39.5%	17.1%

Conclusions

- **Method of financing - affects the timing of meeting the cost, not the cost itself.**
- **Social Security Schemes: government guarantees, security level and large size of the funds build up**
- **DB occupational pension schemes: higher risk for default – funding level is directed by regulatory or accounting requirements.**
- **Arguments in favor of implementing stricter accounting and actuarial standards for Social Security Schemes (semi government organization pension funds)**
- **Proper governance and stricter controls (accounting and actuarial standards may be needed).**
- **Administration and investment of the social insurance funds.**
- **EU directive 41 - many of the guidelines in this directive should have been implemented for social insurance funds**

Thank You!