Are ABMs Appropriate for Private Sector DB Pension Plans?

Doug Andrews

University of Southampton

Today's Agenda

- Provide some background on Automatic Balancing Mechanisms (ABMs) in various Social Security Retirement Systems (SSRS)
- Identify some differences between SSRS and private-sector pension plans (PPPs)
- Discuss possible applications of ABMs in PPPs

Ways To Maintain Pension Levels In Paygo SSRS

- Collect contributions/taxes each year equal to the pensions paid
- Demographic pressures may produce annual costs considered too high
- Could move away from Paygo like Canada
- Some countries are adopting self-adjusting mechanisms as a way to mitigate the impact of rising costs

Financial Sustainability Is A Stochastic Control Problem

- Fertility rate, life expectancy and economic growth are all important factors
- Some would include retirement age
- Can we choose an initial pension level with the confidence that it can be maintained?
- ABMs are designed to make the necessary adjustments without having to discuss each adjustment

A Sustainable SSRS

- Delivers on its financial commitments
- In such a way that the financial burden is borne equitably by participants
- Over the long term
- 5 guiding principles for the development of self-adjustment mechanisms for sustainable SSRS based on review of: Canada, Germany, Japan, Sweden

Guiding Principles For A Sustainable ABM

1. Should relate directly the factors which affect inflows to factors which affect outflows
2. In assessing the equitable distribution of the burden of adjustment, the change in expected utility should be considered by class of participants
3. The greater financial burden should be borne by contributors

Guiding Principles Continued

4. The ABM should be able to restore balance without recourse to extra-systematic flows
5. Where approximations are used, the financial condition and equity of the SSRS should be reviewed periodically and adjustments made as warranted

Controls Adopted

- Adjust contribution rate – Canada
- Adjust the benefit level – All
- Adjust the retirement age – Sweden (Germany & Japan have scheduled but not ongoing increases)
- Invest reserve funds – Canada
- Extra-systematic flows – all except Canada

Controls & Responsiveness

Control	In Response To			
	Economic Factors		Demographic Factors	
	Adjusts Inflow	Adjusts Outflow	Adjusts Inflow	Adjusts Outflow
(i) Adjust contribution rate	√		√	
(ii) Adjust benefit level		√		√
(iii) Adjust retirement age			√	√
(iv) Invest reserve funds	√	√		
(v) Extra-systematic flows	√	√	√	√

Classification of ABMs

Does The Balancing Mechanism				
Country	Work Automatically	Achieve Financial Balance	Achieve Equitable Balance	Classification
Canada	No	Partial	Transitory	Discretionary Partial
Germany	Yes	Transitory	Transitory	Mechanistic Transitory
Japan	Yes	Transitory	Transitory	Mechanistic Transitory
Sweden	Yes	Transitory	Partial	Mechanistic Partial

Financial Sustainability & Equity

- The former requires a balance of money capital and human capital in order to provide adequate retirement income
- For equity, Sinn argued that generations that do not have a sufficiently high fertility rate to replace themselves should have their social security adjusted
- Both Japanese and German ABMs adjust benefits for relative size of cohorts of contributors (and pensioners)

Fertility Dependent Prefunding

- In Finland there is some prefunding of DB pensions that does not affect benefit levels
- Alho, Lassila & Valkonen propose that the standard prefunding factor would be multiplied by a factor for each cohort that estimates its size at working age compared to all working age cohorts
- If funding cohort is bigger on average than younger cohort, the factor is greater than 1 and vice versa

Some Differences: PPPs vs SSRS

- SSRS tend to operate on a Paygo basis, whereas PPPs require funding
- There is generally a greater sense of solidarity in SSRS so redistributive policies are more acceptable than in PPPs
- Greater acceptance that governments can change the SSRS whereas the PPPs are viewed as contractually and legally binding

ABMs Could Be Appropriate For PPPs With Risk Sharing

- Opportunity for members and sponsor to agree on ABM
- Advance funding should still be used
- Basic retiree benefits should be annuitized
- Perhaps for MEPPs but not for non-negotiated Single Employer Pension Plans (SEPPs)

Features Of Swedish Adjustment Mechanisms

- Increasing age for full-benefit entitlement and annuity factors adjusted to reflect improvements in cohort mortality
- ABM adjusts rates credited to accounts and increases to pensions in payment based on ratio of assets to liabilities (when assets < liabilities)
- Unadjusted crediting rates based on average wage growth per capita forming a connection with economic growth

Features Of German Adjustment Mechanism

- Adjustment depends on changes to net (maximum) contribution to SSRS and supplementary pensions
- Adjustment depends on change in dependency ratio that is the ratio of pensioners to contributors including the unemployed
- Sustainability parameter shares the burden of adjustment between pensioners and workers

Laudable Aspects of These Adjustments

- Adjusting the age of full-benefit entitlement
- Basing pensions on the average increase in wages
- Attempting to relate the adjustment to the broader economy

Weaknesses With These Adjustments

- The rate of average wage growth per capita may increase even when the total economy is contracting
- For financial sustainability, pensions should be increased by the rate of total wage growth and decreased if total wages are declining
- Neither country's mechanism is "bullet proof", both require some heroic assumptions

Adapting Swedish ABM For MEPPs

- Most suitable for DC MEPPs with negotiated contributions
- Credit account balances with the average annual increase in industry wages
- Convert balances to a basic pension using 0% interest and allowing for mortality improvements
- Invest excess funds and provide ad hoc indexing up to the level of the full increase in average wage
- If excess funds insufficient, apply ABM to reduce indexing and rate credited to balances

Adapting German ABM For MEPPs

- Suitable for DB MEPPs with negotiated contributions that do not have contractual indexing
- Adjust pensions based on changes in the dependency ratio of pensioners to contributors including unemployed
- However this adjustment alone does not ensure financial balance
- Could also adjust sustainability parameter or contribution rate

Conclusions

- **Both Swedish and German ABMs have interesting features but neither ensures financial balance**
- **Adjusting the age of full-benefit entitlement and increasing pensions in respect of wage growth improves financial sustainability**
- **MEPPS are dependent on the state of their industry and special industry adjustments are needed**

Conclusions Concluded

- Before ABMs could be used in PPPs regulatory change would be required
- ABMs are inappropriate for non-negotiated SEPPS but could be adapted to risk-shared plans

Contact Details

- Doug Andrews, PhD, FCIA, FSA, CFA
- University of Southampton
- dwa007@hotmail.com
- +44 (0)23 8023 4627