

The Actuarial Profession
making financial sense of the future

Pensions, benefits and social security colloquium 2011
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Automatic Balancing Mechanisms: Getting Them Right. Making Them Fair.

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Overview: Assessing and Adapting ABMs

- Accuracy and fairness are essential
- An inaccuracy in the Swedish approach
- Suggestions to improve fairness in Sweden and Canada
- Can ABMs be applied to occupational pension plans?
 - Suggestions on how the Swedish and German approaches might be introduced for multi-employer plans

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Sweden: The Asset Side of the Balance Sheet

- Value of actual assets, plus
- Value of assets “available” to provide benefits
 - Annual contributions times turnover duration (TD)
 - TD is the difference between weighted average age of pensioners and weighted average age of contributors
- This is reasonably accurate in a steady state when the contributory and retirement period are equal
- In practice this overstates the assets and therefore understates the fair adjustment to pensioners

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Sweden: Two Ways in which TD Overstates Assets

- When longevity of pensioners increases, TD increases
 - **Counter-intuitive:** liabilities should increase but not assets
- In a steady state, the contributory period is of equal length to the payment period
 - In practice, the contributory period is longer than the payment period
- Thus more than one generation of contributions are considered available to provide pensioners' benefits; but some of the contributions considered available to provide pensioners' benefits will be required to provide other contributors' benefits when those contributors retire

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Sweden: Fixing the Asset Side of the Balance Sheet

- On system adoption and any time there is a benefit improvement create a Future Commitment Asset (FCA)
- Then assets equal the value of the actual assets plus FCA
- No other adjustments to the asset side are required because the plan is Notional Defined Contribution (NDC)
 - In NDC each new contribution creates an equivalent liability
- This method would improve the fairness of the ABM calculation
- The system already has a high degree of fairness since it continues to adjust the age of full benefit entitlement in response to increases in life expectancy

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The Canadian ABM

- If the actuary calculates that the contribution rate should be increased, and
- If the Ministers are unable to agree on the action to be taken
- Then one-half the recommended contribution increase is implemented, and
- Inflation adjustments for pensioners are suspended
- Until the next valuation report when a new assessment is made

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Improving Fairness in Canadian ABM

- Adjustment burden may not be equal financially
 - But even an equal financial burden would not likely be fair
- Use an utility approach where the longer the period to the time of benefit receipt the higher the discount rate
 - Pensioners bear too heavy a burden of adjustment
- One way to improve fairness for pensioners would be to postpone the suspension of inflation adjustments for one valuation cycle (i.e., 4 – 6 years, instead of 1 – 3 years)
- Another way would be to limit the inflation reduction but not to suspend it completely (e.g., maximum 1% per annum)

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Differences Between Social Security (SSRS) and Occupational Pension Plans

- Most SSRS operate on a paygo basis (with a small buffer fund)
- There is generally a greater sense of social solidarity among members of SSRS
- There is often greater willingness of citizens to accept that changes can be made to SSRS

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Could ABMs be used with occupational pension plans?

- Yes, but it changes the nature of the contract between the employer and the member
- In the Netherlands some DB plans that have unfunded liabilities permit
 - Contributions to be raised by a defined amount, and if this proves insufficient
 - Inflation adjustments to be reduced by a defined amount
- MEPPs in Canada often have: union representation; negotiated contribution rates; many employers with the only commitment being to contribute per hour worked

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Adding an ABM to a MEPP with Defined Contribution Rate Only

- Could use the Swedish mechanism
- With the balance sheet adjustment proposed
- However in Canada authorities would likely require the FCA to be funded over a number of years (e.g., 15)

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German Adjustment to Current Pension Value (PV)

$$PV_t = PV_{t-1} \left(\frac{AGI_{t-2}}{AGI_{t-3}} \right) \left(\frac{1 - \delta_{t-2} - \tau_{t-2}}{1 - \delta_{t-3} - \tau_{t-3}} \right) \left(\left(1 - \frac{PQ_{t-2}}{PQ_{t-3}} \right) \alpha + 1 \right)$$

AGI is average gross income

δ is contribution to supplementary plan

τ is social security contribution

PQ is demographic factor: pensioners divided by contributors and unemployed

α is a sustainability parameter (currently set to 0.25)

Adding an ABM to a MEPP with a Negotiated Contribution Rate and Defined Benefits

- Could use the German mechanism
- Demographic factor considers unemployment within the industry, which is a measure of the economic potential, but does not consider the relationship between the employed and the unemployed
- Sustainability parameter is used to share the burden of adjustment between pensioners and contributors

Guidance When Implementing an ABM in an Occupational Pension Plan

- Most applicable where the plan involves risk sharing
- There should be an opportunity for the members and the sponsor to agree on the ABM
- Advance funding should still be used
- “Basic retiree benefits” should be defined and should be annuitized

Conclusions

- ABMs can be a useful way of adjusting the sharing of the financial burden in the face of structural change
- To be effective, the calculation of the ABM must be accurate and the adjustments must be fair
- ABMs could be used in occupational pension plans that involve risk sharing but how the ABM will operate should be understood and agreed by all parties