Pension Benefits and Social Security
June 29, 2016
Robert L. Brown, FSA, FCIA, ACAS
ACCOUNTING FOR LIABILITIES OF SOCIAL SECURITY SYSTEMS:
The Actuarial View
ACCOUNTING FOR SOCIAL SECURITY LIABILITIES
The Actuarial View:

--THE PROBLEM
--THE IMPACT
--THE SOLUTION

PBSS
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FCIA, FSA, ACAS
ACCOUNTING FOR SOCIAL SECURITY LIABILITIES:

--THE PROBLEM
Those Proposing New Accounting for Social Security Liabilities

IPSASB—International Public Sector Accounting Standards Board
IMF GFS—Government Finance Statistics
EUROSTAT
Accounting for Liabilities of Social Security Systems: Proposals

• Proposals Coming from IMF, IPSAS-B and EuroStat
• Would treat Social Security Systems like large Private Sector Pension Plans
• Will potentially disfavour PAYG and Partially-Funded DB
• Key Issue is use of Closed Group Evaluation
Accounting for Liabilities of SS Systems: Proposals

• Will respond mostly to IPSAS-B Proposal

• Will review differing viewpoints of Actuaries versus Economists, Statisticians and Accountants
Accounting for Liabilities of SS Systems

• Many existing Guidelines and Standards of Practice for Actuaries in this area
• Include:
  --ISSA/ILO Guidelines for Actuarial Work for Social Security
  --IAA ISAP2: Actuarial Valuations of SS Systems
  --Many IAA Member Associations adopting ISAP2 for local use
  --Some Member Associations have their own different SAPs
Accounting for Liabilities of SS Systems

- DC SS Systems are “Fully-Funded” at any moment by definition, so not a topic of discussion
- Also believe proposals do not apply to Health Care, Long-Term Care or Workers Comp
Accounting for Liabilities of SS Systems

- Want to look at SS Systems, not Public Sector Plans where government is employer
- Bankruptcy of most SS Systems hard to envisage
Accounting for Liabilities of SS Systems

• It is not clear if Means-Tested Schemes (Tier 1) will be included—Needs to Be Addressed

• We will now look only at PAYG and Partially Funded DB Systems
Accounting for Liabilities of SS Systems

• SS Systems have an inherent “Social Contract”
• What is important is not the funded level but the Sustainability of the System
• Latter can be assessed using Long-Term Actuarial Projections (e.g., 75 years)
• Projections done by actuaries
Accounting for Liabilities of SS Systems

- IAA wants the Valuation Approach to Parallel the Financing Approach
- Sustainability is the Goal
- Requires an Open Group Valuation
- Future Contributions are an Asset
- Results of a Closed Group Valuation could be Misleading
Accounting for Liabilities of SS Systems

• Under the Social Security Social Contract, Today’s Contributions are used to pay Today’s Benefits (at least partially)
• Workers are then promised that the next Generation will do the same for them
• Full Funding is not necessary and may not be desirable (where to invest funds?)
Accounting for Liabilities of SS Systems

- Contributions are not Taxes
- Unfunded Liabilities are Not Government Debt for Systems with no Government Subsidies
Accounting for Liabilities of SS Systems

• In Social Security, there is a weak link between Contributions and Benefits Earned (So a Weak Financial Claim is Created)

• Most SS Schemes can be modified by the Government at any moment (although this may be politically difficult)
Accounting for Liabilities of SS Systems

• Closed Group Valuations make sense for Private Sector Plans meant to be Fully-Funded where Bankruptcy is a daily possibility

• Open Group Valuation should be used for SS Systems because of the Inherent Social Contract
Accounting for Liabilities of SS Systems: The Impact

- Germany: 275% of GDP
- France: 292% of GDP
- Italy: 322% of GDP
- Canada: 50% of GDP ($830 B)
Accounting for Liabilities of SS Systems

• The extremely large magnitude of Closed Group liability raises concerns about the interpretation that the media and public opinion can make of it
Accounting for Liabilities of SS Systems

• Closed Group Valuation also Ignores any Intended Reforms

• If Contributions plus Investment Income (if any) can Sustain the System, Financial Reporting Should not Indicate Otherwise
Accounting for Liabilities of SS Systems

• Any SS System with a Balancing Mechanism Should not Create Debt
• To Avoid Political Influence, use an Automatic Balancing Mechanism (also no Debt here)
Remaining Issues

• An Appropriate Discount Rate: May differ for part of plan that is PAYG (Growth in Wage Base) versus part that is pre-funded (Investment Returns)

• Length of Projection Period
Summary

• Social Security Systems are secured by Intergenerational Societal Commitments

• They should not be considered as large private occupational pension schemes for reporting assets and liabilities in national accounts

• The Key focus should be on Sustainability
THE SOLUTION: POOLED TARGET DB PENSION PLANS*

*Based on Paper:
“Pooled Target Benefit Pension Plans: Building on PRPPs”
Institute for Research on Public Policy
www.irpp.org
The Polarized DB versus DC Debate

- There is an infinite number of options between these extremes
- Called “Hybrid” or “Mixed” plans
- These represent only 10% of pension membership in Canada
- Arguing pure DB or pure DC hinders the debate
Pension Risks

• Investment risk
• Cost volatility risk
• Inflation risk
• Interest rate risk if you purchase an annuity
• Longevity risk if you don’t
A Classic DB Plan

• The Plan Sponsor carries these risks
• May be passed on to:
  – Customers through higher prices
  – Shareholders
  – Workers through total compensation package

Regardless, Sponsor controls plan decisions
DB Plans were affordable

- At first through long vesting and no indexation
- Then through high investment returns
- Now Many Plans in Deficit
- Increasing volatility:
  - Aging plan membership
  - Mark to Market
  - Marketplace volatility
Other Problems with DB

- Sponsor bankruptcy when plan under-funded
  - Low priority of members in bankruptcy (Nortel)
- Less than full benefit accrual when you change jobs (Portability)
DC funded through Individual Accounts

- Plan sponsor responsibilities end with contribution
- Retirement income unknown
- Worker carries all risks
- Cost of risk mitigation can be very high
- Investment risk is the largest variable
Replacement rate obtained from personal account savings of workers who invest in alternative portfolios

Source: Brookings Institution in Burtless (2009)
Mitigation of Investment Risk

• Investment advice can cost 300 bp
• If $i = 5\%$ and CPI = 2%, then no net return at all
• No evidence that it increases “i”
• Workers tend not to use lifecycle investing
• DC/CAP lost 20 to 30% of value in 2008/09
• Resulted in drop in replacement ratio of almost 10 percentage points
I'll manage your portfolio for a standard industry fee of 1% per year.

I'm investing a billion dollars. Your fee would be $10 million per year.

Those index funds aren't going to pick themselves.
Longevity Risk

• In a pooled DB Plan, you share Longevity Risk with all members of the Plan, Active and Retired
• In an Individual Plan, you must Account for your Life Expectancy plus a Margin
• Two Outcomes:
  – Draw down income slowly and live poorly
  – Draw down income rapidly and run out and shift to welfare
• Either way, need more liquid assets with
• Lower rates of return = lower monthly income
Mitigation of Longevity Risk

- With low “i” life annuities are expensive
- Life annuity price assumes 5-star life expectancy (must cover anti-selection)
- Hard to get true inflation protection
- Average worker is not an investment expert
- Just saving does not result in retirement income security
Target Benefit Plans

- Benefits can be increased or decreased
- Like a DC plan to the employer/sponsor
- Many exist in Canada today
- They do not contribute to the Pension Benefit Guarantee Fund
- Result is “Expected” but “Not Guaranteed” Retirement Income
Size Matters

• For Individual Accounts expect MERs of 200 to 300 bp
• For Large DB Plan with >$10B, MER of 28-35 bp
• If move from DB to DC, at least use Large Asset Pools
• In Australia SuperFunds, MERs for Retail funds are 128 to 279 bp
• More Investment Choices (Private Equity)
• Stability through Law of Large Numbers
The cost of investment fees in pension funds (by fund size) and individual savings accounts

<table>
<thead>
<tr>
<th>Large cap equities</th>
<th>Average management expense ratio (basis points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$10 million</td>
<td>60</td>
</tr>
<tr>
<td>$1 billion</td>
<td>42</td>
</tr>
<tr>
<td>$10 billion</td>
<td>28 to 35</td>
</tr>
<tr>
<td>Individual account</td>
<td>250 to 300</td>
</tr>
</tbody>
</table>

Source: Ontario Expert Commission on Pension Reform
The impact of investment fee ratios on pension adequacy

Assumes annual contributions of $10,000 over a worker’s 40 yr career with average annual income of $50,000

Source: Ontario Expert Commission on Pension Reform

<table>
<thead>
<tr>
<th>Management expense ratio (basis points)</th>
<th>0</th>
<th>40</th>
<th>150</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accumulated value ($ after 40yrs)</td>
<td>777,000</td>
<td>707,000</td>
<td>551,000</td>
<td>400,000</td>
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<tr>
<td>Payout ($/yr)</td>
<td>45,000</td>
<td>41,000</td>
<td>32,000</td>
<td>23,000</td>
</tr>
<tr>
<td>Replacement ratio (%)</td>
<td>90</td>
<td>82</td>
<td>64</td>
<td>46</td>
</tr>
</tbody>
</table>
PTBPPs: The Concept

• **The Basics**
  – Combines Employer DC features with Traditional MEPP Target Benefit
  – Worker Expectation is a DB (not guaranteed)
  – Employer Expectation is DC

• Better balance of DB/DC Risk Sharing
Target Benefits

• Start with Agreed-Upon Target Benefit (Would vary by Age of Participant at Entry)
• Work Backwards with Slightly Conservative Actuarial Assumptions for needed Contribution (e.g., FE “i”)
• Worker Receives Annual Update on Benefit
• Allows Worker to Respond (make larger contributions or negotiate more from Employer)
• Benefit is NOT Guaranteed (Can be Reduced)
Risk Management

• Longevity Risk
  – Buy Deferred Annuities (e.g., starting at age 40)
  – Fund pays out Retirement Income and carries risk (Like TIAA-CREF in the U.S.)
  – Risk not borne by Worker

• Inflation Risk
  – Original Actuarial Assumptions will Include Modest Inflation Adjustment
  – If Fund is healthy, more can be covered
  – If not, then no COLA that year (could catch up later)
  – Already many plans in Canada with Target COLA
Target Benefit Social Security

- Many Social Security Systems (SSRS) are clearly TB (e.g., the CPP)
- Any SSRS with an ABM is a TB Plan
- Indeed, any system that allows unilateral Government amendments should be viewed as TB
Impact on TB SSRS on Accounting

• Only SSRS that are deemed to be “Fully Funded” should use Closed Group Accounting for Liabilities
• Any TB or SSRS with an ABM should use Open Group Accounting
• Future Contributions are a Plan Asset
Impact of TB SSRS on IMF Debt

- Any truly Target TB SSRS should impose zero dollars of incremental liability to national debt
- E.g., the CPP
- To do otherwise (E.g., Closed Group Evaluation) is, at the least, egregiously misleading