

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

June 29, 2016

Robert L. Brown, PhD
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

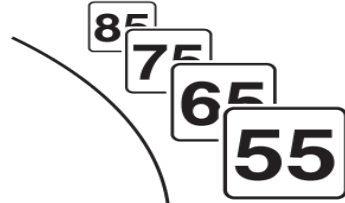
- An Appropriate Discount Rate: May differ for part of plan that is PAYG (Growth in Wage Base) versus part that is pre-funded (Investment Returns)
- Length of Projection Period



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





*Faces of Aging
Les défis du vieillissement*

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



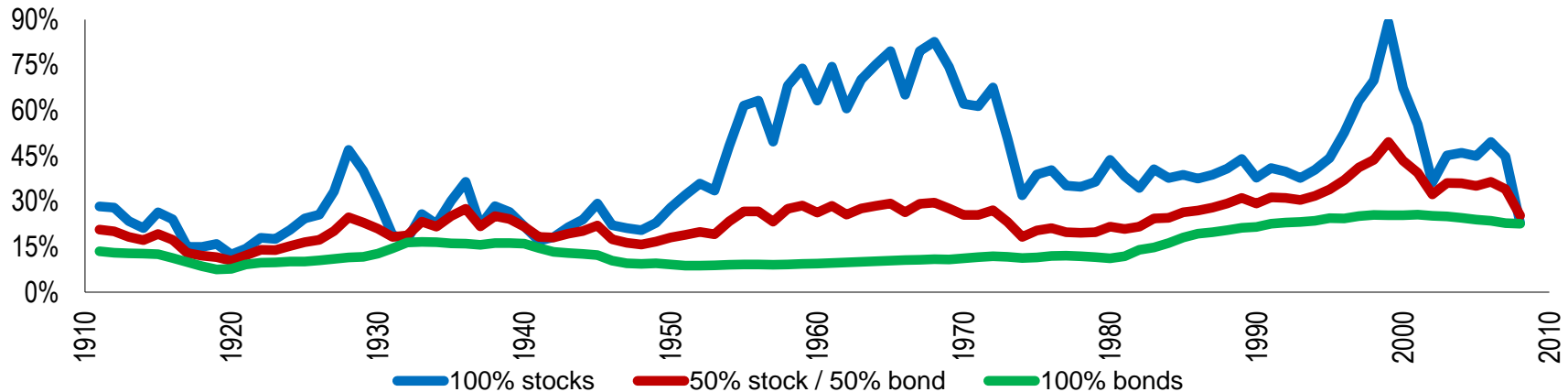
Other Problems with DB

- 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



DILBERT

I'LL MANAGE YOUR
PORTFOLIO FOR A
STANDARD INDUSTRY
FEE OF 1% PER YEAR.



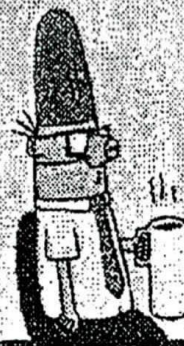
DilbertCartoonist@gmail.com
Dilbert.com

I'M INVESTING A
BILLION DOLLARS.
YOUR FEE WOULD BE
\$10 MILLION PER YEAR.



1-20-12 ©2012 Scott Adams, Inc. All rights reserved. Dilbert

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

	Average management expense ratio (basis points)
Large cap equities	
\$10 million	60
\$1 billion	42
\$10 billion	28 to 35
Individual account	250 to 300

Source: Ontario Expert Commission on Pension Reform

The impact of investment fee ratios on pension adequacy

Management expense ratio (basis points)	0	40	150	300
Accumulated value (\$ after 40yrs)	777,000	707,000	551,000	400,000
Payout (\$/yr)	45,000	41,000	32,000	23,000
Replacement ratio (%)	90	82	64	46

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



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

Q & A