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ACCOUNTING FOR SOCIAL SECURITY LIABILITIES:

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

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ACCOUNTING FOR SOCIAL SECURITY LIABILITIES:

--THE PROBLEM

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Those Demanding New Accounting for Social Security Liabilities

- IPSASB—International Public Sector Accounting Standards Board
- IMF GFS—Government Finance Statistics
- EUROSTAT

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IMF GFSM 2014

- GFSM 2014 records net implicit obligations
  - ***Para.7.261 GFSM 2014*** *- "The present value of social security benefits that have already been earned according to the existing laws and regulations but are payable in the future should be calculated in a manner similar to the liabilities of an employment-related pension scheme. This amount minus the present value of social security scheme contributions, provide an indication of the net implicit obligations that a government unit has for social security benefits payable in the future."*

IMF GFSM 2014

Recognition of Social Security pensions and liability obligations:

- *Accrued-to-date (past) benefits included in "liabilities"*
  - Not possible to provide «net liabilities»
- *GFSM 2014* does not recognize a liability for future benefit payments
  - Social security's future obligations are "contingent liabilities"

IMF GFSM 2014 – BALANCE SHEET CLOSED-GROUP APPROACH

Assets	Liabilities
0	Government / public sectors Employees Liabilities
	Present value of accrued-to-date benefits to present pensioners and beneficiaries
	Present value of accrued-to-date benefits to present active insured persons

ISSUES

- GFSM 2014
  - Relevant to Defined Contribution and fully-funded private sector schemes based on the closed-group IPD approach
- Closed group approach not appropriate to social security DB:
  - **Disaggregation of pensions obligations by generations**
    - Past accrued entitlements and future entitlements are split up - **disregarding funding strategies** that pool the cost of all risks over time in different manners and to reflect adopted reforms.
  - **Assets are not considered** (accumulated and prospective contributions)
    - Social security contributions (SSC) are individual-based and provide a counterpart value in terms of entitlement to a future financial benefit if a contingency arises. **SSC are not «taxes».**

ISSUES

- Will potentially disfavour defined benefit pension policies
- **No real economic significance**: most countries could not invest funds if they met those unfunded liabilities
- Sustainability is more important than funding ratios
- **Accounting and statistical reporting standards need to faithfully represent the financial position of a scheme.**

The Actuarial Balance Sheet Approach

Assets	Liabilities
Reserve fund	
Present value of future contributions on behalf of present active insured	**Present value of future payments to present pensioners and beneficiaries**
	Present value of future pensions and benefits to present active insured
Present value of future contributions on behalf of future new entrants	**Present value of future pensions of future new entrants**
	Present value of future administrative expenses

Actuarial deficit (surplus)

Social security pension schemes assets and liabilities - methodologies considered

Closed Group without Future Benefits Accruals	Closed Group with Future Benefits Accruals	Open Group
Current participants	Current participants	Current and future participants
	ASSETS*	
Market Value	Market Value + PV of Future Contributions for Current Participants	Market Value + PV of Future Contributions for Current and Future Participants
	LIABILITIES*	
PV of Accrued Benefits for Current Participants	PV of Accrued and Future Benefits for Current Participants	PV of Accrued and Future Benefits Current and Future Participants

Some Canadian Examples

- The following examples are provided with permission by the Office of the Superintendent of Financial Institutions, Canada.

- The Examples come from: "Assessing the Sustainability of the Canada Pension Plan through Actuarial Balance Sheets", Actuarial study #13, released in August 2014 by the Office of the Chief Actuary.

- http://www.osfi-bsif.gc.ca/Eng/oca-bac/as-ea/Pages/ascpp.aspx

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Social security pension system's balance sheet should reflect the system's financing approach

- Pay-as-you-go and partially funded systems represent social contracts
  - Each year current contributors allow the use of part or all of their contributions to pay current beneficiaries' benefits
  - Claims for current and past contributors to contributions of future contributors is created
  - A balance sheet should take these claims into account

These claims are not government debt

- At any valuation date, these claims
  - could be expressed as present value of future contributions of current and future contributors
  - represent a part of system's assets
- The corresponding future benefits should also be taken into account.

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Since only current participants considered, closed group methodologies do not reflect the fact that system creates claim on future participants

CPP– Balance Sheet at 31 December 2012

(9.9% contribution rate, best-estimate scenario)

	Excluding Future Benefit Accruals	Including Future Benefit Accruals
Present Value as at 31 Dec. (in $ billion)	**Closed Group**	**Closed Group**
Assets		
Current Assets	175	175
Future Contributions	-	804
Total Assets (a)	**175**	**979**
Liabilities*		
Current Benefits	370	370
Future Benefits	635	1,175
Total Liabilities (b)	**1,005**	**1,545**
Asset Excess (Shortfall) (a) – (b)	***(830)***	***(566)***
Total Assets as a Percentage of Total Liabilities (%) (a)/(b)	17.4%	63.4%

* Liabilities include administrative expenses. The projected cash flows over an extended time period of 150 years are used

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The open group approach accounts explicitly for sources of financing by considering the benefits and contributions of both current and future plan participants

CPP– Balance Sheet at 31 December 2012

(9.9% contribution rate, best-estimate scenario)

	Excluding Future Benefit Accruals	Including Future Benefit Accruals	
Present Value as at 31 Dec. (in $ billion)	**Closed Group**	**Closed Group**	**Open Group**
Assets			
Current Assets	175	175	175
Future Contributions	-	804	2,071
Total Assets (a)	**175**	**979**	**2,246**
Liabilities*			
Current Benefits	370	370	370
Future Benefits	635	1,175	1,885
Total Liabilities (b)	**1,005**	**1,545**	**2,255**
Asset Excess (Shortfall) (a) – (b)	***(830)***	***(566)***	***(9)***
Total Assets as a Percentage of Total Liabilities (%) (a)/(b)	17.4%	63.4%	99.6%

* Liabilities include administrative expenses. The projected cash flows over an extended time period of 150 years are used

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Public Accounts of Canada favour open group approach

- Public Accounts of Canada (2014) present CPP balance sheet under two approaches
  - open group, and
  - closed group without future accruals

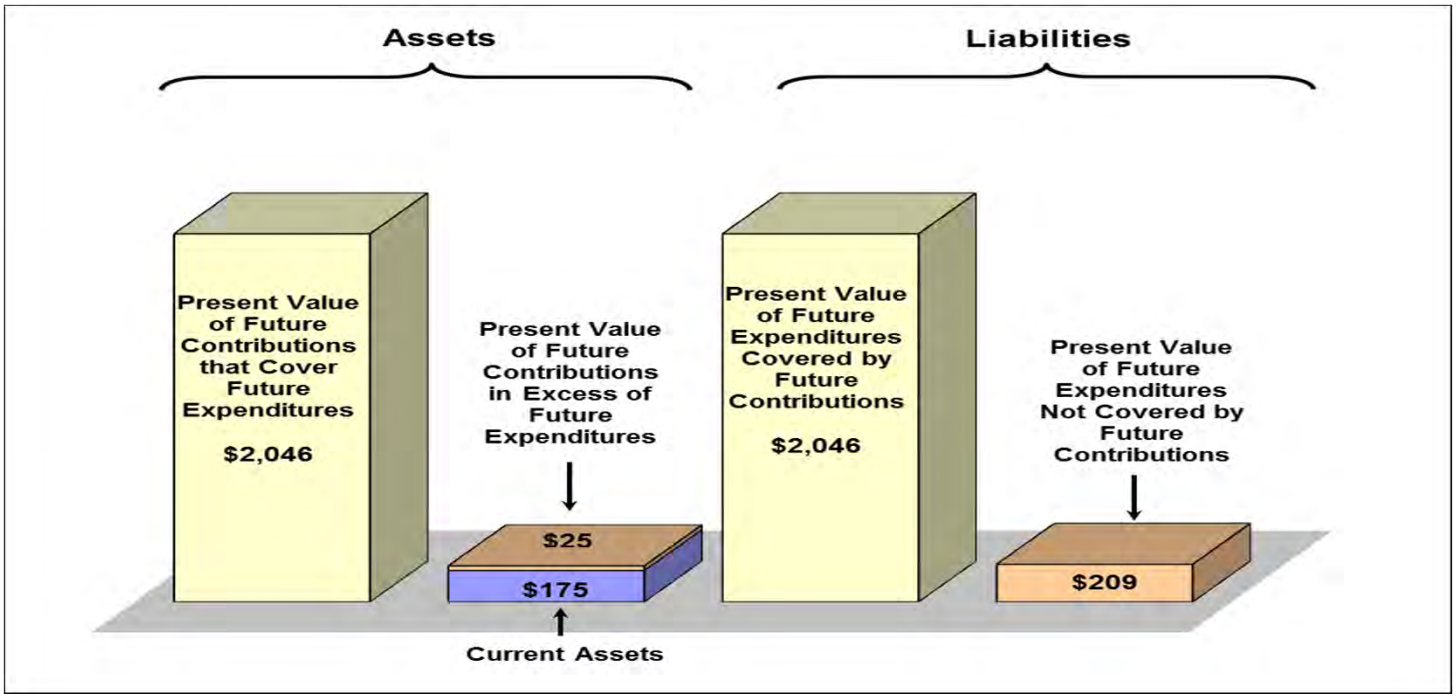
BUT it is stated that

"if the CPP's financial sustainability is to be measured based on its asset excess or shortfall, it should be done on an open group basis that reflects the partially funded nature of the CPP, that is, its reliance on both future contributions and invested assets as a means of financing its future expenditures."

Open Group Modified Balance Sheet – Formation: Step 1

- Separate out present values of contributions and expenditures on assets and liabilities sides of balance sheet

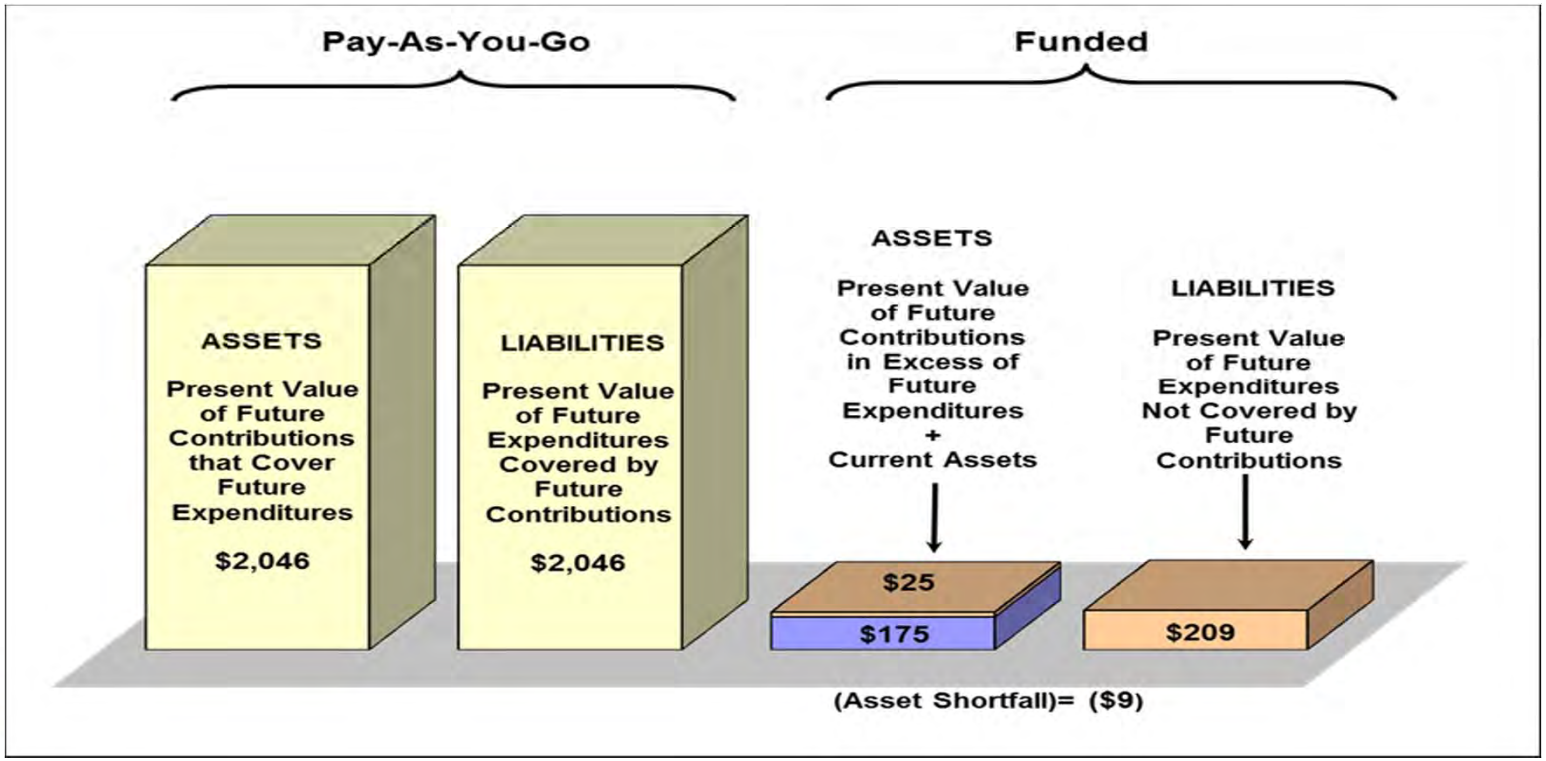
  As at 31 December 2012, 9.9% contribution rate, $ billion:



Open Group Modified Balance Sheet Formation: Step 2

- Regroup present values into pay-as-you-go and funded components

  As at 31 December 2012, 9.9% contribution rate, $ billion:



Actuarial Bases and Assumptions

- Necessity to harmonize assumptions for comparable cross-country figures
- Length of the projection period:
  - For cash flow approach:
    - if projection period too short, expenditures for cohorts entering during projection period are excluded from liabilities
    - but negligible effect after certain number of years because discounting effect (150 years)
    - Useful in low-interest rate environment
    - Capturing scheme maturity effect
  - For cohort approach a 75-year projection period may be appropriate

Actuarial Bases and Assumptions

- Interest discount rate:
  - Closed group valuation approach → discount rate based on government debt securities
  - Pure PAYG system → rate of growth of the contributory base (combination of inflation, productivity and growth of the number of contributors)
  - Partially funded schemes → "PAYG component" using growth of the contributory base and "funded component" using expected rate of return on scheme's assets

- Other assumptions with potential material effect:
  - Fertility rates
  - Labour force participation rates
  - Mortality rates
  - Rate of increase of real wages

Conclusions

- Social security schemes are secured by intergenerational societal commitments
- Social security schemes are the responsibility of the state and their operational framework is different than in the case of private occupational pensions for both sustainability and statistical reporting of their assets and liabilities in national accounts
- Methodology that could be further explored and refined:
  - Actuarial Balance sheets specific to social security schemes for presentation in national accounts
  - Open group basis under cohort approach

Way Forward

- ILO Paper initiative on Methodological Considerations for Measurement of Pension Liabilities

  -- Comments invited

- Invitation to social security actuaries and accountants to comment on IPSASB Consultation Paper on Social Benefits (31.Jan.2016)

  --IAA plans to respond

  https://www.ifac.org/publications-resources/recognition-and-measurement-social-benefits

ACCOUNTING FOR SOCIAL SECURITY LIABILITIES: --THE IMPACT

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Caribbean Social Security Funds

- Partially funded (by design)
  - Contribution rate initially set below true LT cost of benefits
  - Current assets <<< accrued liabilities
- Current expenditure > current contribution income (in most)
  - Investment income used to pay benefits
- Some actuarial reports present “open group” balance sheet
  - Not required by APS 4, ISAP 2

Current SS Finances – 3 Countries

	Bahamas 2011	Barbados 2011	Trinidad & Tobago 2010
Contribution Rate (private)	9.8%	18.25%	11.4%
Expenditure as % of Cont. Income	121%	91%	88%
Reserve-Expenditure Ratio	7.1	7.8	9.0

Open Group Balance Sheet

	Bahamas (BAH $'s 2011)	Barbados (BDS $'s 2011)	Trinidad & Tobago (TT$'s 2010)
Assets			
Current Assets	1,653	3,819	18,529
PV Future Contributions	11,588	17,457	101,498
Total Assets (a)	**13,241**	**21,276**	**120,027**
Liabilities			
PV Future Contributions (b)	**23,787**	**22,793**	**159,295**
Asset Excess/(Shortfall) [(a) – (b)]	(10,546)	(1,518)	(39,268)
Assets as % of Liabilities [(a)/)b)]	56%	93%	75%

National Debt + Social Security "Debt"

	Bahamas	Barbados	Trinidad & Tobago
National Debt as % of GDP (2014)	63%	101%	40%
Social Security "Debt" (assume no change since 2010/11)	124%	17%	22%
Total "Debt"	**187%**	**118%**	**62%**

Are we any better off?

1. Fuller picture of potential government future obligations
2. No new info on whether SS system sustainable or not
    - By design we didn't expect the answer to be 0
3. The "ideal" debt level will be revised to suit
4. In what capacity is the government really obligated?
    - As a source of future funding or policymaker?
5. More visibility may alter list of priorities

Faces of Aging
Les défis du vieillissement

THE SOLUTION: POOLED TARGET DB PENSION PLANS

Robert L. Brown, PhD
FCIA, FSA, ACAS

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

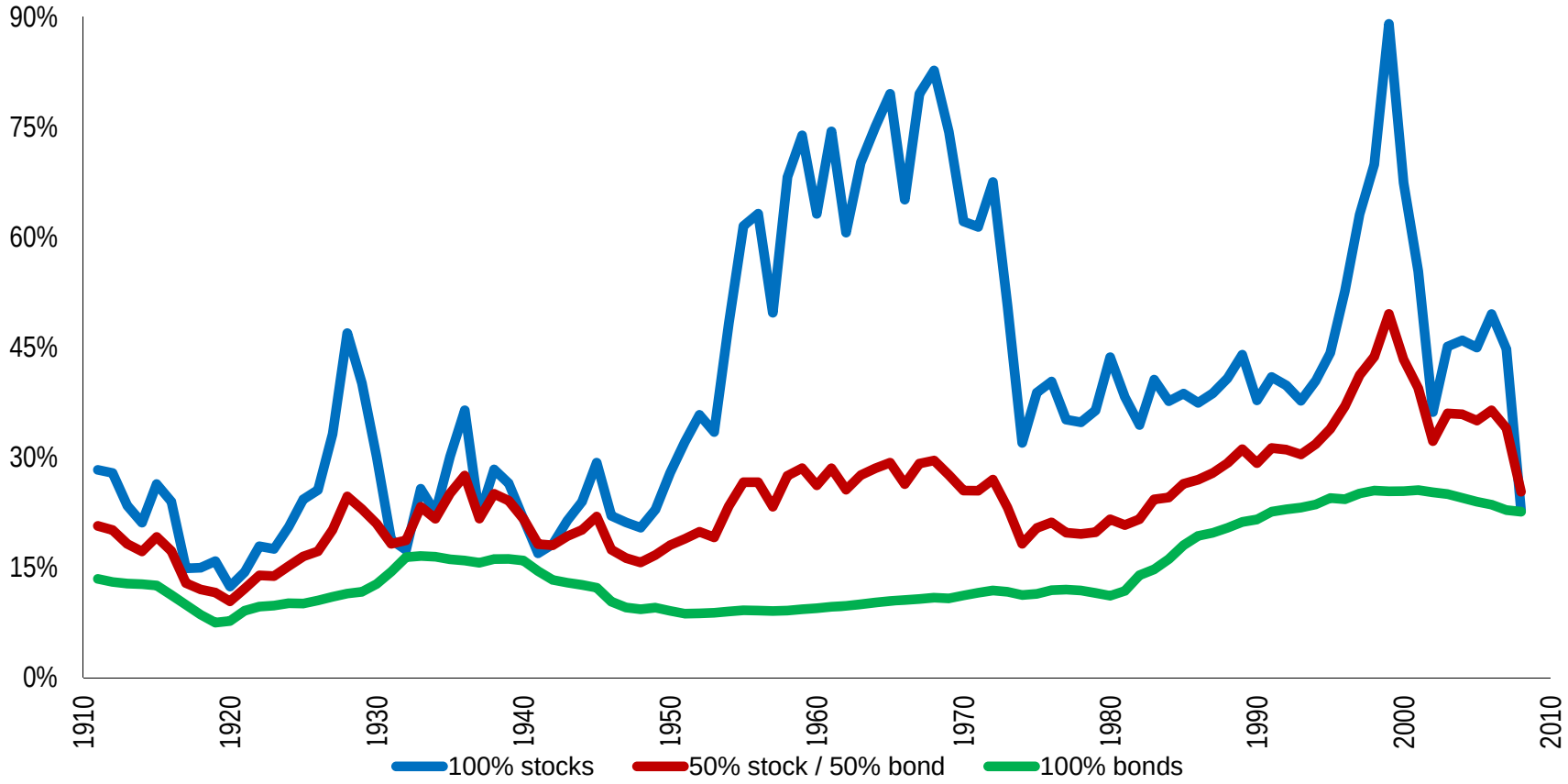
Other Problems with DB

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

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

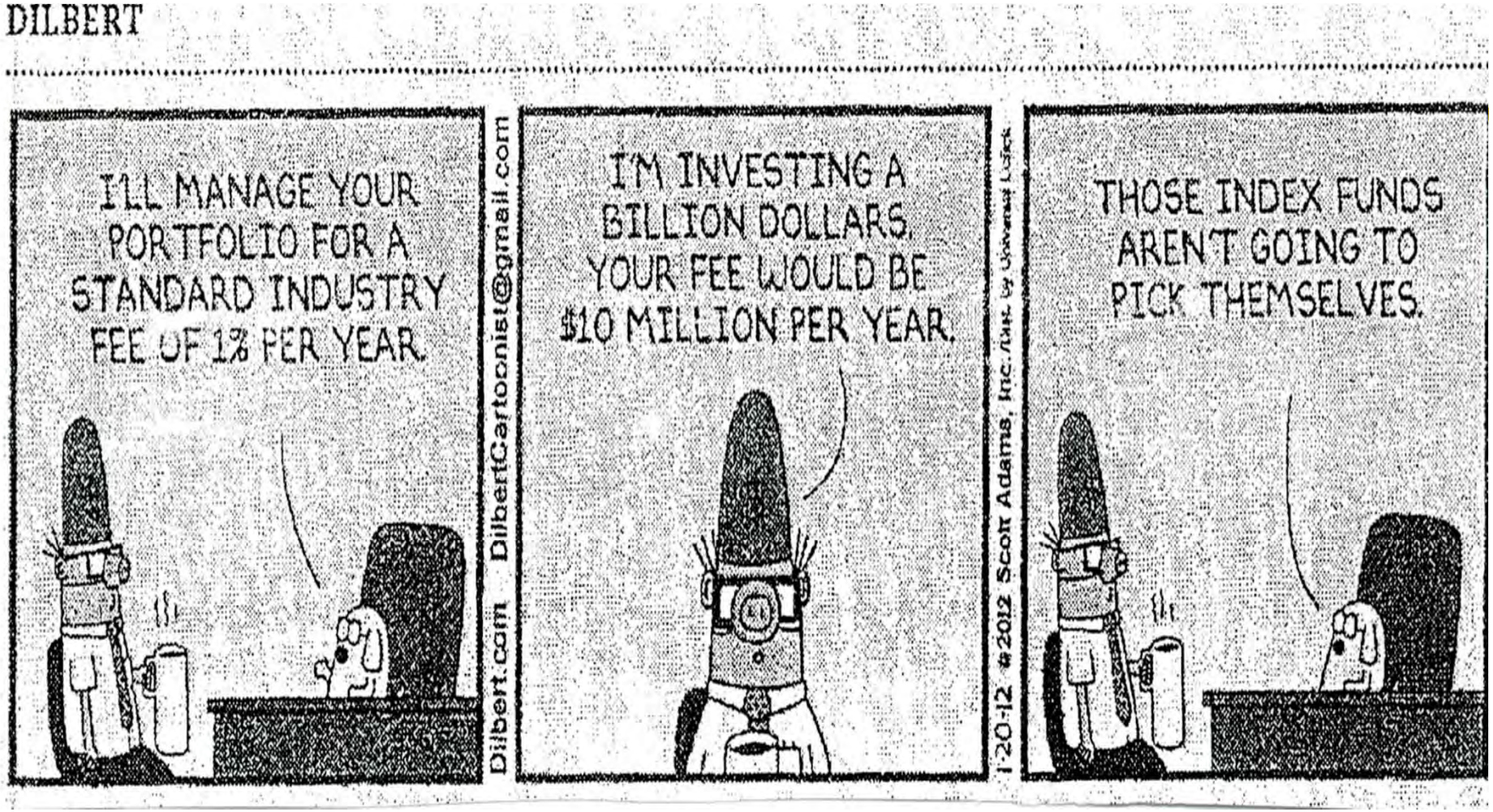
Replacement rate obtained from personal account savings of workers who invest in alternative portfolios



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.
Dilbert.com DilbertCartoonist@gmail.com
I'M INVESTING A BILLION DOLLARS. YOUR FEE WOULD BE $10 MILLION PER YEAR.
1-20-12 ©2012 Scott Adams, Inc./Dist. by Universal Uclick
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
- 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 E’er)
- 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
- 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