International Actuarial Association (IAA)

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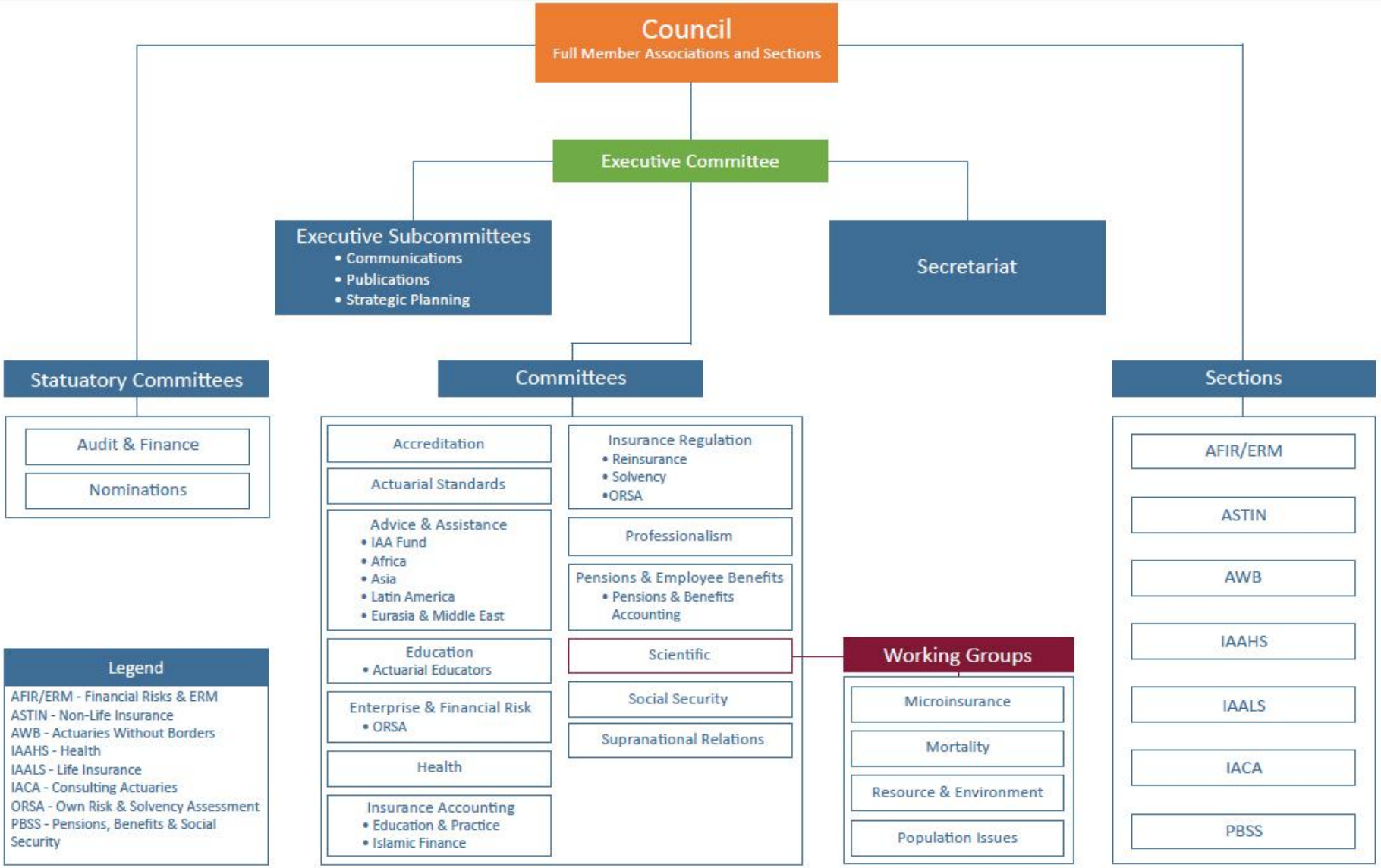
Moving the profession forward internationally

About the IAA

- Worldwide association of professional actuarial associations
  - 66 Full and 30 Associate Member associations representing 62,000-plus actuaries in more than 108 countries
- 16 committees, 4 working groups and 7 special interest sections for individual actuaries
- Over 750 volunteer actuaries (Council, Committees, Sections) and 10 staff
- Based in Ottawa, Canada – constituted in Switzerland
- Exists to encourage development of a global profession, acknowledged as technically competent and professionally reliable, which will ensure that the public interest is served
- The IAA Council and committees meet face-to-face twice per year; Sections host annual or biennial colloquia; an International Congress of Actuaries is held every four years.

International Actuarial Association Organization Chart - 2013



Vision

The actuarial profession is:

- Recognized worldwide as a major player in the decision-making process within the financial services industry
  - in the area of social protection and in the management of risk
- Contributing to the well-being of society as a whole.

Mission

- To represent the actuarial profession and promote its role, reputation and recognition in the international domain

- To promote professionalism, develop education standards and encourage research, with the active involvement of its member associations and Sections, in order to address changing needs.

Value Proposition—to be submitted for approval by electronic ballot

Through the strength of all its member organizations, the IAA will:

- Globalize the actuarial profession
- Establish a global brand
- Promote to relevant key international organizations the important role the actuarial profession can play on the global financial front and demonstrate the relevance of the work of the actuary

Value Proposition cont'd

A solid reputation for the actuarial profession at the global level will benefit all member associations by providing:

- Emerging and new associations with the credibility required at local level to help gain support of local governments and regulators
- More established associations with a voice at the global level
- Assurance that public interest is a priority for the profession

Value Proposition cont'd

A global perspective for the actuarial profession is needed to meet the challenges of a globalized financial services industry environment. This will benefit all member associations, and their members, by:

- Facilitating international collaboration
- Establishing a common level of quality for education, standards and professionalism
- Supporting the development of the profession
- Facilitating relevant research
- Disseminating relevant information

An Active Organization

In the past 6 months:

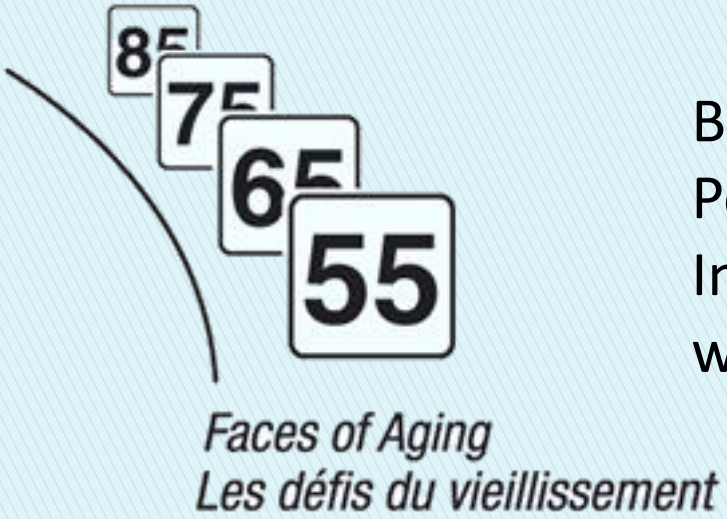
- 5 news releases, 4 newsletters and 2 public pronouncements
- Hosted 127 conference calls
- Representation in 16 international events such as:

Role of the Actuary Seminar	Myanmar
10th Asia Conference on Pensions and Retirement Planning	Malaysia
CAA Annual Conference	China

Highlights for the next council and committee meetings, Zürich, April 2015:

- Discussions on revisions to the IAA Education Syllabus. Every member association should send a representative for this discussion
- Standards Seminar for IAA Member Associations
- ILO Speaker to discuss microinsurance issues

HOW TO ACHIEVE RETIREMENT INCOME SECURITY



Based on paper “Pooled Target Benefit Pension Plans: Building on PRPPs”
Institute for Research on Public Policy—www.irpp.org

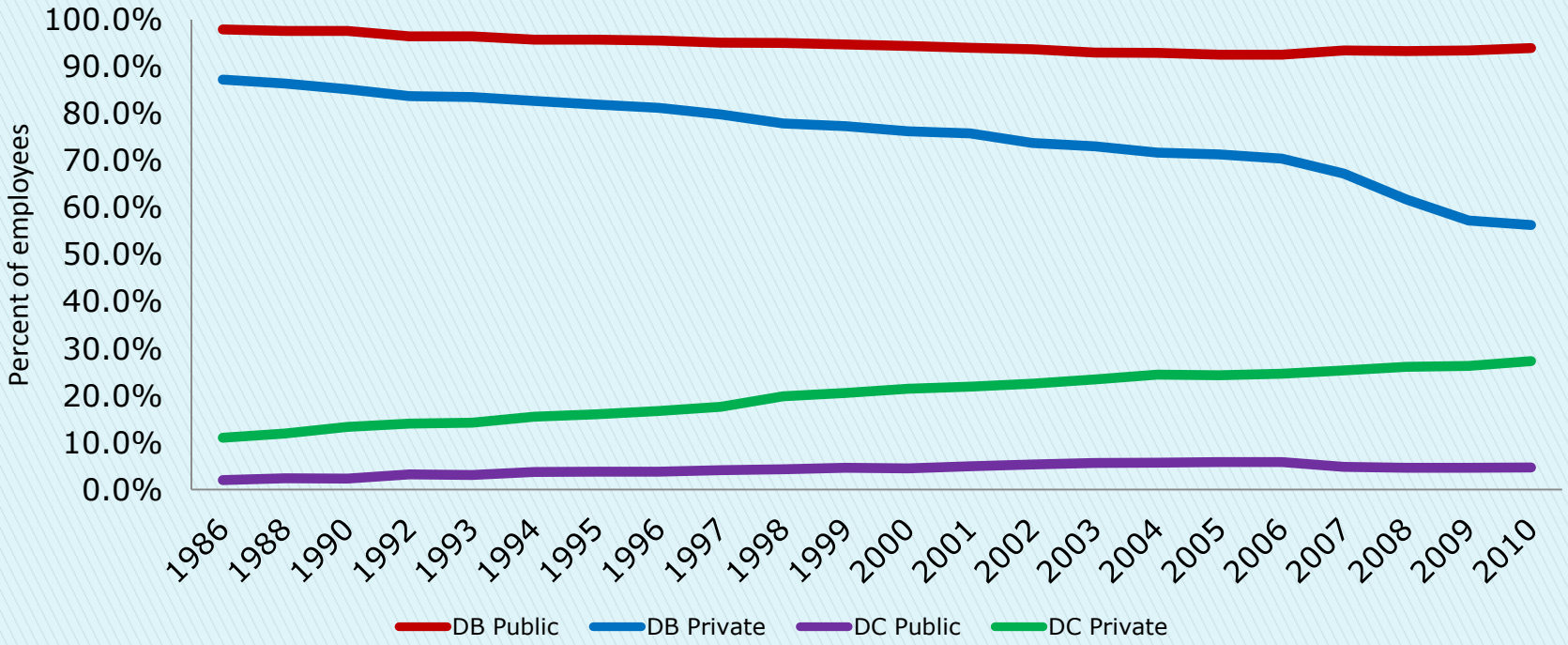
Canadian Context: Changing Landscape

- DB coverage in persistent decline from 39% of labour force in 1986 to 29% in 2010.
- DC plans on the rise
- Membership in DC rose from 7% to 16%
- Leaves many workers vulnerable

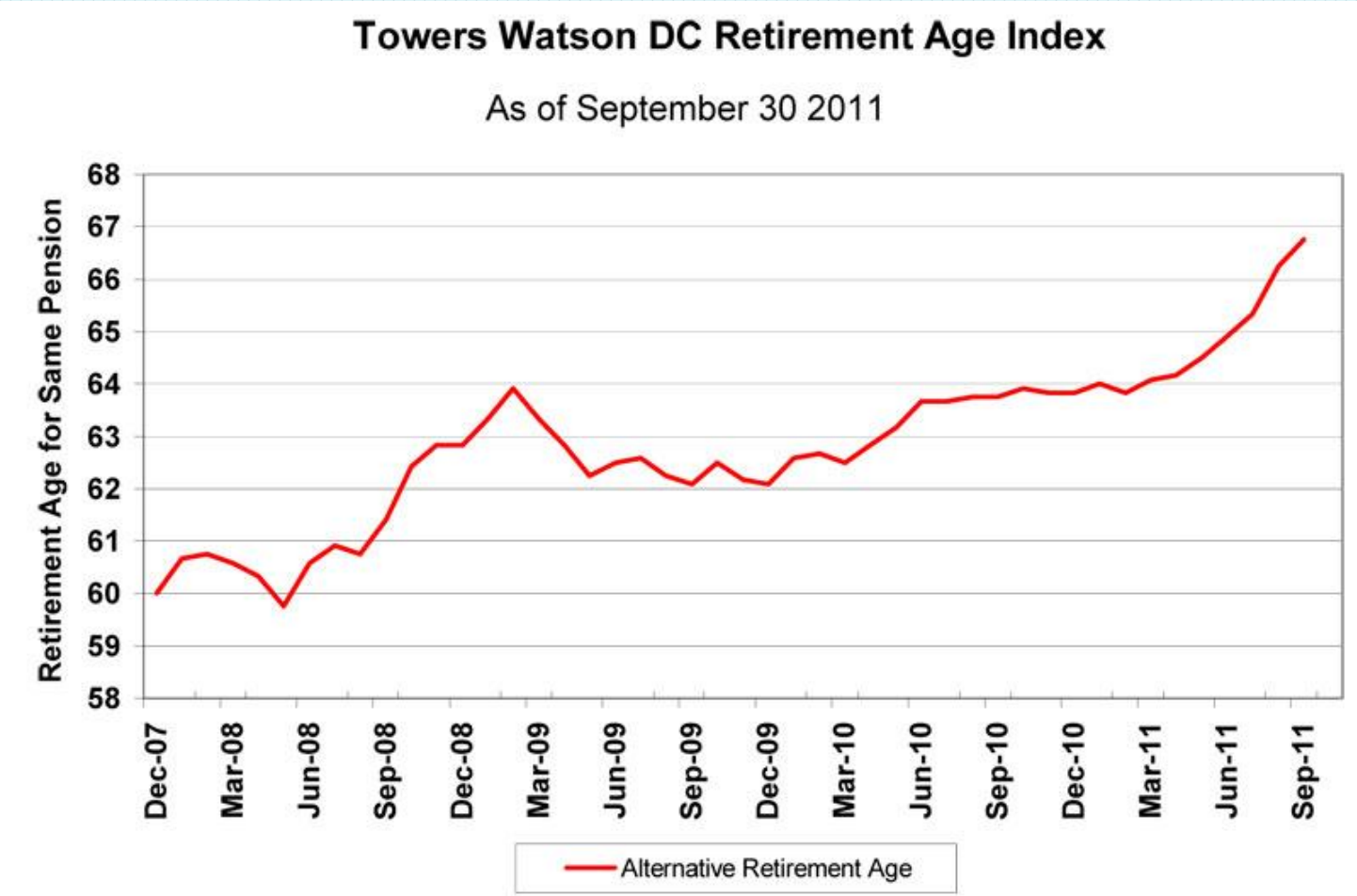
Canadian Context: BiPolar Distribution

- 86% of public sector workers are covered
  - 94% of these are DB
- Only 25% of private sector have a pension
  - Only 56% of those are DB
- Leads to “pension envy”
- Employers want to reduce both cost and its volatility
- Pension risks being passed to worker
- 2008/09 showed that Individual CAP not the answer

Public & Private Sector Membership in DB and DC Pension Plans: 1986-2010



Source: Statistics Canada (2011)



Source: Towers Watson (2011)

Explaining Figure 3

- 2008/09 financial crisis
- Low investment returns in general
- Low “i” means annuities are costly
- Plus life expectancy is up
- Affordable retirement age has risen seven years

Canadian Context: Policy Options

- Expand the C/QPP, either a
  - Higher benefit accrual rate (vs. 25%) or
  - Coverage of higher income levels (vs. AIW limit)
- Target Benefit Pension Plans (Shared-Risk Plans) -- coverage of higher income levels (vs. AIW limit)

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 short vesting and no indexation
- Then through high investment returns
- Now many plans in deficit
- Increasing volatility:
  - Aging plan membership
  - Mark to market
  - Marketplace volatility

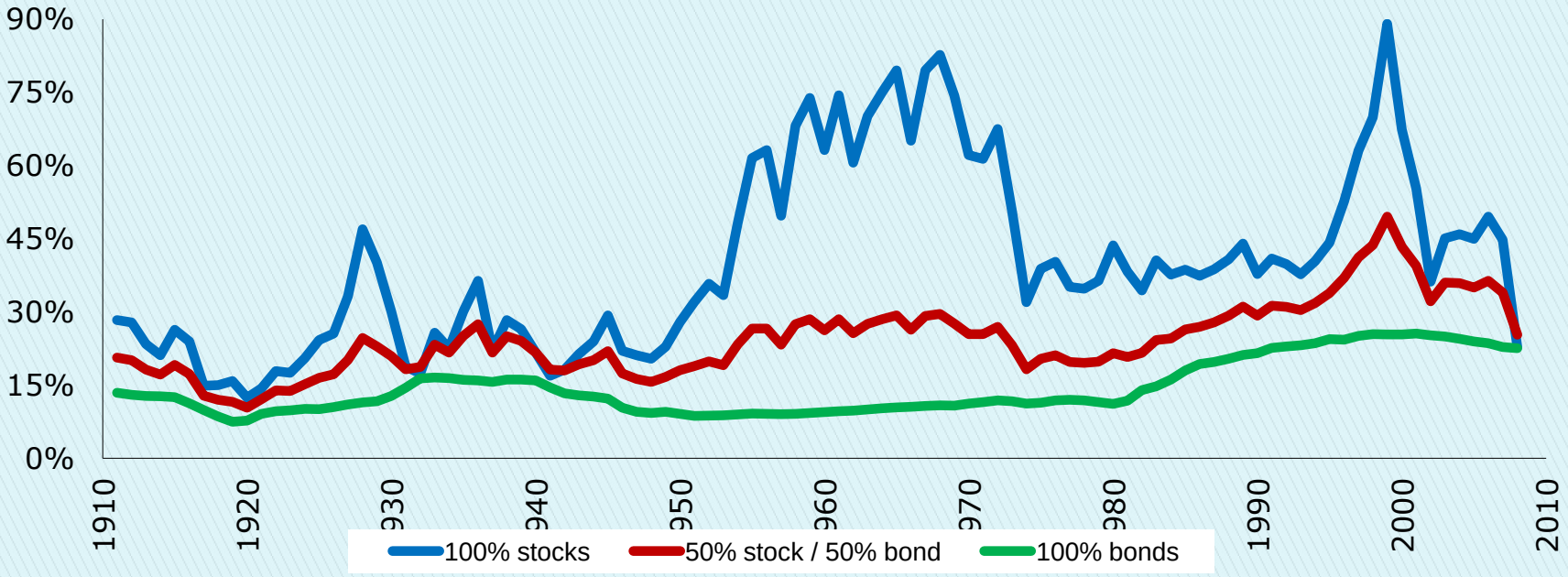
Other Problems with DB

- Sponsor bankruptcy when plan under-funded
  - Low priority of members in bankruptcy
- 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

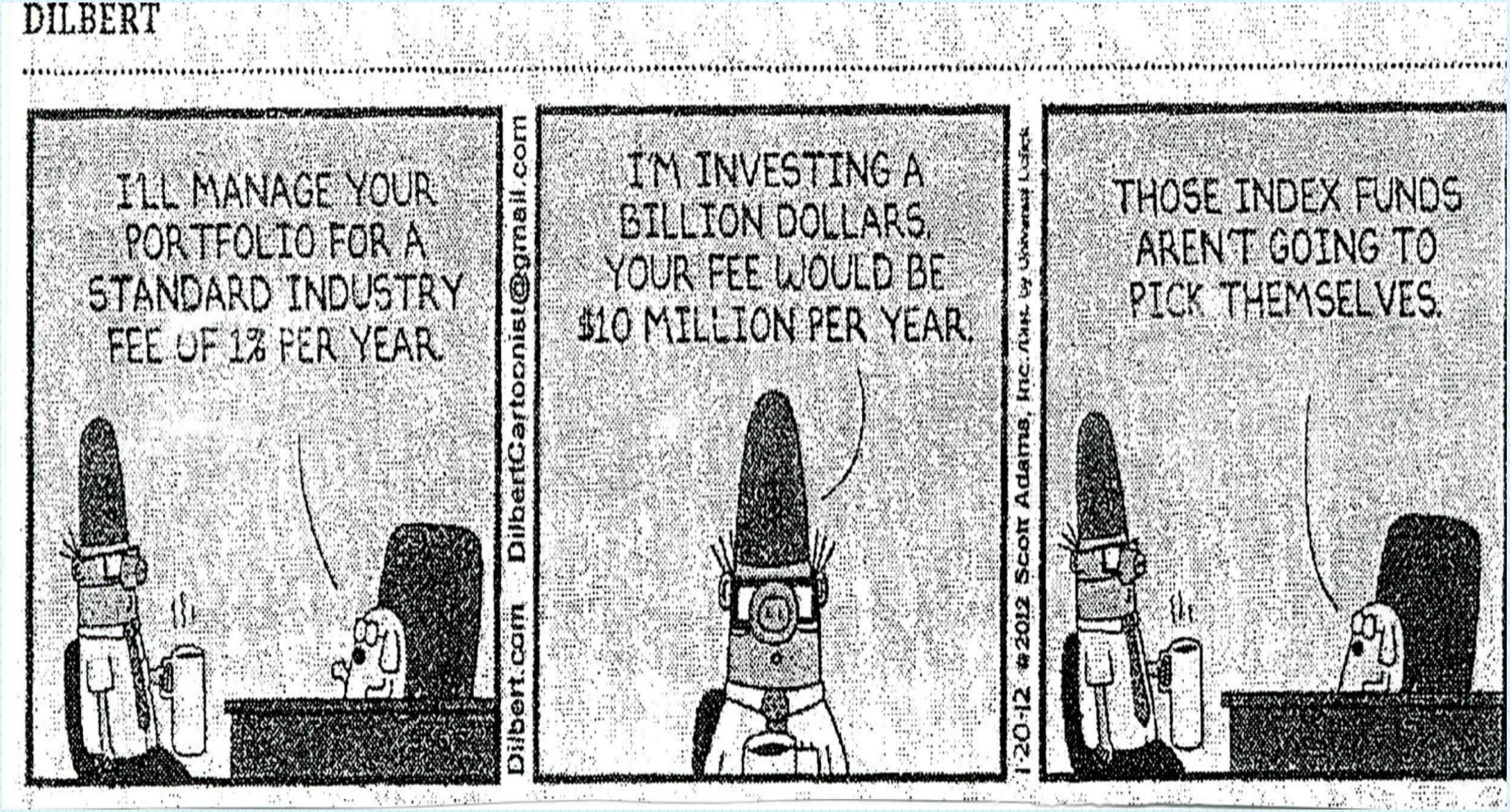
Replacement rate obtained from personal account savings of workers who invest in alternative portfolios



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.
I'M INVESTING A BILLION DOLLARS. YOUR FEE WOULD BE $10 MILLION PER YEAR.
THOSE INDEX FUNDS AREN'T GOING TO PICK THEMSELVES.
Dilbert.com DilbertCartoonist@gmail.com
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Mitigation of Longevity Risk

- With low “i” life annuities are expensive
- Life annuity price assumes 5-star life expectancy
- 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
- Ontario Traditional MEPPs are an example
  - (e.g., Construction Trades)
- These MEPPs do not contribute to the Ontario Pension Benefit Guarantee Fund
- Result is “expected” but “not guaranteed” retirement income

Canada: Retirement Income Security Challenges

- This generation has done well and is OK
- Concern is next-generation middle class who are not saving enough
- Shift from DB to DC pension plans
- More than 60% of workers have no company pension (75% in the private sector)

Size Matters

- Much lower MERs
- Opportunity for private placements/infrastructure
- Large funds also achieve stability of large numbers
- We should target funds of $10B minimum

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-year career with average annual income of $50,000

Source: Ontario Expert Commission on Pension Reform

Pooled Target Benefit PPs

- Some similar plans already exist:
  - Traditional Ontario MEPPs (Construction Trades)
  - Nova Scotia Teachers' Pension Plan
  - Ontario Teachers' Pension Plan
  - BC Public Sector Pension Plans (four)
  - New Brunswick Shared Risk Plans

Principles of Pension Reform

- Appropriate risk sharing (e.g., don't assume worker is an investment expert)
- Size Matters: Both MER and Investment Choices
- Mitigate risk through "large numbers"

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

PTBPPs: The Concept

- *Asset and Risk Pooling*
  - Assets managed globally across the pool
  - Pooled assets for low MER and “size” investment choices
- Could accept new plans or existing assets
- Self-employed could participate
- Participant plans need not be identical
- Just pooled assets

PTBPPs: *Asset and Risk Pooling*

- Minimum pool size must be $10B or merge
- Employer participation not mandated
- But if in, mandatory e'er contribution
- If employer in, then employees auto-enrolled (but can opt out)
- Contributions are locked in
- This mitigates selection bias

PTBPPs: *Contribution Rates and Cost Minimization*

- For plan sponsor, plan is DC
- Employee allowed to make extra contributions
- Model Replacement Rate = 50% (Target Benefit)
- This would require total contributions of 10%
- This plus CPP/OAS is adequate
- Today's average DC total contribution is 8.7%

PTBPPs: *Contribution Rates and Cost Minimization*

- Management fFees would be capped at 40 bp once critical mass is achieved
- Note: BC Public Sector Pension Plans operate with total expenses (admin + investment) = 25 bp

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)
  - Like Ontario Teachers', BC Public Sector PP and Nova Scotia Teachers'

Governance and Investment Management

- There will be arm's-length investment managers
- Governance:
  - All participants will be represented (even retirees)
  - Since e'er is DC, there will not be joint governance
  - Pension board will review investment strategy
  - Can adjust benefits as needed
  - Will be independent pension professionals (not constituency reps)
  - Lower probability of constituency self-interest

Implementation

- Would allow banks and I.C. mo Manage
  - Maybe in seg. funds with lower capital requirements
- Also existing large pension funds
- Or arm's-length gov't sponsored agency (CPPIB)
- Requires modest changes to ITA and PBA

BC Public Sector Pension Plans

- Could be viewed as Target Benefit pension plans
- Inflation Adjustment Account is DC not DB
- Only get full CPI indexing if fund is healthy

Impact of DC Inflation Adjustment Account

- Public Service PP

  --Liabilities if fully indexed: $24.583 B

  --Liabilities with DC IAA: $18.041 B

- Teachers' PP

  --Liabilities if fully indexed: $25.759 B

  --Liabilities with DC IAA: $18.735 B

- College PP

  --Liabilities if fully indexed: $4.278 B

  --Liabilities with DC IAA: $3.110 B

Questions and comments?

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Paper available at:
www.irpp.org