

Good Pension Design

Peter Diamond

WEAI

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Purposes of a pension system

The primary objective of pensions is economic security in old age, achieved through

- consumption smoothing,
- insurance,
- poverty relief,
- risk sharing and redistribution within and across generations.

Pension plans

Traditional contributory plans

- Defined contribution (DC)
- Defined benefit (DB)

Hybrid contributory plans

- Notional defined contribution (NDC)
- Risk-sharing
 - Target benefit, defined ambition, collective DC

Non-contributory plans

Pension plan sponsors

National government – national plan

Public employer

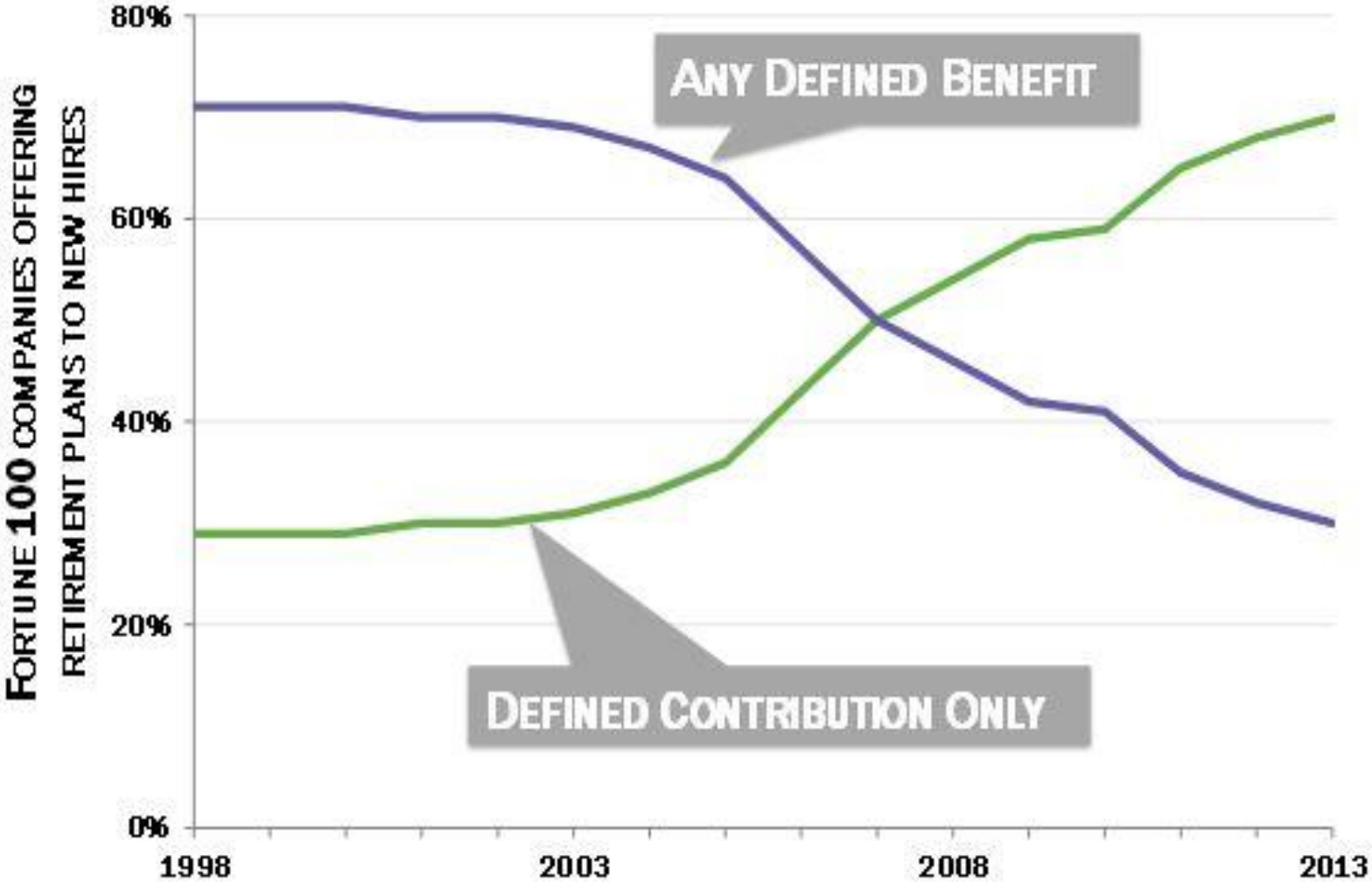
Private employer; group of employers

Individual worker; group of workers

Primary difficulties for pension design

- Diversity in labor market experiences, life expectancies, and family structures.
- Economic and demographic risks to the system.
- Widespread imperfect consumer information and decision making.
- Asset supply responses to the nature of consumer demand.
- Costs of administration can be significant.
- Government needs to be able to do a good job.

A SHIFT TO DEFINED CONTRIBUTION PLANS



Source: Towers Watson
WWW.BIPARTISANPOLICY.ORG



Issues

- Improve DC accumulation
- Innovate risk-sharing
- Improve annuitization

The “Compound Interest” question

“Let’s say you have 200 dollars in a savings account. The account earns 10 percent interest per year. How much would you have in the account at the end of two years?”

Source: Lusardi, A. & Mitchell, O.S., The Importance of Financial Literacy: Evidence and Implications for Financial Education Programs

The “Compound Interest” question

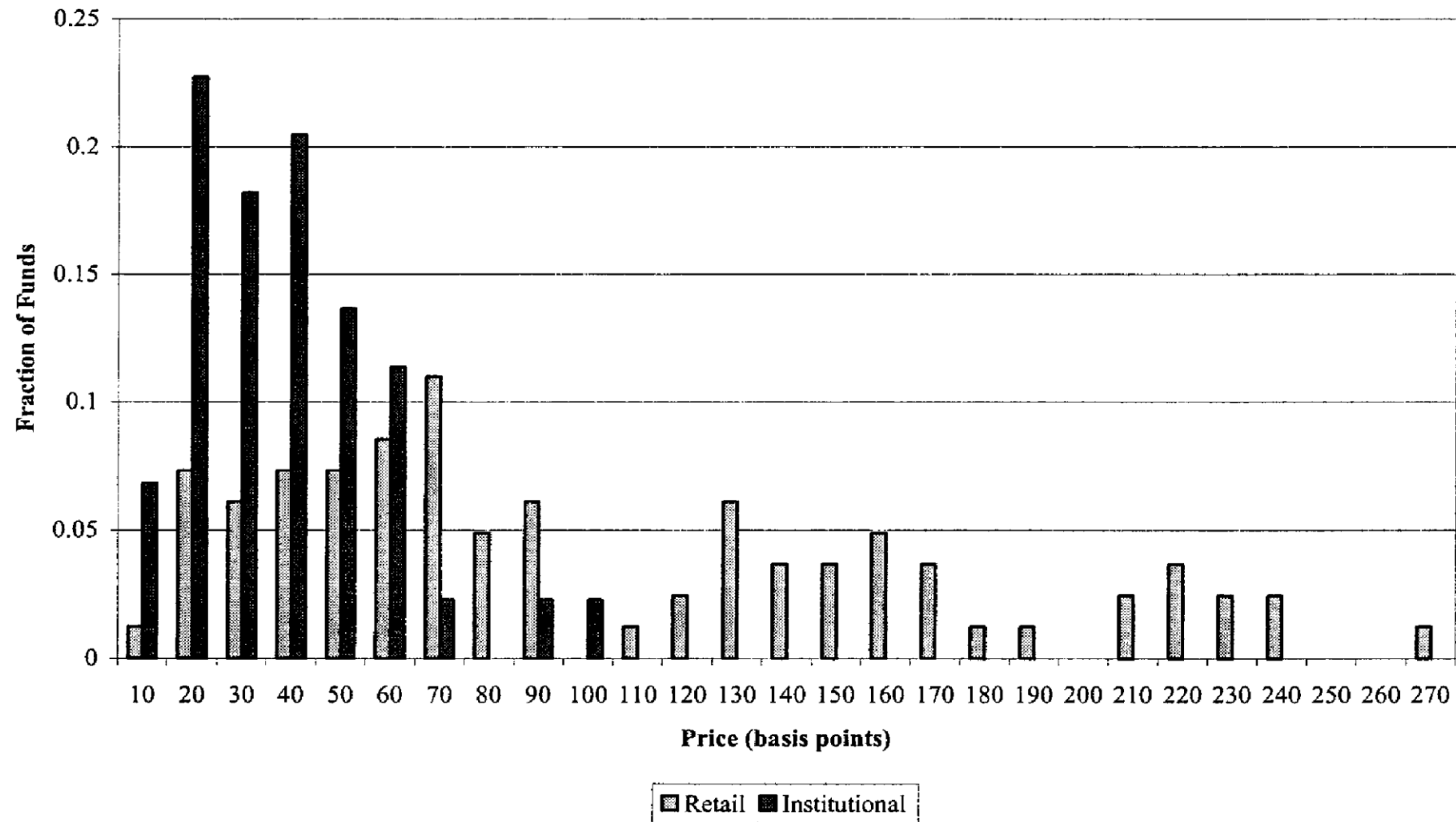
“Let’s say you have 200 dollars in a savings account. The account earns 10 percent interest per year. How much would you have in the account at the end of two years?”

Correct	Incorrect	Do not know
17.8%	78.5%	3.2%

Source: Table 1. Lusardi, A. & Mitchell, O.S., The Importance of Financial Literacy: Evidence and Implications for Financial Education Programs

2000 Price Histograms

Retail and Institutional S&P 500 Funds



Source: Figure II., Hortacsu, A. & Syverson, C., 2003. Product Differentiation, Search Costs, and Competition in the Mutual Fund Industry: A Case Study of the S&P 500 Index Funds.

Decline in Value of Accounts Due to Fees After a 40-Year Work Career ^a

Type and Level of Fees	Percentage Decline in Account Value Due to Fees
Front-load fees (% of new contributions) of:	
1 percent	1 %
10 percent	10 %
20 percent	20 %
Annual management fees (% of account balance) of:	
0.1 percent	2.2 %
0.5 percent	10.5 %
1.0 percent	19.6 %

a. Assuming real wage growth of 2.1 percent and a real annual return on investments of 4 percent. With a larger difference between the rate of return and the wage growth rate, the charge ratio with annual management fees is slightly larger, and conversely.

How banks design financial products

The headline rate - a high return under their best-case scenario –
– is part of a complex payoff formula.

Based on a text analysis of the payoff formulas of the 55,000
products issued in Europe from 2002 to 2010.

In the cross section, the headline rate is positively correlated
with the level of complexity and risk.

Claire Célérier, Boris Vallée, CATERING TO INVESTORS THROUGH
SECURITY DESIGN: HEADLINE RATE AND COMPLEXITY,
November 1, 2016

DC accumulation approaches

- Wide market access (Australia, Hong Kong)
- Small number of dedicated firms (Chile)
- Single central organizer (Premium Pension (Sweden), NEST (UK), TSP (US))

All involve limits on allowable investments, with varying degrees of limitation.

Australia: Superannuation: Assessing Efficiency and Competitiveness

Productivity Commission Draft Report, April 2018

- While some funds consistently achieve high net returns, a significant number of products ... underperform markedly
- Fees remain a significant drain on net returns.
- Members lack access to quality, comparable information to help them find the best products.
- Inadequate competition, governance and regulation have led to these outcomes.

Overview of the Hong Kong Mandatory Provident Fund System

Findings of the Cost Study probably suggest that **it is not enough merely to rely on market forces to drive down fee levels of MPF funds.**

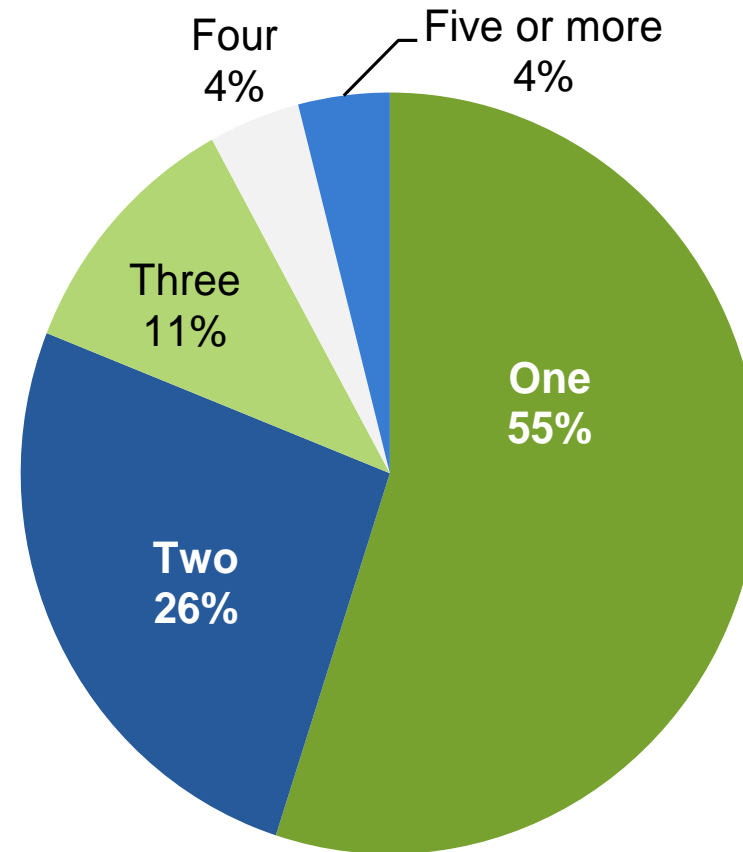
Source: *Legislative Council Secretariat IN07/12-13, Research Division,*

Hong Kong Fund Expense Ratio (FER %)

(as of June 2016)

Fund Type	Number of Funds	Average	Lowest	Highest
Equity	180	1.58	0.63	2.29
Mixed Assets	183	1.72	0.70	2.11
Bond	49	1.38	0.78	1.90
Guaranteed	27	2.08	1.29	3.75
Conservative	12	0.69	0.13	1.21
Money Market and Others	13	1.17	0.60	1.39

Number of Superannuation Accounts Held



Source: Figure B.1, Australian Government, Productivity Commission, How to Assess Superannuation Competitiveness and Efficiency, Draft Report., 2016.

Hong Kong MPF Default Investment Strategy

Life-cycle mix of two funds, with declining risk with higher ages.

Fees and expenses cannot be higher than 0.75% and 0.2% of net asset value of the fund, respectively.

Australia: superannuation default proposal

- The report proposes to change the default process based on a provided **top-ten MySuper** list.
- Workers can choose from the list or from outside the list.
- Workers who make no choice are allocated to a fund in the list on a ‘cab-rank’ basis.
- Workers changing employers without declaring a new provider would stay in their existing fund, whether it was a previous choice or resulted from a default.

DC accumulation approaches

- Wide market access (Australia, Hong Kong)
- **Small number of dedicated firms (Chile)**
- Single central organizer (Premium Pension (Sweden), NEST (UK), TSP (US))

The demonstration effect of Chile

- Peru (1993), Argentina (1994), Colombia (1994), Uruguay (1996), Bolivia (1997), Mexico (1997), El Salvador (1998), Ecuador (2001), Costa Rica (2001), the Dominican Republic (2003–05), and Panama (2005–07)
- Hungary (1998), Poland (1999), Latvia (2001), Bulgaria (2002), Estonia (2002), Lithuania (2004), Slovakia (2005) and Romania (2008).
- China (1998) and Hong Kong (2000).

Retreat from individual accounts

- Estonia, Latvia, Lithuania, Poland and Romania changed the balance of contributions: less to individual accounts and more to finance Pay-As-You-Go (PAYG) benefits.
- Hungary and Argentina abandoned individual accounts altogether and transferred both the flow of contributions and the stock of assets to the PAYG system.
- China never did implement

Chile: Auction Mechanism (2008 reform)

AFPs bid for all new entrants to the labour force over a two-year period, who have to stay with the winning bidder for at least 18 months.

The AFP has to offer the same low commission to its existing members and to any new members.

After 18 months, the AFP can increase its commission for all members, preserving uniformity.

DC accumulation approaches

- Wide market access (Australia, Hong Kong)
- Small number of dedicated firms (Chile)
- **Single central organizer (Premium Pension (Sweden), NEST (UK), TSP (US))**

Sweden: Premium Pension in 2016

- Government collects contributions and does record-keeping.
- A government fund competes with the private funds and provides the default.
- 843 private funds administered by 108 management companies
 - 573 equity funds
 - 97 mixed funds
 - 41 generation funds
 - 132 interest funds

Sweden: Premium Pension fees, 2016

- Administration cost: 0.07%.
- Rebate on the ordinary expenses of the funds, equivalent to a reduction in fund management fees of about 0.49 percentage points.
- The capital management fee is 0.23 percent (excluding transaction costs of .05).
- AP7 default funds yearly fees:
Equity Fund 0.14% and Fixed Income Fund 0.05%.

Sweden: Premium Pension Default (AP7 SÅFA)

- 45 per cent of pension savers are in the default fund, which manages 30 percent of capital in the system.
- Almost all new entrants use the default.

UK: National Employment Savings Trust (NEST)

- Automatic enrolment into NEST or other occupational plan
- Choice from small number of funds
- Centralised account administration
- Wholesale fund management
- Savings fully portable; and more than one employer can contribute to a member's savings pot

UK NEST Charges

- Employers
 - 100% online platform
 - Employers face compliance costs but no charges
- Members
 - Annual management charge 0.3%
 - Temporary 1.8% charge on contribution (covering startup costs, after which it stops)

U.S. Thrift Savings Plan Funds

- Government Securities Investment (G) Fund
- Fixed Income Index Investment (F) Fund
- Common Stock Index Investment (C) Fund
- Small Capitalization Stock Index (S) Fund
- International Stock Index Investment (I) Fund.

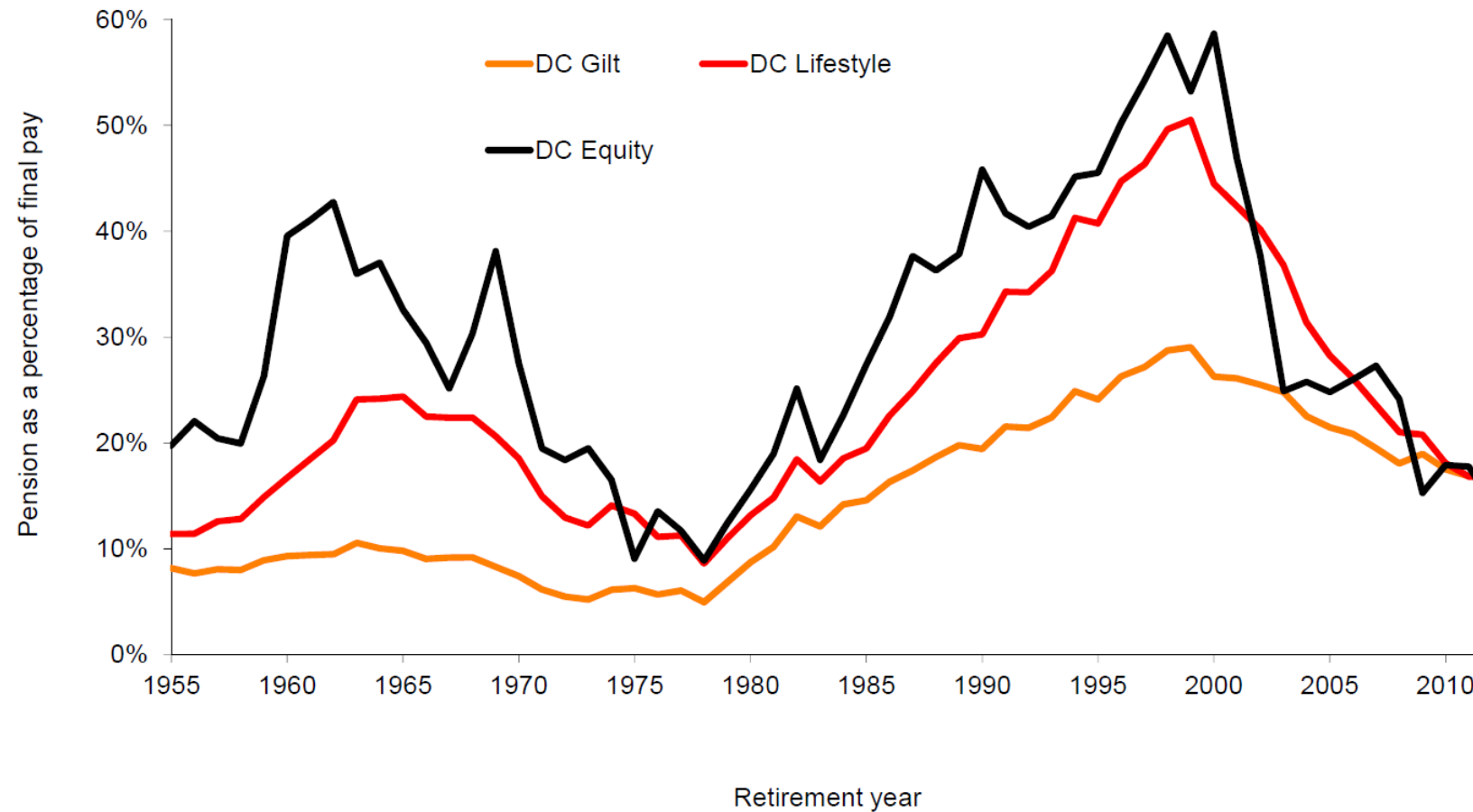
and

- Lifecycle funds, which are invested in the individual TSP funds—G, F, C, S, and I.

Issues

- Improve DC accumulation
- **Innovate risk-sharing**
- Improve annuitization

Historic DC outcomes: The chart shows vividly the extreme range of outcomes a member might have experienced - ranging between 6% and 60% of final pay.



: Figure 1, Wesbroom et al. "The Case for Collective DC, A new opportunity for UK Pensions," *Aon Hewitt White Paper*, Nov 2013.

Equivalent rates of return

- DC: Only safe asset **2%** real return
- DC: Also risky asset iid risk $E_r=5.9\%$ ann risk of SP500
Equivalent to safe return of **3.33%**
- DB: max chosen for zero expected growth of fund under optimal policy
Equivalent to safe return of **4.39%**
- DB with participation constraint as in Netherlands:
Equivalent to safe return of **3.83%**

Christian Gollier, 2008, Intergenerational risk-sharing and risk-taking of a pension fund. *Journal of Public Economics*, 92, 5-6, 1463-1485.

Explicit risk sharing

- National plan with buffer fund (Inkomstpension, Sweden)
- Partially-funded national plan (Canada Pension Plan)
- Fully-funded public employer (New Brunswick, Canada, Wisconsin, South Dakota, US)
- Fully-funded private employer (Netherlands, UK)

Notional Defined Contribution

To date, five European OECD countries have implemented a full NDC reform:

- Sweden (legislated 1994, implemented gradually, beginning in 1996, with full implementation 1999),
- Italy (legislated as of 1995 and implemented as of 1996, with reform measures and accelerated implementation as of 2012),
- Latvia (legislated 1995, implemented as of 1996),
- Poland (legislated 1998, implemented as of 1999),
- Norway (legislated 2009, implemented as of 2011).
- Also, Kyrgyzstan (legislated 1997),

Sweden: Inkomstpension balancing

Assets

The value of assets of the National Pension Funds
plus
the contribution asset, equal to the pension liability that the contribution revenue for the accounting year could finance if the conditions prevailing at the time of valuation remained constant.

Liabilities

Pension balances of insured persons who have not begun to draw an old-age pension
plus
annual amounts to retirees multiplied by the expected number of years for which the amount will be disbursed. The number of years is discounted in order to reflect the indexation.

Sweden: Inkomstpension balancing

- **Balance ratio** is assets/liabilities, lagged for data availability.
- **Damped balance ratio** is equal to 1 plus one-third of the difference between the balance ratio and the number 1.
- If the balance ratio is less than 1.0, the **balance index** is used instead of the income index, $B_t = I_t \cdot BT^*$, so indexation of pensions and pension balances is reduced.
- After balancing, later surpluses are used to increase indexation and thus to restore the value of pensions.

Canada Pension Plan

Every three years, the Chief Actuary of Canada reviews the contribution rate required to sustain the CPP over the next 75 years.

Insufficient rates provisions of Base CPP
serve as a safety net in case of political impasse

If the minimum contribution rate is higher than the
legislated contribution rate

AND

if the federal and provincial finance ministers cannot
reach an agreement

THEN

Contribution rate increased by $\frac{1}{2}$ of excess over three
years

Benefits frozen until next review (3 years).

SOUTH DAKOTA RETIREMENT SYSTEM

Hybrid features are essential for an equitable distribution of benefits to both career and non-career members.

Variable benefits based on affordability measures are essential for sustainability and the COLA is the most logical benefit feature to vary.

A realistic planning horizon for mature systems like SDRS is 10-20 years because of the duration of our liabilities.

If costs are not controlled, SDRS will be replaced by a defined contribution plan.

New Brunswick Public Service Pension Plan

The purpose is to provide **secure pension benefits without an absolute guarantee**, but with a high degree of certainty that base benefits can be met in the vast majority of potential future economic scenarios.

Future cost of living adjustments and other ancillary benefits such as early retirement subsidies will only be provided to the extent that the pension assets are sufficient to pay such benefits.

The Funding Policy provides guidance and rules regarding decisions that must, or may be made by the Board of Trustees around funding levels, contributions and benefits.

NBPSPP Funding Policy

- The 15 year open group funding ratio compares the fair market value of the Plan's assets, plus the present value of excess contributions over the next 15 years, to the Plan's liabilities.
- The Plan's liabilities are based on the benefits earned to the date of the report.
- This asset-liability ratio is used to determine the actions, such as granting indexing, to be taken by the Board of Trustees under the Plan's Funding Policy.

NBPSPP Open group funded ratio falls below 100% for two successive years

- A contribution increase of up to 3% of earnings (1.5% each for employee and employer contributions) until such time as the open group funded ratio reaches 110% (without considering the effect of the contribution increase) and the funding goal under regulation is met.
- Future and present benefits can be reduced:
 - Change the rules for non-vested members to a full actuarial reduction for early retirement; then
 - Reduce base benefit accrual rates for future service by no more than 5%; then
 - Reduce base benefits on a proportionate basis for all members for both past and future service in equal proportions.

NBPSPP Open group funded ratio high enough

Exceeds 105% for two successive plan year ends:

- Reverse previously reduced base benefits

- Indexing of base benefits for future payments up to full CPI for years that have been missed

Exceeds 140%:

- Reduce contribution rates to maintain ratio of 140%;

- Establish a reserve for potential contingent indexing;

- Propose benefit improvements.

Issues

- Improve DC accumulation
- Innovate risk-sharing
- **Improve annuitization**

Possible benefit structures

- Lump-sum withdrawal
 - Full, Partial
 - Phased (maximum monthly amount)
 - Required (minimum annual amount)
- Annuity (mandatory or voluntary)
 - Single, Joint-life
 - Nominal, Real, Indexed, Variable
 - Immediate, deferred

DC drawdown: annuities

- Information (Chile)
- Tontine (Sweden)

Choice of annuity provider, UK

In 2012, 60% of annuities were purchased through the customer's existing pension provider or a third party with which their provider has an arrangement.

We estimate that overall 80% of those purchasing an annuity from their existing pension provider would benefit from shopping around and switching.

Financial Conduct Authority, Thematic Review of Annuities, February 2014, p. 12, 14.

Choice of annuity provider, Chile

In order to retire, all members must consult with the Online Pension Consultation and Bidding System (*Sistema de Consultas y Ofertas de Montos de Pensión*, or SCOMP).

This system grants ... access to more and better information for making decisions, which ultimately leads to greater transparency.

SUPERINTENDENCE OF PENSIONS, 2010, THE CHILEAN PENSION SYSTEM

Tontine

Lorenzo di Tonti: Born 1602 (Italy), died 1684 (Paris). Real name: Lorenzo Baroncini.

A simple tontine involves a group of investors who each buy a share of a fund that pays out returns that are divided among the remaining living members.

Sweden: Premium Pension Annuity

Mandatory annuitization (unisex rules) with the government providing two options

- Traditional insurance-with-profit annuity: a nominal guaranteed monthly amount with possible monthly supplement, which may vary from year to year.
- Retain accumulated balance in the fund. The value of the pension account is divided by an annuity divisor, based on forecasts of future life expectancy.

Sweden: Premium Pension Annuity

The amount of the premium pension is recalculated once each year, based on the value of fund shares in December.

The capital released by deaths in the previous calendar year are distributed once a year as “inheritance gains.”

The pension amount depends on the rate of return of the funds chosen by the saver and realized mortality of the saver’s cohort.

Sweden: Premium Pension Annuity default

Up until 2009, the unit-linked insurance was the default.

At the turn of 2009/2010 the default option was removed, and the individual had to select either unit-linked insurance or life annuity insurance.

In May 2011, the default option was reinstated.

When the default option was removed, the proportion that chose life annuity insurance rose from around 10 to about 50 percent.

When it was restored the proportion that chose life annuity insurance dropped to about the same level as before the application form was changed.

Pension Reform

A Short

Nicholas Barr and



尼古拉斯·巴尔 (Nicholas Barr)
彼得·戴蒙德 (Peter Diamond)

养老金改革 理论精要

Pension Reform:
A Short Guide

中国劳动社会

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necesaria
El futuro de
las pensiones

Nicholas Barr
y Peter Diamond



El Hombre del Tres

Nobliści z ekonomii

Nicholas Barr
Peter Diamond

Reformy systemu emerytalnego

Krótki przewodnik



Polskie Towarzystwo Ekonomiczne