

# Risk-Focused Ingredients for a Successful Pension System

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*World Pension Summit*

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# Others have their own approach

## World Bank pillars: a classification system

Pillar No.	Coverage	How managed	How financed	Fundedness
0	Universal	Publicly	General taxes	N/A
1	Mandatory	Publicly	Specific taxes	Pay-as-you-go
2	Mandatory	Privately	Contributions	Full (DC by definition)
3	Voluntary	Privately	Contributions	Varies
4	Voluntary	Both	Formal and informal support, private savings, homes	Varies

Reference: The World Bank Pension Conceptual Framework, contained in the World Bank Pension Primer ([socialprotection@worldbank.org](mailto:socialprotection@worldbank.org))

# Others have their own approach

Melbourne Mercer Global Pension Index: a rating system

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**Each nation's aggregate arrangements considered, under three headings**

**1. Adequacy (weighted 40%)**

Minimum level, and replacement level at median income

**2. Sustainability (weighted 35%)**

Demographics, contributions, risk-sharing, coverage

**3. Integrity (weighted 25%)**

Of the private sector system: governance, participant protection, operating cost

# My approach today: identify the relevant risks and mitigate them

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- 1. Political risk**
- 2. Longevity risk**
  - (a) Borne by individual**
  - (b) Pooled**
- 3. Market risk**
  - (a) Borne by individual**
  - (b) Pooled**

**And some hybrid arrangements**

# Political risk: Definition

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**The risk of a political decision that changes outcomes, costs, rewards, operations, even retroactively; therefore it is associated with the absence or reduction of property rights**

# Political risk: Issues

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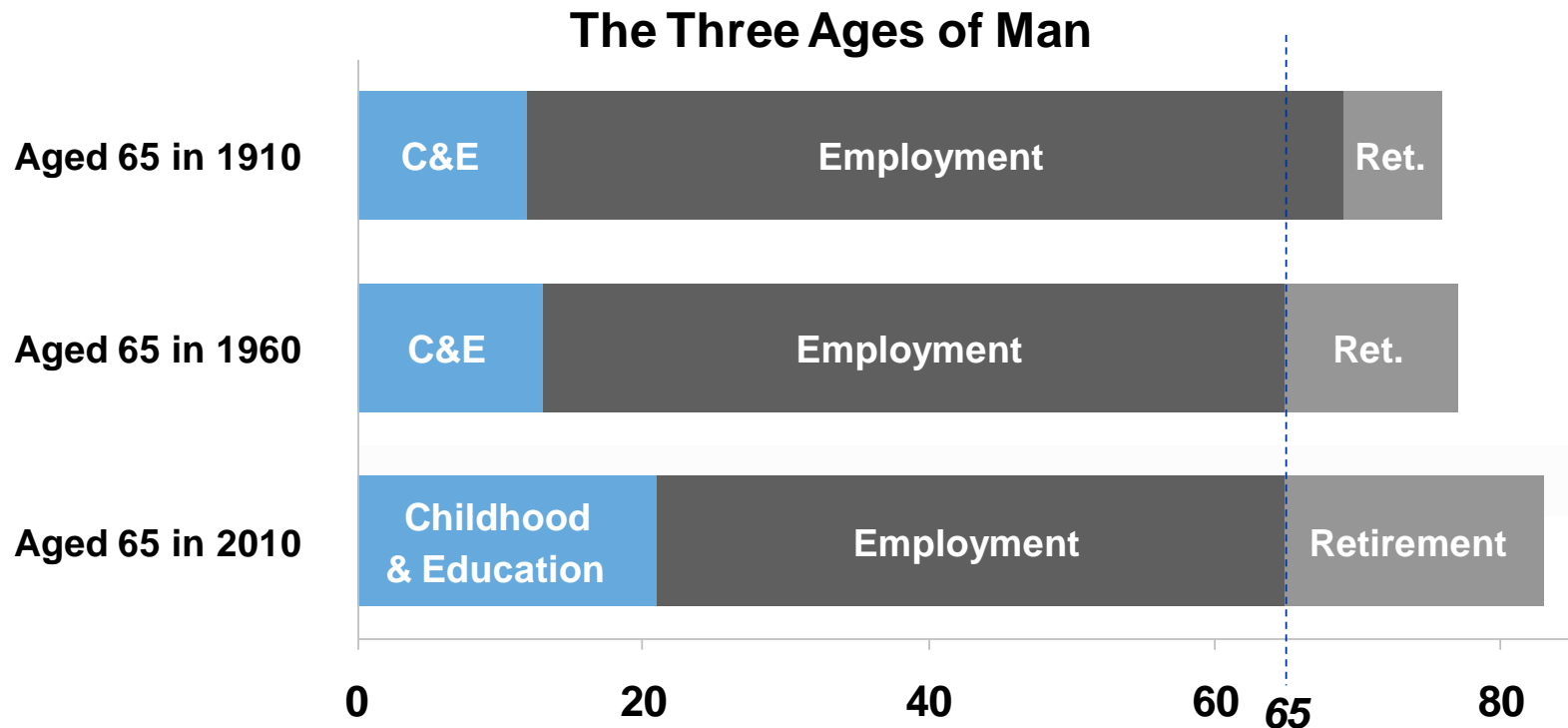
- **Issue: Politicians promise benefits that require increasing contributions; no representative for next generation**
- **Issue: Beneficiaries have sense of entitlement**

# Example: US Social Security

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- **Originally designed with sustainable contributions**
- **Numerous changes, with benefits increased much more than contributions; now unsustainable**
- **Much redistribution: essentially three plans, with successively lower benefits for contributions as covered income increases**

# Demographics are evolving



Source: 2009: Office for National Statistics; 1960: <http://www.bls.gov/opub/mlr/2001/10/art2full.pdf> ;

1910: <http://research.dwp.gov.uk/asd/asd5/rports2005-2006/agepos21summ.pdf>;

Life Expectancy at 65: <http://www.public-sector-pensions-commission.org.uk/wp-content/themes/pspc/images/Public-Sector-Pensions-Commission-Report.pdf>; Workforce entry data in 2010 estimated on the basis of full time education trends

# Yet I maintain ....

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**It's important to have some universal base that is:**

- **Defined benefit**
- **Linked to (moderate) inflation**
- **Lifetime income**

**... because of the huge benefits of pooling**

**... and political risk is not necessarily a barrier**

# Political risk: Principles

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- **Issue: Politicians promise benefits that require increasing contributions; no representative for next generation**
- **Principle: Sustainable relationship between benefits and contributions**
- **Issue: Beneficiaries have sense of entitlement**
- **Principle: Honest communication, including extent of redistribution**

# Example of hybrid: Canada Pension Plan

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- **Based on liability-matching portfolio, “normal cost” is 10.1% of covered pay each year (estimates of Dec. 2003), with large unfunded liability, and increasing projected cost (“steady state” at 11.0%)**
- **“Expected cost” based on 60/40 portfolio is 5.5%, with increasing projected cost; “steady state” at 9.8%**
- **Approach: Charge 9.9% and invest in markets; if 60/40 “steady state” rate rises above this, change the plan’s terms, or else default benefit freeze and contribution increase**

# Longevity risk: Definition

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**The risk that an individual or group will live longer than expected, increasing the cost of sustaining spending or benefits**

# Longevity risk: Individual issues

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- **Issue: Self-financing is very expensive**
- **Issue: In many countries there's no lifetime income annuity market**

# Example of the cost of self-financing

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- **For my wife and me, a few years ago when real interest rates were 2.5%:**
  - **Joint and last survivor expectancy was 29 years**
  - **Cost of annuity of 1 p.a. was 20.4**
  - **5% of a similar cohort would still have at least one member alive after 41 years**
  - **Cost of 41-year annuity was 25.8: more than 25% higher, with only 95% chance of success**
- **At 0% real, the cost is more than 30% higher: the excess rises as real interest rates fall**

# Longevity risk: principles

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- **Issue: Self-financing is very expensive**
- **Principle: Most people will eventually need a lifetime income annuity**
- **Issue: In many countries there's no lifetime income annuity market**
- **Principle: Form a longevity pool**

# Well-known principles for a longevity pool

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- **Individuals buy into a voluntary association at “best estimate” annuity rates**
- **Each year the following year’s payments are adjusted to account for longevity experience**

Reference: A mutual fund to yield annuity-like benefits, by Ralph Goldsticker (Financial Analysts Journal, Vol. 63 No. 1, Jan-Feb 2007)

# Benefits of pooling longevity risk

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- **Individual uncertainty is absorbed into group longevity uncertainty: no need for expensive self-financing**
- **Hedging instruments for pools are less expensive than annuity purchases for individuals**

# Longevity risk: Pooled issues

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- **Issue: Three risks to be hedged**
  - Trend risk (fundamental forecast is wrong)
  - Model risk (group's longevity doesn't match standard table used – also called “basis risk”)
  - Random variation (year to year fluctuations)
- **Issue: Although no expected systematic reward for taking risk, there's “money's worth” cost versus risk of self-insurance**

# Principle: Longevity swaps are available (in the UK)

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- **Group pays standard table projections (“fixed leg”), counterparty pays actual amounts (“floating leg”)**
- **Market (started in 2007) is several billions of pounds a year, but no ISDA standards, hence complex to arrange**
- **Counterparty risk: no government yet willing to underwrite via longevity bonds**

# Principle: “Money’s worth” calculations

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- **Definition: the ratio of the pure single premium to what is actually charged**
- **In the UK, for traditional annuities it has been about 90+% (but only 75% for index-linked annuities)**
- **USA and Netherlands 90-100%**

References: USA: New evidence on the money's worth of individual annuities, by Olivia S. Mitchell et al, American Economic Review, Vol. 89(5), Dec. 1999;  
UK and Netherlands: Annuity markets: welfare, money's worth and policy implications, by Edmund Cannon and Ian Tonks (Netspar Panel Paper No. 24, June 2011)

# Market risk: Definition

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**The risk that the value of a portfolio will decrease because of factors that are new and negative or are assessed differently in valuing assets. And consequently the resources available to finance retirement income fall**

# Market risk: Individual issues

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- **Issue: Most people are not financially literate, let alone investment experts**
  - They have no idea how much to save, to achieve their goals, nor of the risk required to achieve the required return
  - They don't understand investing and fear it; risk aversion is made worse by fear
- **Issue: Reports to participants stress market volatility, aggravating a bad situation**

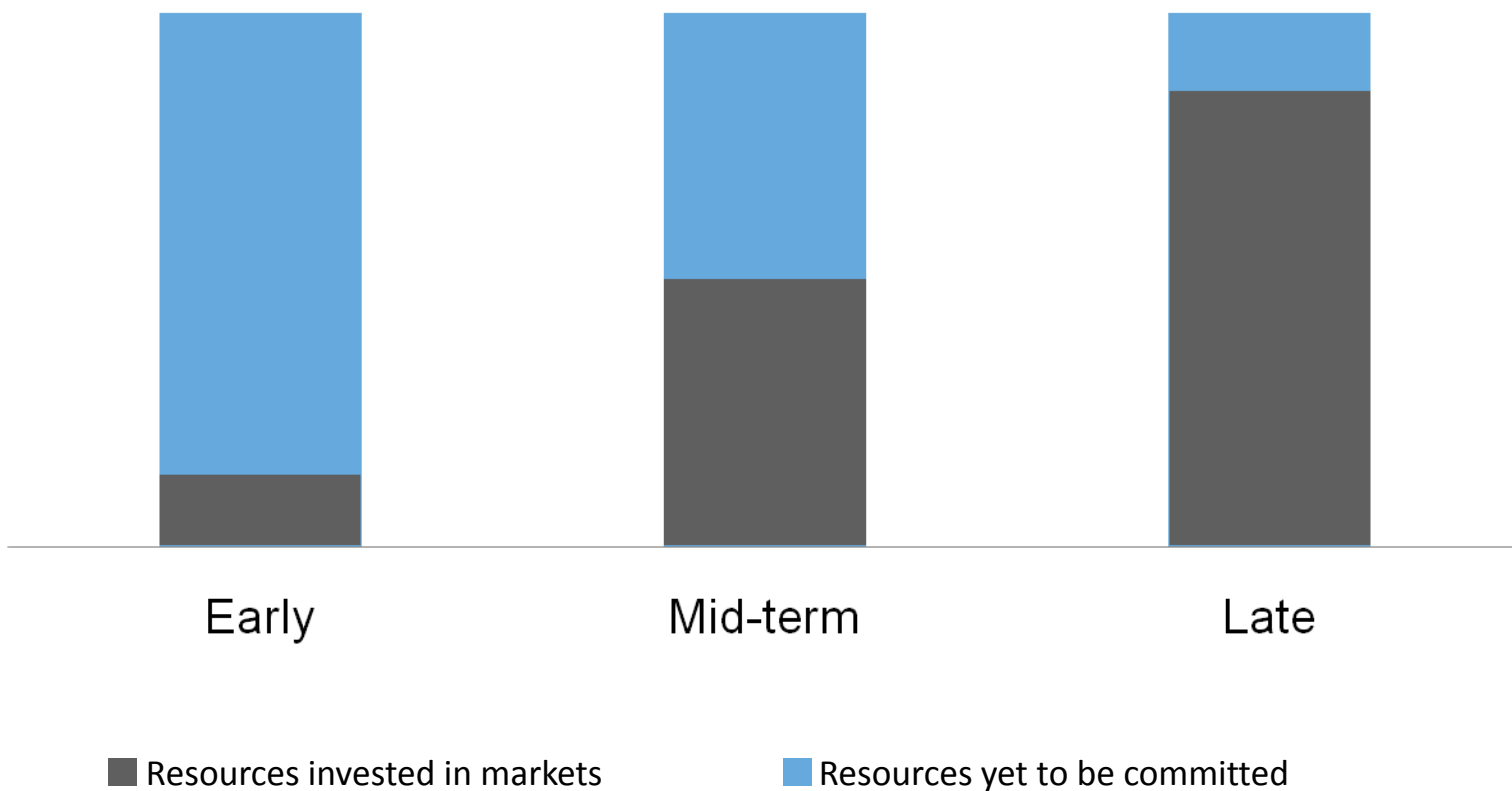
# Principle to mitigate lack of expertise

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- **Financial literacy needs to start at a young age**
- **Build investment expertise into default options**
- **Yet to come:**
  - **Customised glide paths**
  - **Mid-course corrections to glide paths**

# The lifecycle model is fundamental, for glide paths and for reporting

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# Principle: Report in a way that is consistent with glide path design

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## Today's report:

- Value of resources invested in market
- Current asset allocation
- Recent investment returns

## Tomorrow's report:

- Values of resources invested and yet to be committed
- Projected expected retirement income from each of: pre-annuitised wealth, resources invested and resources yet to be committed
- Downside projections of income
- Current asset allocation, and explanation of why different from original plan
- Recent investment returns

# Benefits of pooling market risk

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- **The individual's date of retirement no longer has the same huge significance**
  - A longer-term horizon is feasible
  - Capturing an illiquidity premium becomes feasible
- **Losses on some individuals are potentially offset by gains on others**
  - Aggregate risk tolerance is raised

# Market risk: Pooled issues

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**Issue: Promised benefits require risk to be taken, but there is rarely advance capital provision for that risk**

- **Moreover, uncertainty (model and parameter error) goes beyond stochastic risk**

# Principle: Advance provision of risk capital for defined benefits

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- **Only the Netherlands requires an explicit reserve for DB**
  - **In other countries the sponsor's promise is implicitly deemed to be enough**
    - **Experience suggests this is not a wise stance: the solvency of the sponsor can't be taken for granted**
- **Catch-up contributions for underfunded benefits aren't enough**
  - **Over-promise and under-deliver, rather than the Netherlands' under-promise and over-deliver**
- **Irony: the Netherlands often seems to think it has failed, because it is short of perfection**
  - **Any system that *always* has adequate reserves penalises the generation that has to build up those reserves to ensure that the next generation has no risk**

# Example of hybrid: Dutch collective DC schemes

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- **Contributions are truly fixed**
- **Unit benefits are defined as if DB were in operation, including capital reserves for risk**
- **But if reserves are inadequate, the benefit can be cut**
- **Most of the time, it just runs like DB, with the attendant advantages**
- **In (recent) extreme markets, beneficiaries are appalled to learn that it's really not DB**
  - **Communication failure, important enough to lead to re-thinking of principles**

# Summing up .....

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- **Three kinds of risk: political, longevity, market**
- **Risk pooling has beneficial social and financial consequences**
- **Understanding and honesty in facing, dealing with and communicating about risks are keys to better and more informed (more acceptable?) outcomes**