Considerations in Pension Regulatory Frameworks to Encourage Innovative Longevity Solutions

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Hans Wagner, FSA
Chief Actuary and Chief Risk Officer, ICBC-AXA Life

The views and opinions expressed in this presentation are the personal ones of the speaker, and do not represent official positions of his employer or its shareholders.

Wait, this is a Pensions Conference, what is this image doing here?

Encouraging Longevity Market Innovation is like Fostering Good Farming

- Prepare the field by clearing stones, building terraces, etc.
- Ensure access to a fair trading market
- Don’t make the farmer do something they can’t
- Align timeframes; some plants take years to mature and be productive
- Have high quality inputs (seeds, pest control, etc.)

Prepare the Field:
Education/motivation of general population is crucial

- Human nature values short-horizon rewards over longer-horizon larger rewards , far above the economic time value of money
  - Perception of risks accordingly distorted
- All segments need to cooperate to improve consumer education
- Farmers are more attracted to a field that has been well prepared for planting than a stony or forested field; longevity solution providers are the same!

- The following three slides are from Arun Abey at the CIRC China Life Insurance Workshop on Innovation and Risk Management, 2009

the calculative approach

If you save the following percentage of your salary …	*You could expect to accumulate the following amount by age 65*
0%	£0
4%	£125,000
6%	£200,000
10%	£295,000
11%	£350,000
12%	£365,000
15%	£475,000
16%	£499,000
18%	£545,000
19%	£595,000
26%	£795,000
28%	£875,000
31%	£950,000
41%	£1,250,000

Sources: Benartzi et al, in progress

the intuitive approach

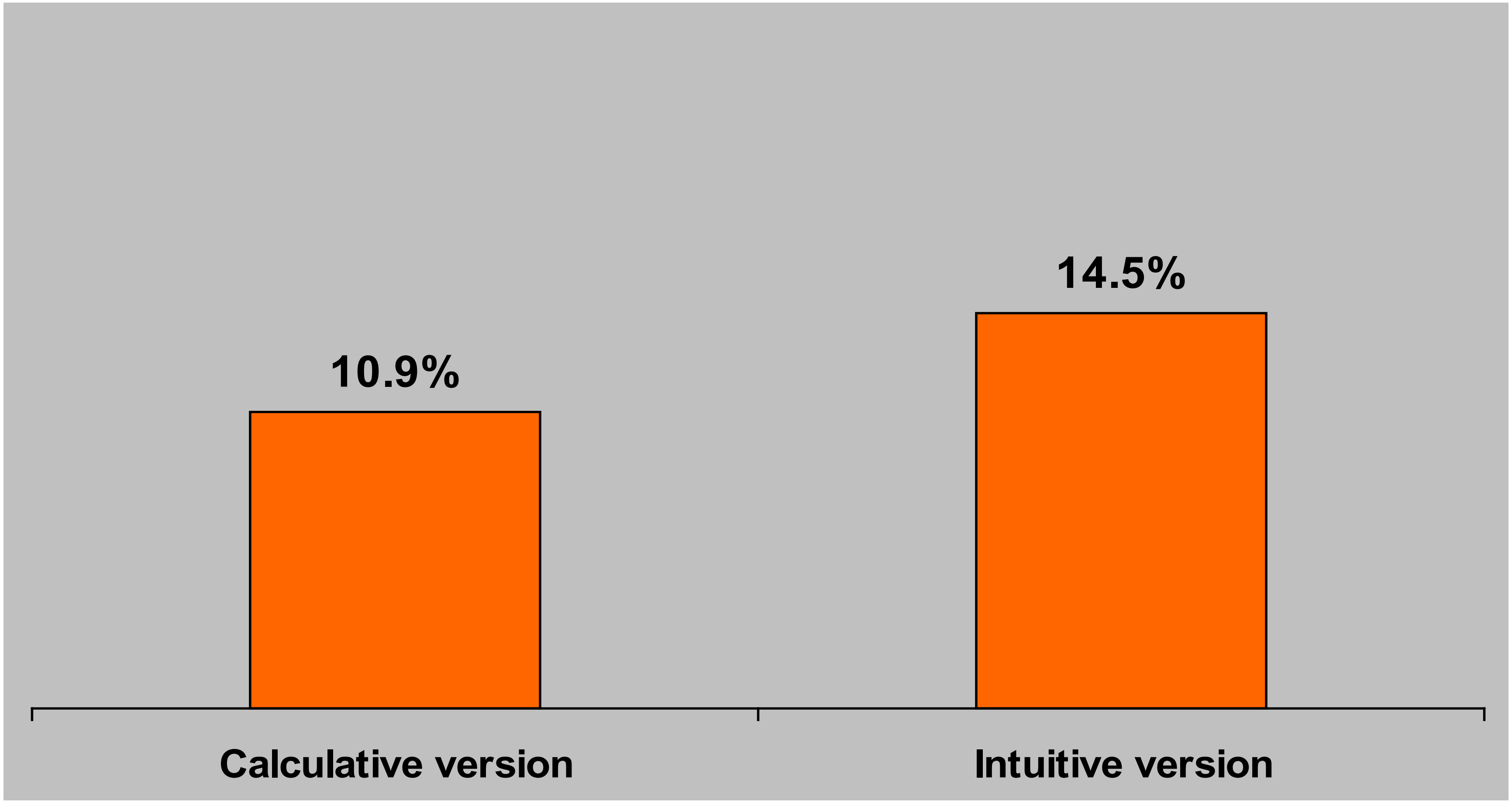
CROMWELL ROAD, LONDON, SW5
1 Bedroom, 1 Reception, 1 Bathroom. This lower ground floor apartment consists of a living room with wood flooring, an open plan kitchen and one bedroom. Wood floors and quality fixtures.

PENYWERN ROAD, LONDON, SW5
Studio. Newly refurbished studio apartment. A refurbished studio apartment consisting of a studio room with storage space, a fitted kitchen and a bathroom with shower room.

If you do not save for retirement, you might end up living on the street.

Sources: Benartzi et al, in progress

results: average saving rates



Sources: Benartzi et al, in progress

Develop a Fair Market with a Level Playing Field

- Market distortions can prevent the smooth transfer of risks from one party to another, discouraging some participants
- Liability valuation, reported profit impacts, and capital requirements might vary between employers, insurers, pensions funds, or other parties
  - Variations can come in discount rates, current mortality assumptions, mortality trend assumptions, provisions for risk asset valuation, profit recognition
- An entity with favorable rules will have difficulty transferring risks to one with unfavorable rules

Develop a Level Playing Field- Examples

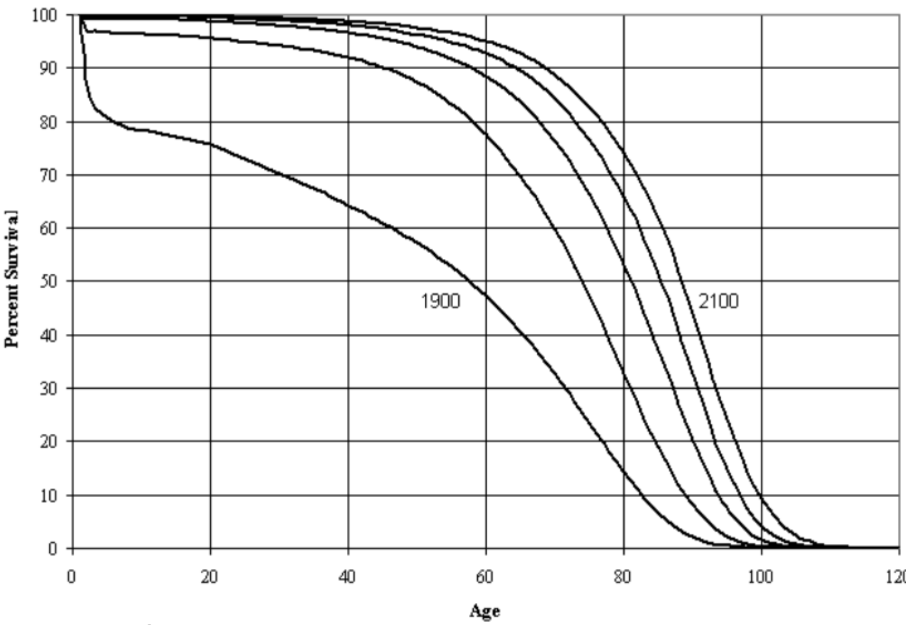
- Employer sponsors of employee pension plans must fund liabilities, but not hold additional capital to provide extra security
  - The cost of capital for external providers is a friction for transfers
  - Possible solutions: a) require employers to hold capital also, b) require employers to contribute to a guarantee fund. Would these discourage plan offers?
  - Solvency/security of external providers is of course important, but all parts of system should have equivalent contributions to social stability
- Beyond the capital issue, liability calculations for sponsors often are more generous than for insurers, allowing more aggressive mortality assumptions and/or discount rates
- Capital formulas focused on one risk or based on averages can cause distortions from true economics
  - For example if age, gender, or health status for a given group is different; a standardized shock for longevity blending current mortality volatility and trend volatility could distort results for accumulation period younger lives vs payout period older lives

Don’t Grow Oranges on a Rice Terrace:

ICBC 工银安盛人寿 ICBC-AXA LIFE AXA

Recognize the Limitations of Private Insurance

- Insurers are perfectly suited to pool the risks of individuals within a group that in aggregate has known risks
- Insurers are less suited to provide protection against large shocks to the whole population. Life-span extension could be one such risk
- Alignment of solvency requirements with investor returns and customer willingness is necessary to develop a market



- Insurers capitalize to a given risk level, therefore some extreme but plausible risks will be beyond that capacity. The impact of a major meteorite strike is a clear example, but extreme lifespan improvement is another
- Pooling of risks between insurers and broader capital markets should be encouraged, with adequate transparency on instruments such as longevity bonds. Regulations should support sponsor solutions in-between “Defined Benefit” and “Defined Contribution”, with adequate disclosures/education.
- System goals need to be clear; customer liquidity comes a cost when associated with a long liability

Align Time Horizon with the Crop: Enable Long-term Investment Strategies

- Pensions, especially if considered in the accumulation phase, are extremely long liabilities
  - A 50-year maturity Chinese government bond has effective duration about 18. A deferred pension product has duration about 20!
  - Government bond yields are also too low for insurers to provide an attractive product
  - Governments also often want pension funds invested to help the real economy
- If product is fully guaranteed, capital costs are extremely high both from mortality risks (current level and trend) and investment risks
  - Investors need a high enough return, purchases need a low enough price
  - Innovative sharing of risks with plan participants could help, with appropriate education
- Capital rules need to balance the various goals, not forcing capital levels so high that the market is discouraged, while ensuring that the overall system (including ultimate government support) is stable

Have Good Quality Inputs: Provide Quality Longevity Data

- Data is the critical ingredient to develop new longevity protection products, including opening up broader capital markets beyond traditional insurance
- Long-term financial protection depends fundamentally on models, and models need data
- Examples:
  - **Life and Longevity Markets Association** publishes index data for encouraging market development across 4 countries/areas
  - The **Human Mortality Database (HMD)** is collaborating with **AXA** and the **AXA Research Fund** to build robust databases for Hong Kong and Mexico, expanding their current 40 countries/areas
  - **HMD** also has a strong partnership with the **Society of Actuaries**, with several projects completed and under consideration
- Government agencies can help in these efforts

Key Messages

- **Prepare the field**: Education/motivation of the general population is crucial
- **Have a fair market**: Develop a level playing field for all pension providers
- **Let the farmer grow what works**: Recognize insurers can not cover all risks; facilitate capital market support and participant risk-sharing
- **Recognize different timeframes**: Enable appropriate long-term investment strategies; don't demand too much capital
- **Get the best ingredients**: Help provide high-quality longevity data

Thank you!　谢谢!

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