Annuity Provider Capital and Solvency II

4th Contractual Savings Conference: Supervisory and Regulatory Issues in Private Pensions and Life Insurance
World Bank, Washington D.C.

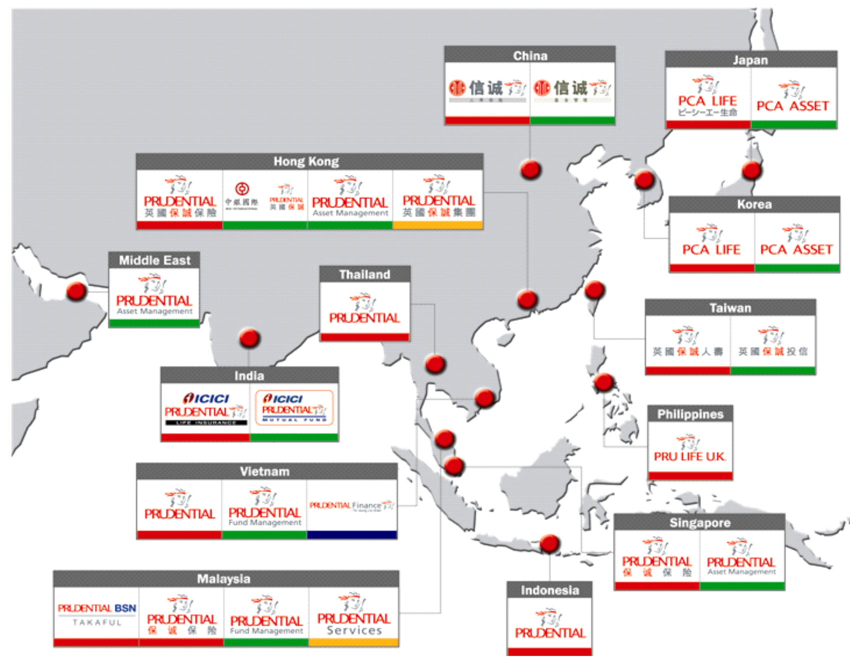
Philip Long

4 April 2008

Prudential plc

	Insurance	Asset Management
Asia	PRUDENTIAL 英国保诚集团	PRUDENTIAL Asset Management
US	JACKSON NATIONAL LIFE INSURANCE COMPANY	PPMAMERICA
UK	PRUDENTIAL	M&G INVESTMENTS

Of which Asia…(and Middle East)



- Insurance
- Fund management
- Consumer finance
- Regional

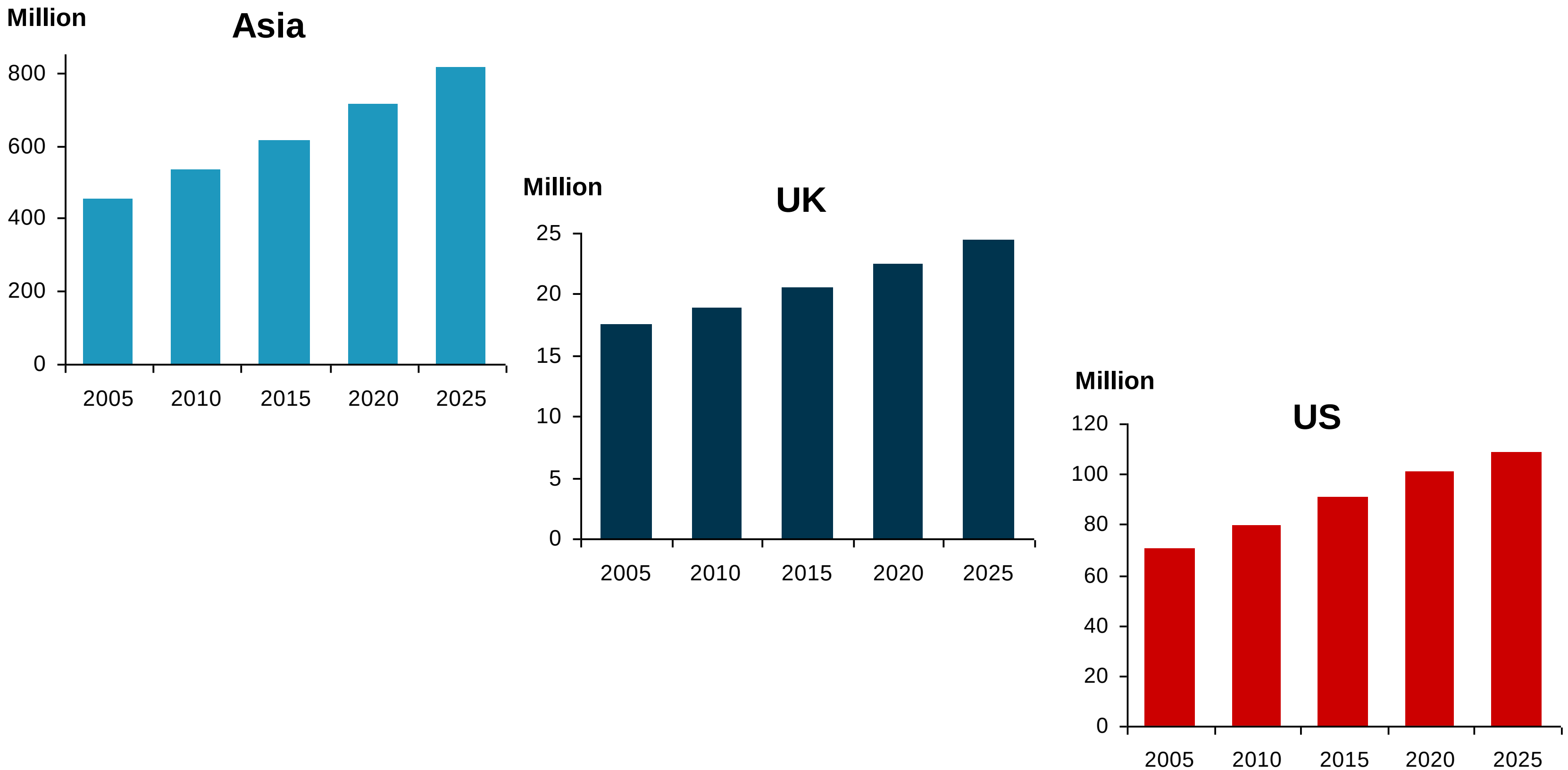
- Last year Prudential made $4.2 billion of payments on 1.5 million annuity policies in the UK

Agenda

- The retirement time bomb
- An objective and transparent approach to valuation and capital
- Developing annuity markets – how to make it work

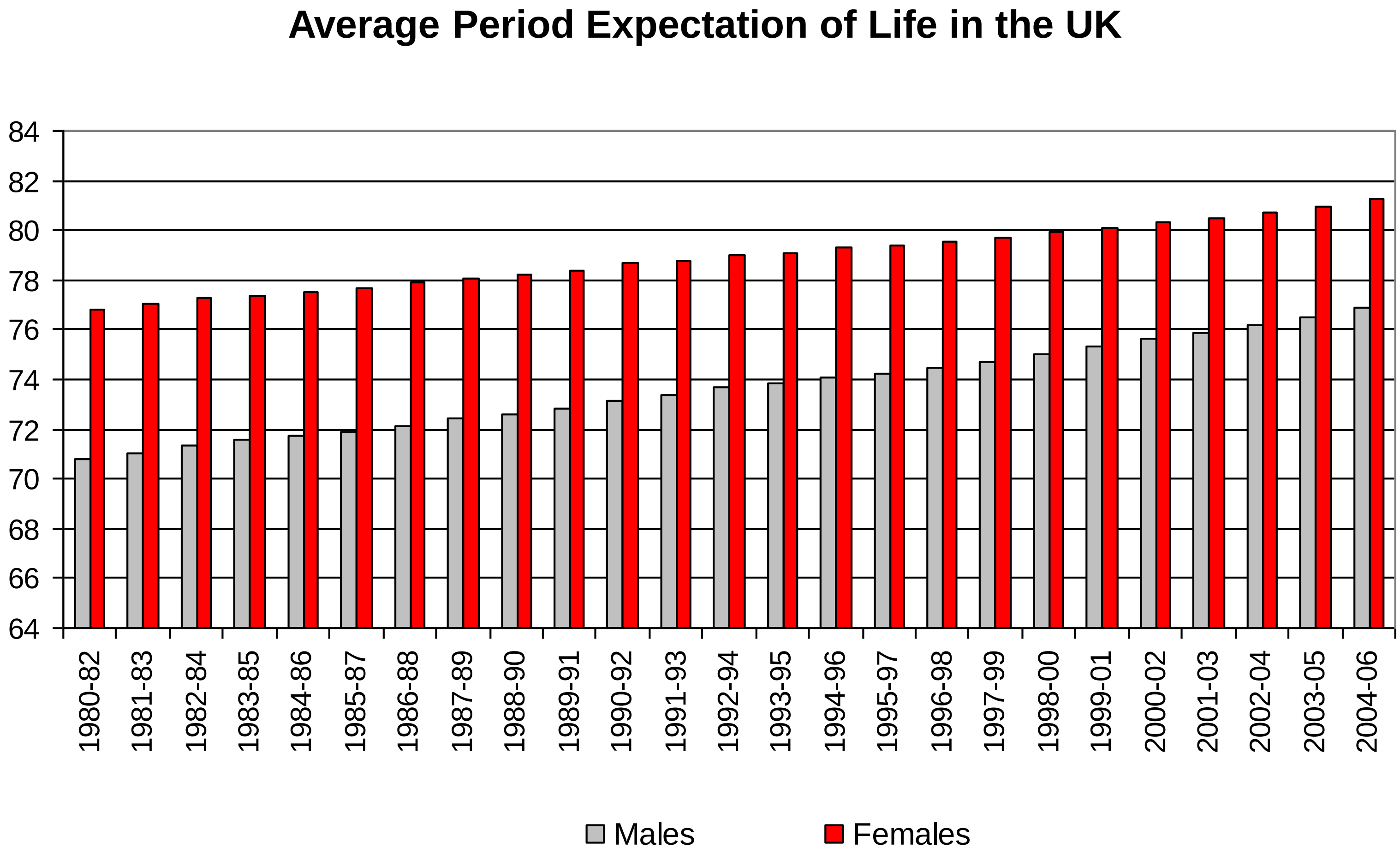
Ageing populations…

Projection of population aged 55+



Source: Population projection: Global Demographics July 2007, Asia population data - estimates for Prudential's 12 markets

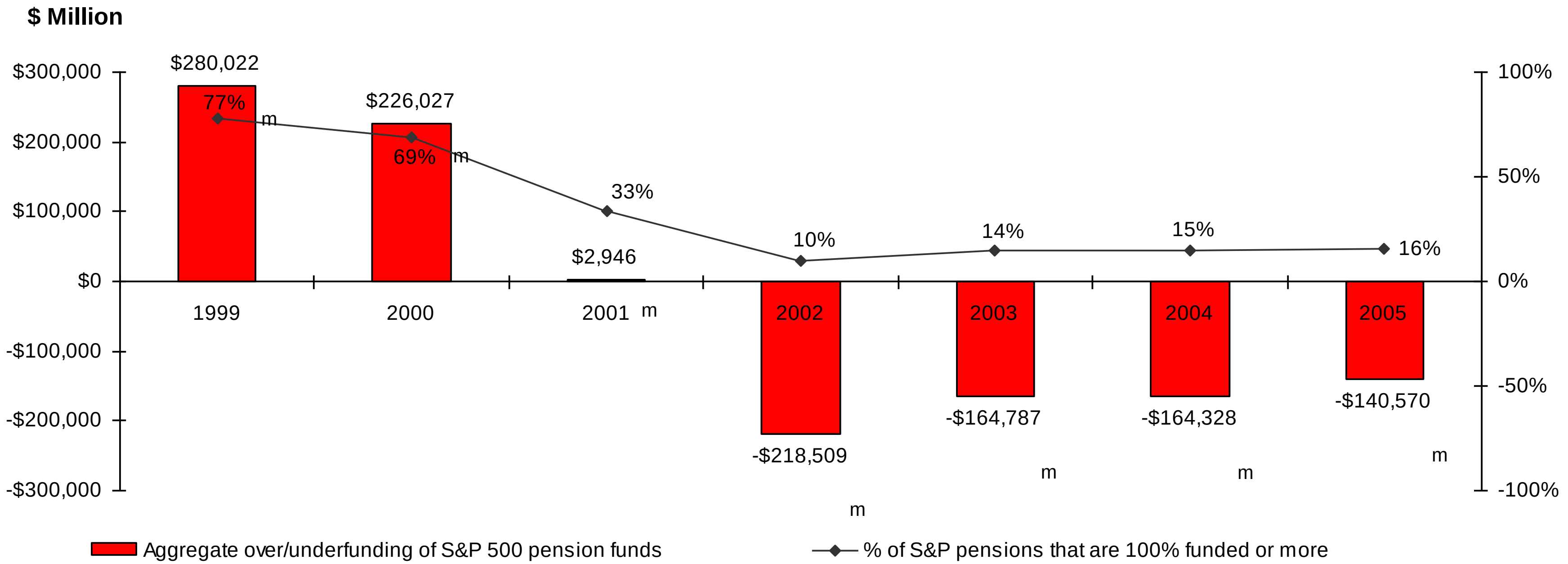
Increasing life expectancy…



Source: Interim Life Tables UK, Office for National Statistics.

Underfunding of company-sponsored pensions schemes…

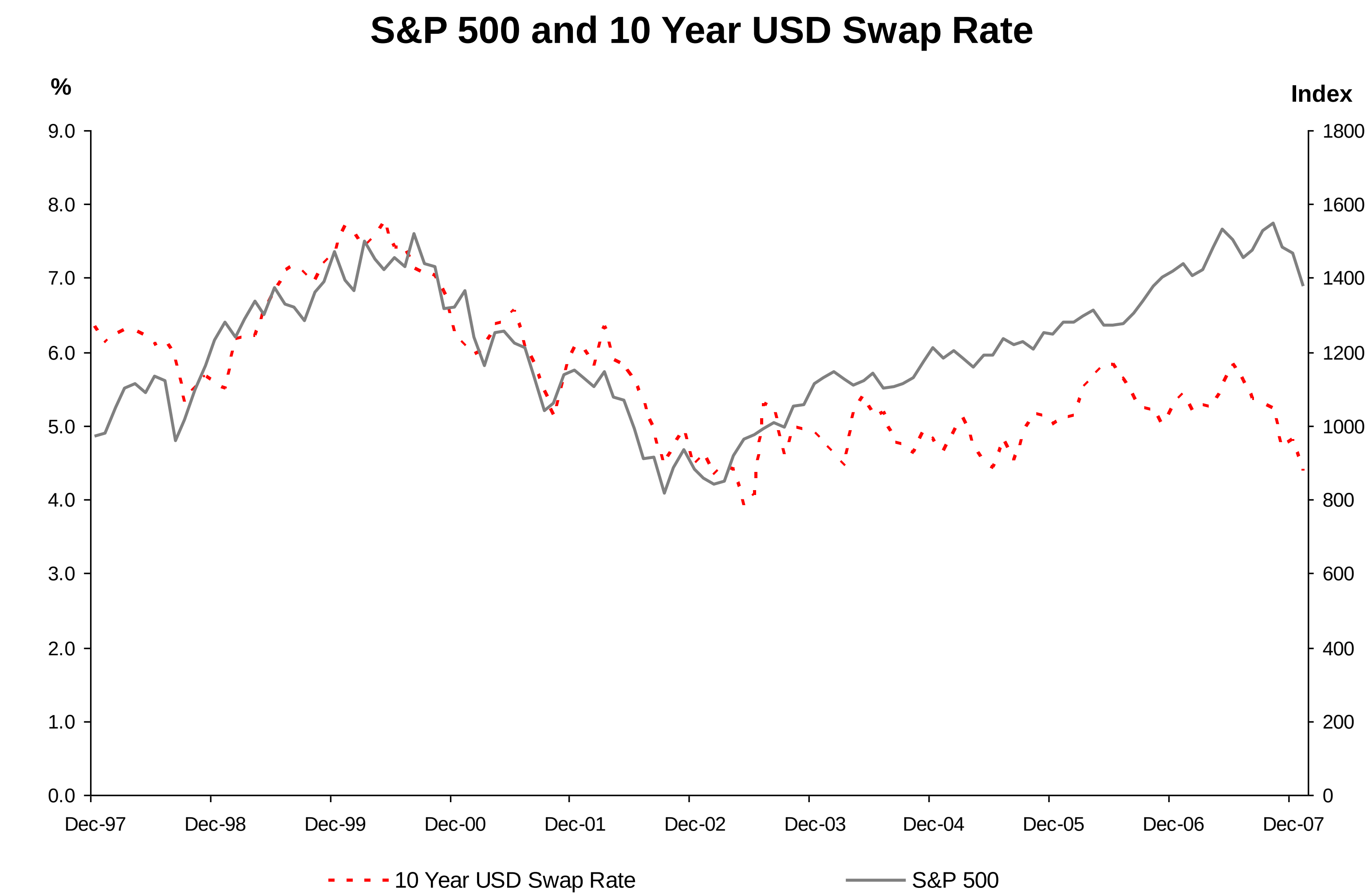
Aggregate funding of S&P 500 Defined Benefit Pension Schemes 1999-2005



Sources: S&P 500, Cerulli Associates

….AND PRESSURE ON GOVERNMENT-SPONSORED PAY-AS-YOU-GO SCHEMES

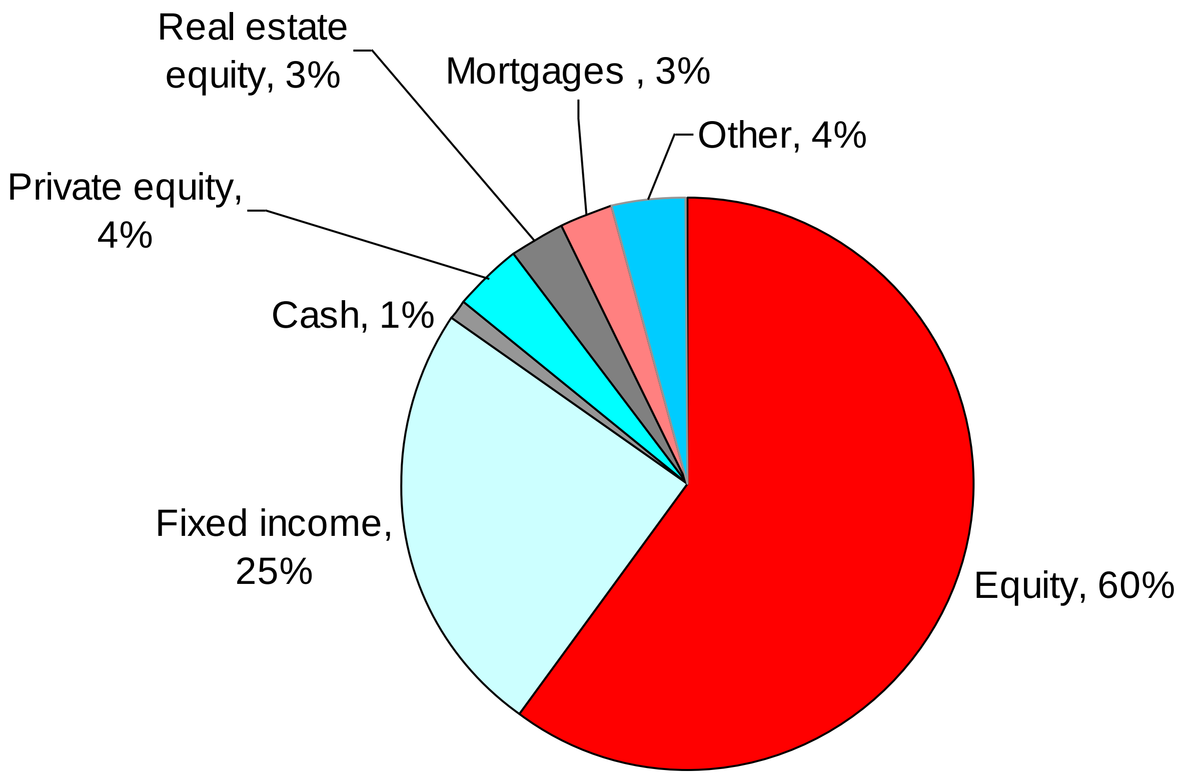
Positive correlation between equities and interest rates…



Source: Bloomberg

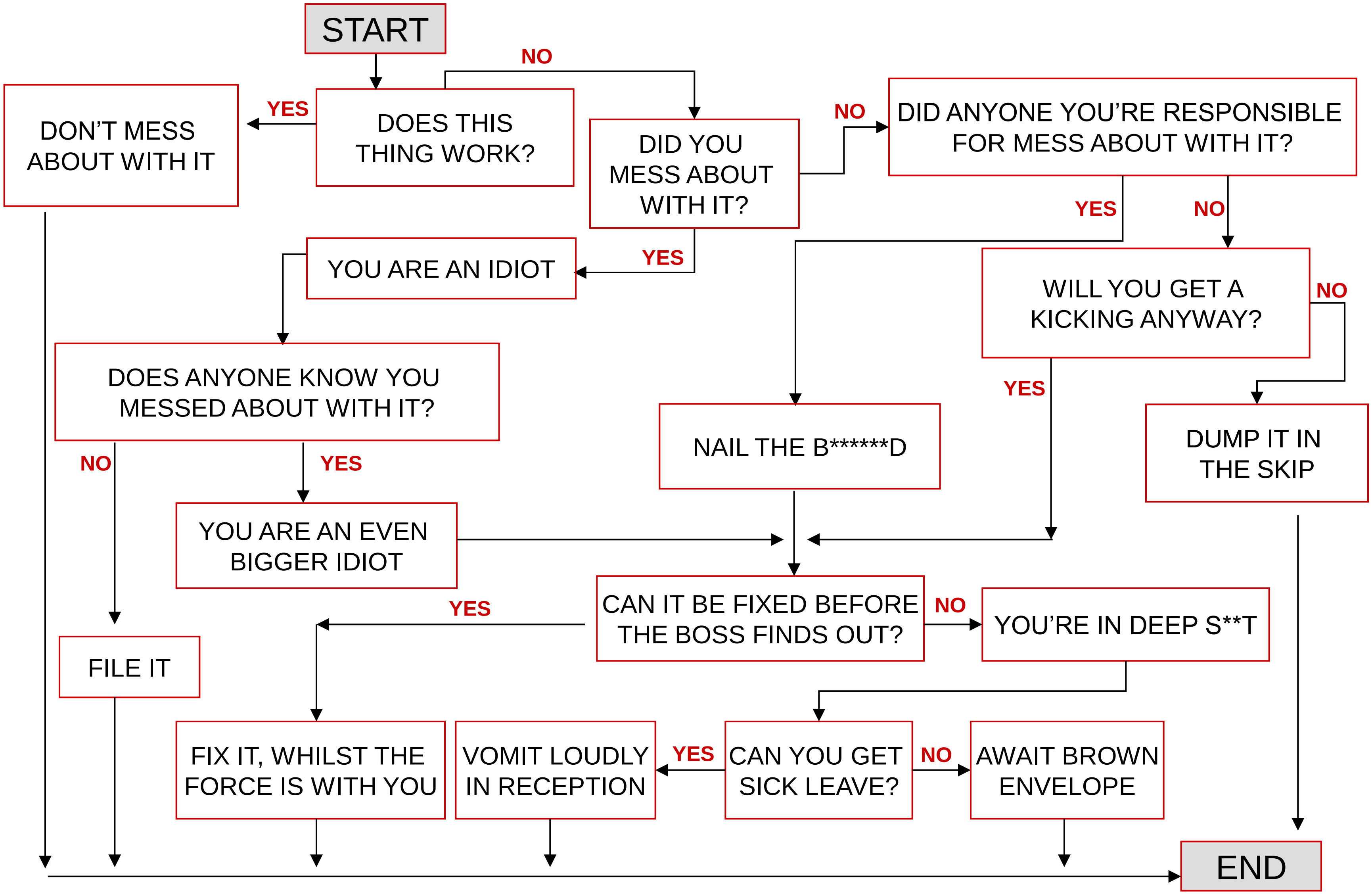
But greater risk taking with asset-liability mismatch "bets"..

Private Defined Benefit Pension Schemes Asset Allocation 2005



Sources: Pensions and Investments, Cerulli Associates

One approach for decision-making and allocating responsibility…

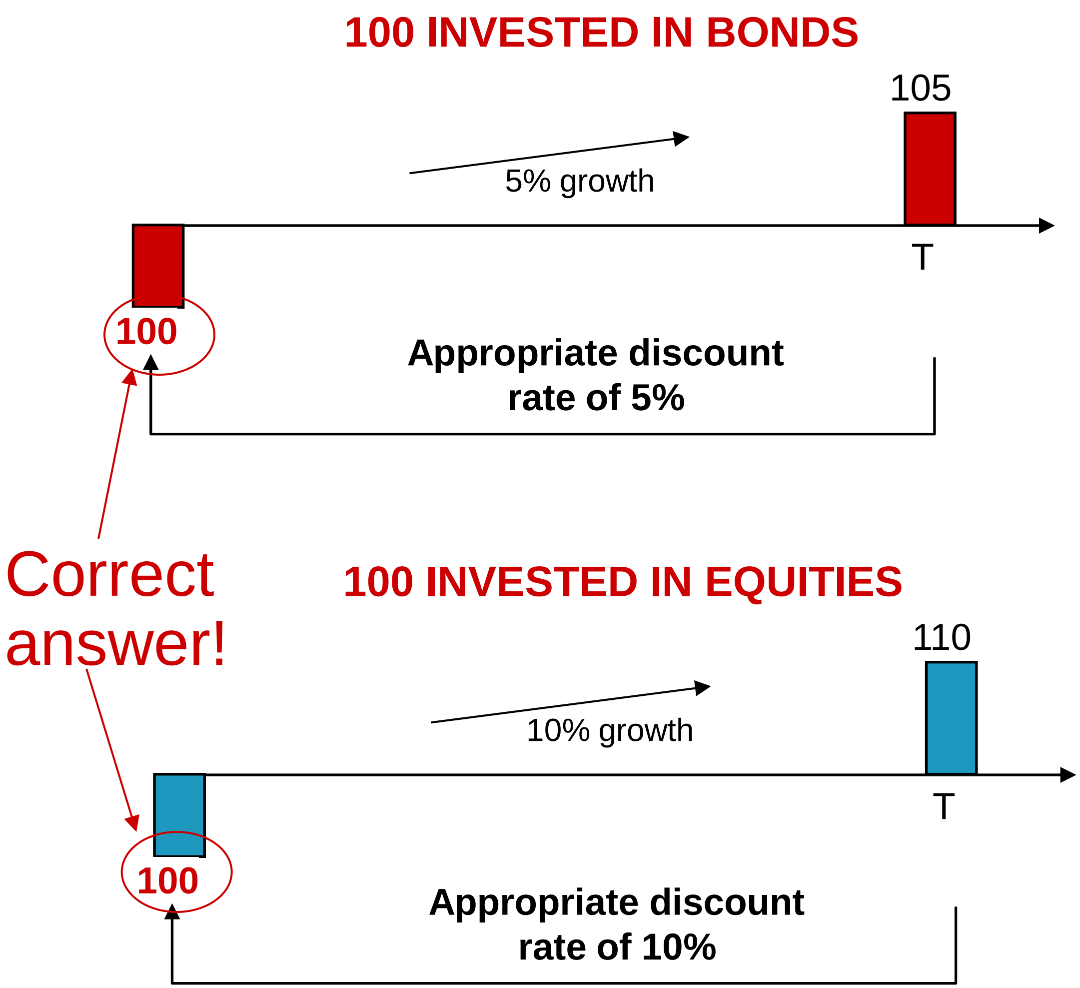


A better approach: framework based on transparency and objectivity

JUDGEMENT, OBJECTIVE ANALYSIS AND TRANSPARENT MODELLING

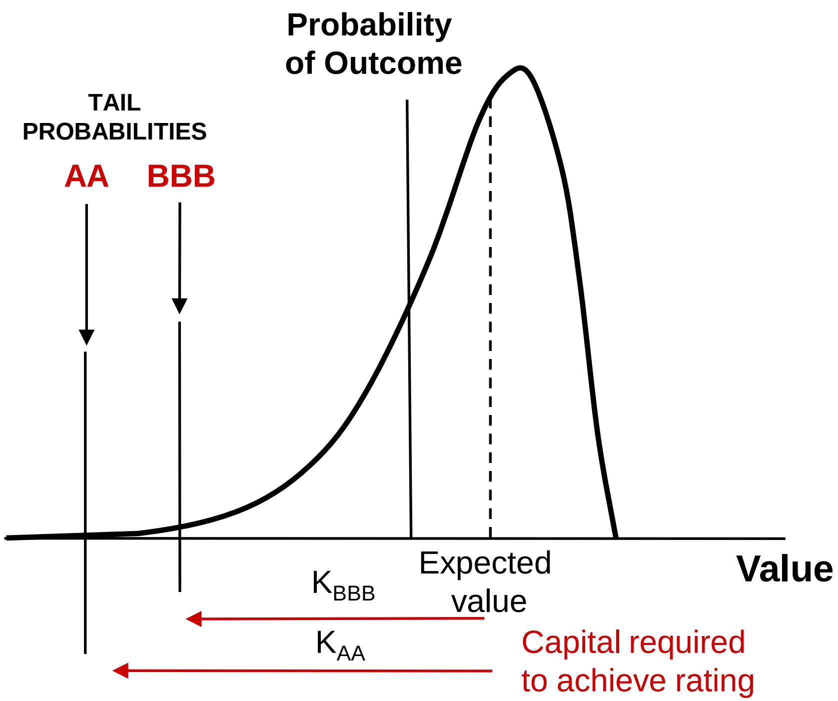
BLACK BOX: "JUST TRUST ME, I'M CLEVER"

Market-consistent valuations take no credit upfront for investment returns not yet earned



Value at Risk (VaR) economic capital for 1 year time horizon is held

Value distribution



- Using internal models or standard models
- Solvency II standard set at 99.5% VaR ~ BBB

RISKS REQUIRING CAPITAL

NON-MARKET RISKS

Non-hedgeable

- **Mortality** level, trend and cat
- **Longevity** level, trend and discovery
- **Morbidity** level and trend
- **Persistency** (level shocks or changes to dynamic lapse curve)
- **Unit expense** increases

Hedgeable

- Relatively uncommon

MARKET RISKS

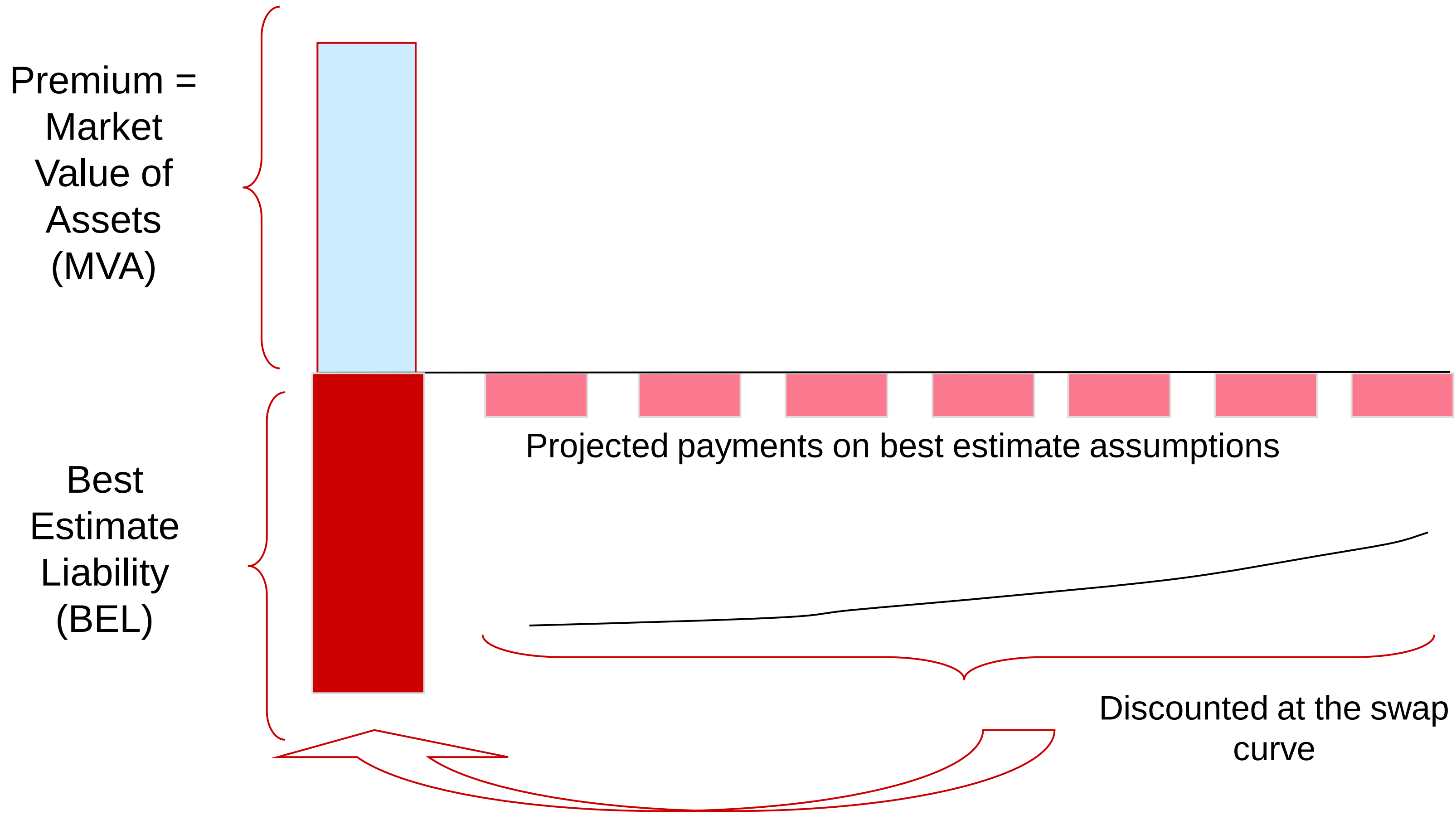
Non-hedgeable

- **Unhedgeable interest rate risk** (shocks to long end of curve)

Hedgeable

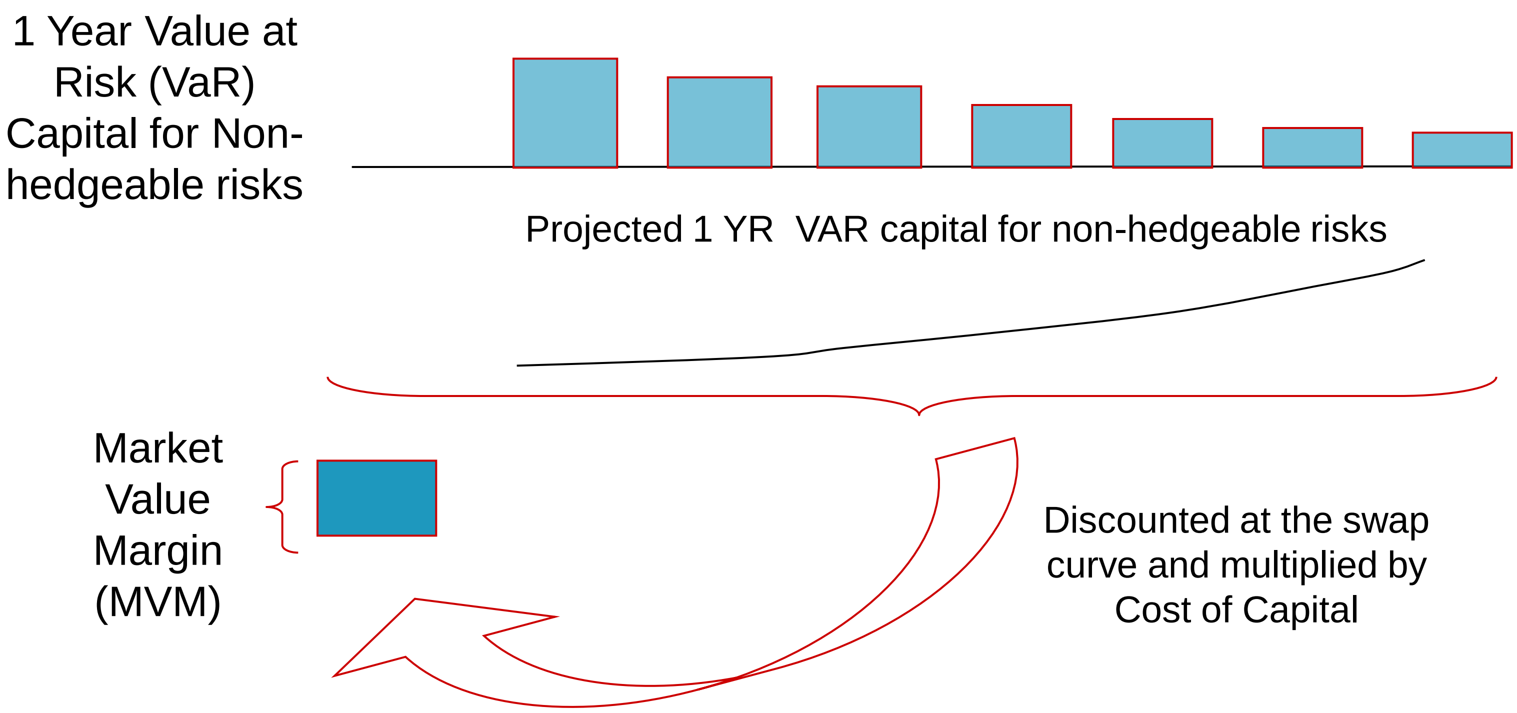
- **Equity** or **property** values
- **Credit** risk
- **Market-related policyholder behaviour**

Market-consistent valuation for immediate annuity cashflows… similar to valuing a bond!



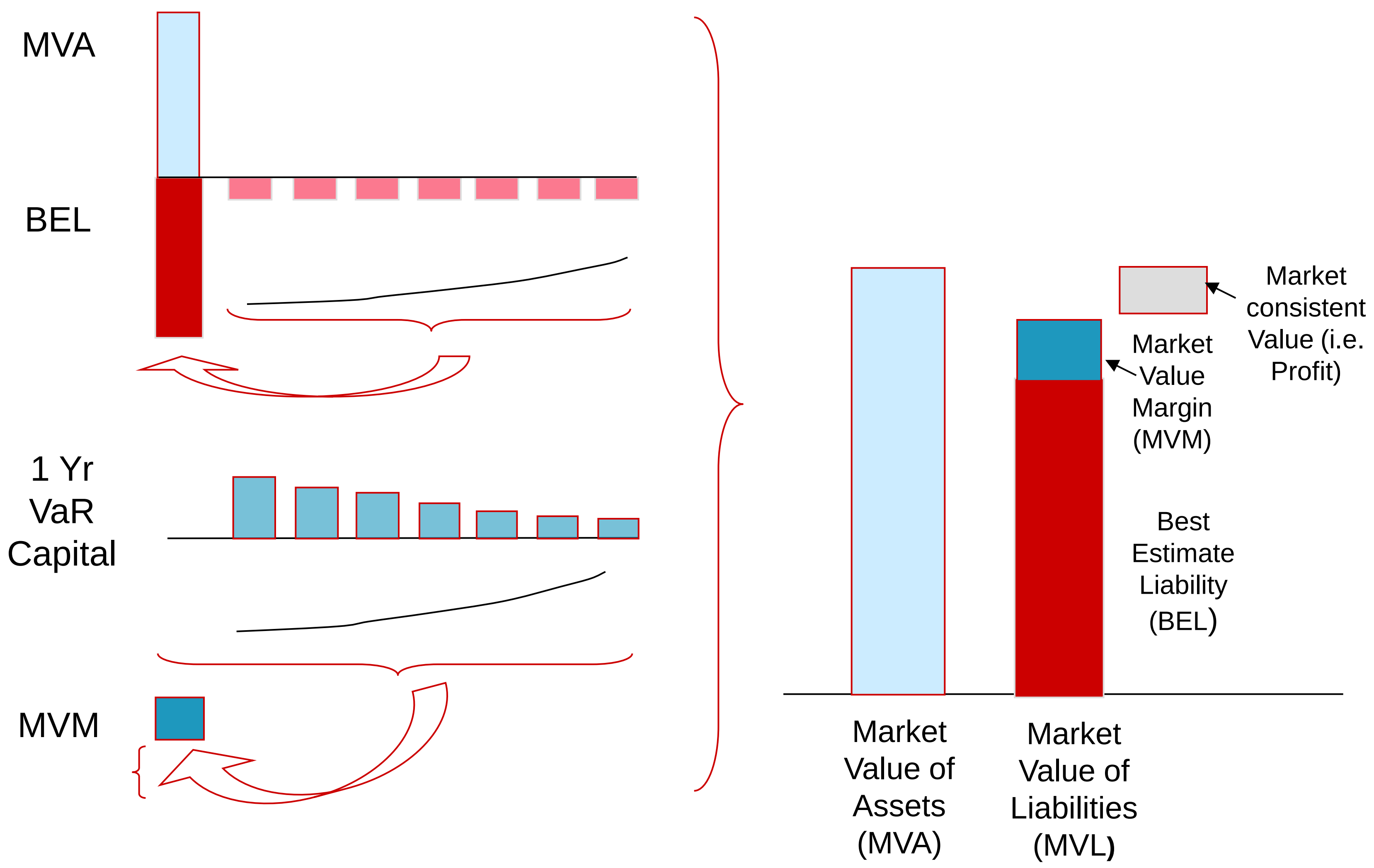
OPTIONS AND GUARANTEES EXPLICITLY MODELLED (E.G. USING STOCHASTIC MODELS) WHERE THEY EXIST

Market-consistent cost of VaR capital requirements: market value margin

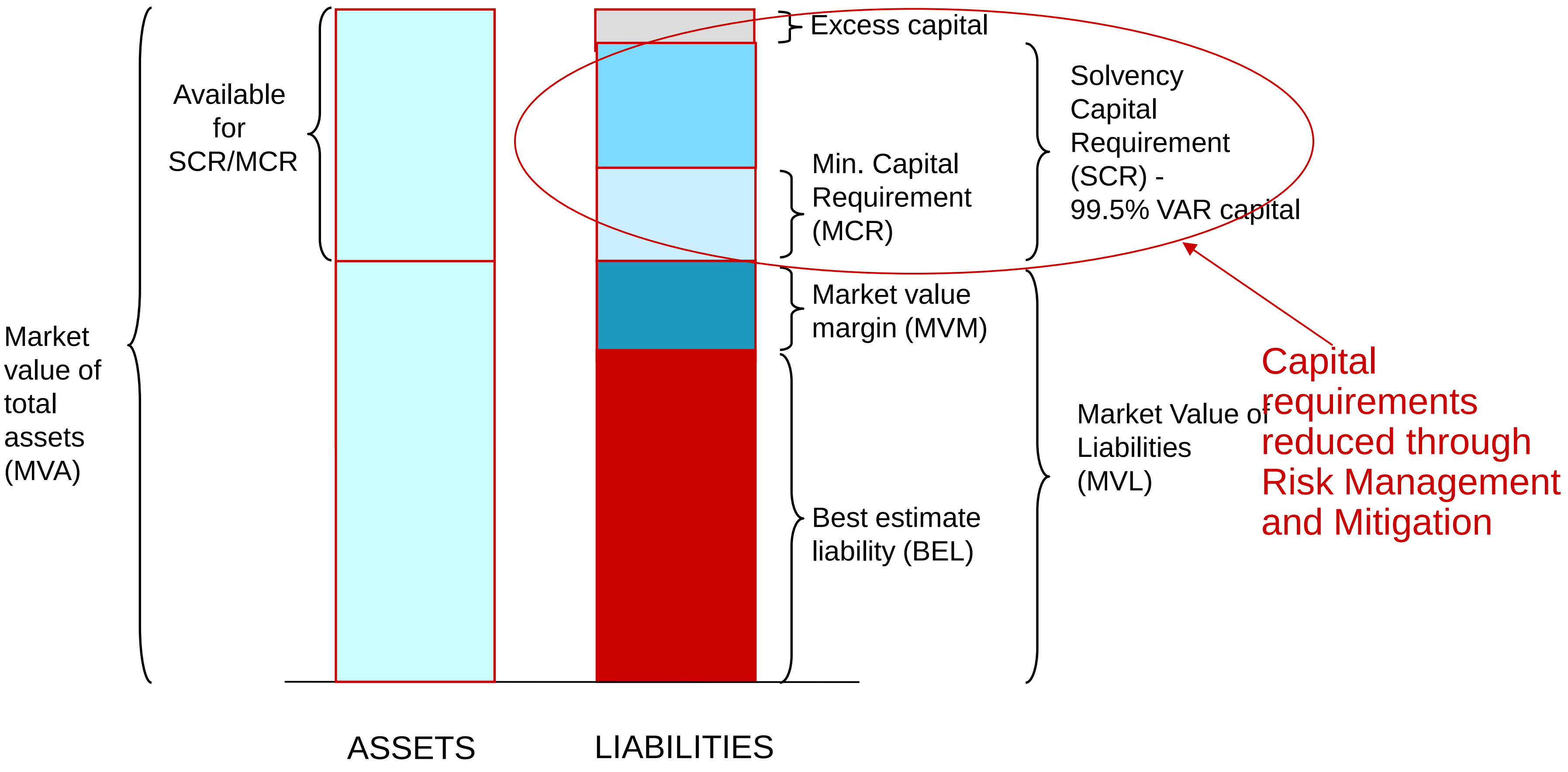


- NO OTHER "PRUDENT MARGINS" IN THE LIABILITY, AS THIS IS THE ROLE OF CAPITAL

The market-consistent value of an immediate annuity – assets, liability and profit



The market-consistent balance sheet



Source: CEA and CRO Forum joint submission: "Solutions to 5 Major Issues for Solvency II"

Solvency II proposals

Pillar 1	Pillar 2	Pillar 3
Valuations and capital requirements	**Supervisory review process**	**Market Discipline and disclosure**
Harmonised standards for the valuation of assets and liabilities and the calculation of capital requirements	To help ensure institutions have good processes to monitor and manage risks and have adequate capital	Requirements to allow capital adequacy to be compared across institutions

PRINCIPLES

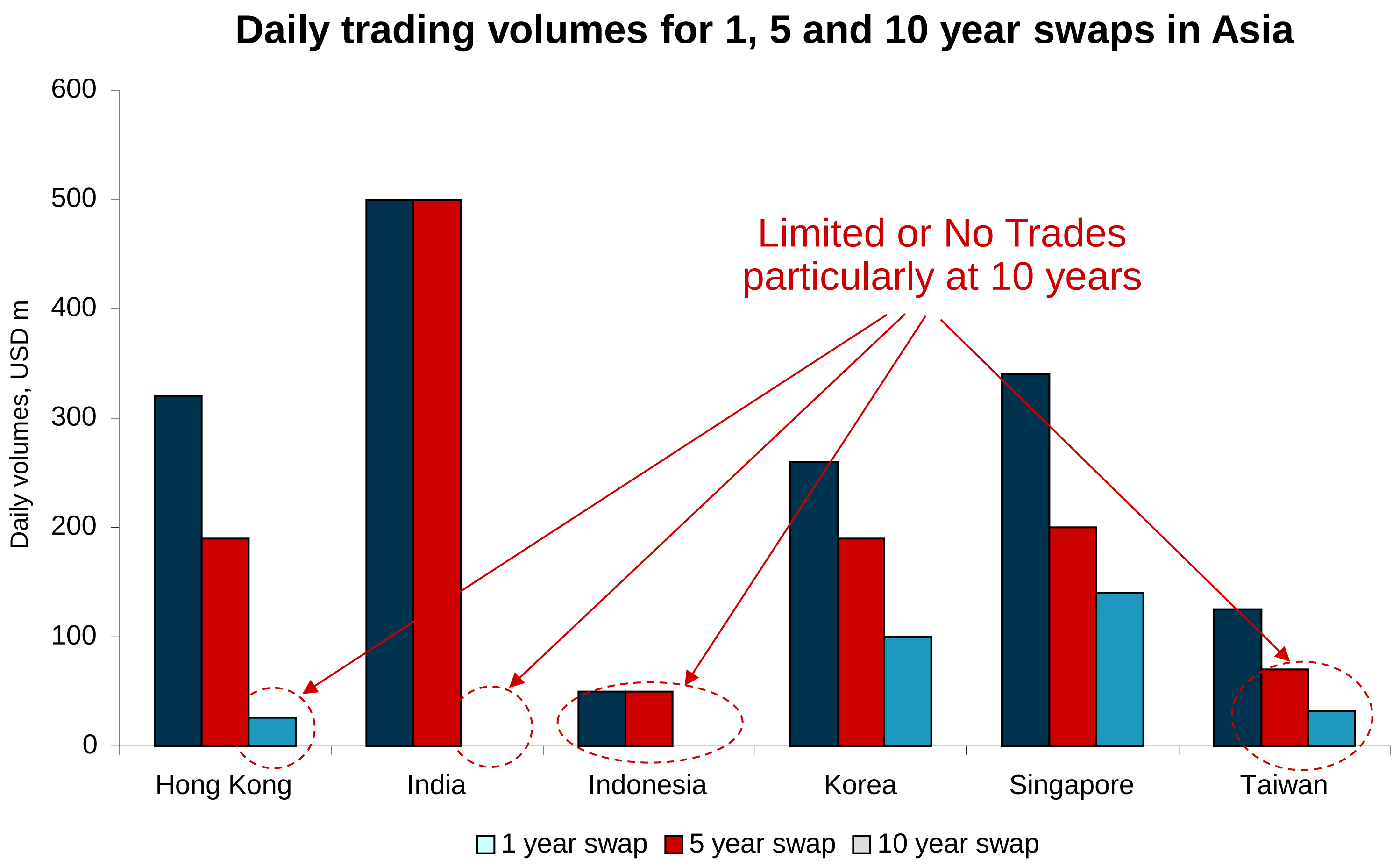
- Market consistent treatment of assets and liabilities (incl. embedded options)
- Risk-based capital requirements, including allowance for diversification (99.5% VaR over 1 year horizon)
- Reliance on internal models and risk management
- Ladder of supervisory intervention – MCR/SCR,
- Economic treatment of groups – group test, group support, diversification and capital mobility

Policymakers and regulators need to help make it work

- Solvency II principles a good starting point ✓
- Regulators must have the necessary skills… and pay ✓
- National collection of data to build credible life mortality tables ✓
- Compulsory annuitisation to avoid moral hazard and introduce scale of provision ✓

- Resist (natural) tendency to gravitate to more and more regulatory rules ✗
- Resist arbitrary, non-economic regulatory add-ons or restrictions that can result in perverse incentives ✗
- Resist diluting regulatory intervention and enforcement powers and "too-big to fail mentality" that encourages moral hazard ✗

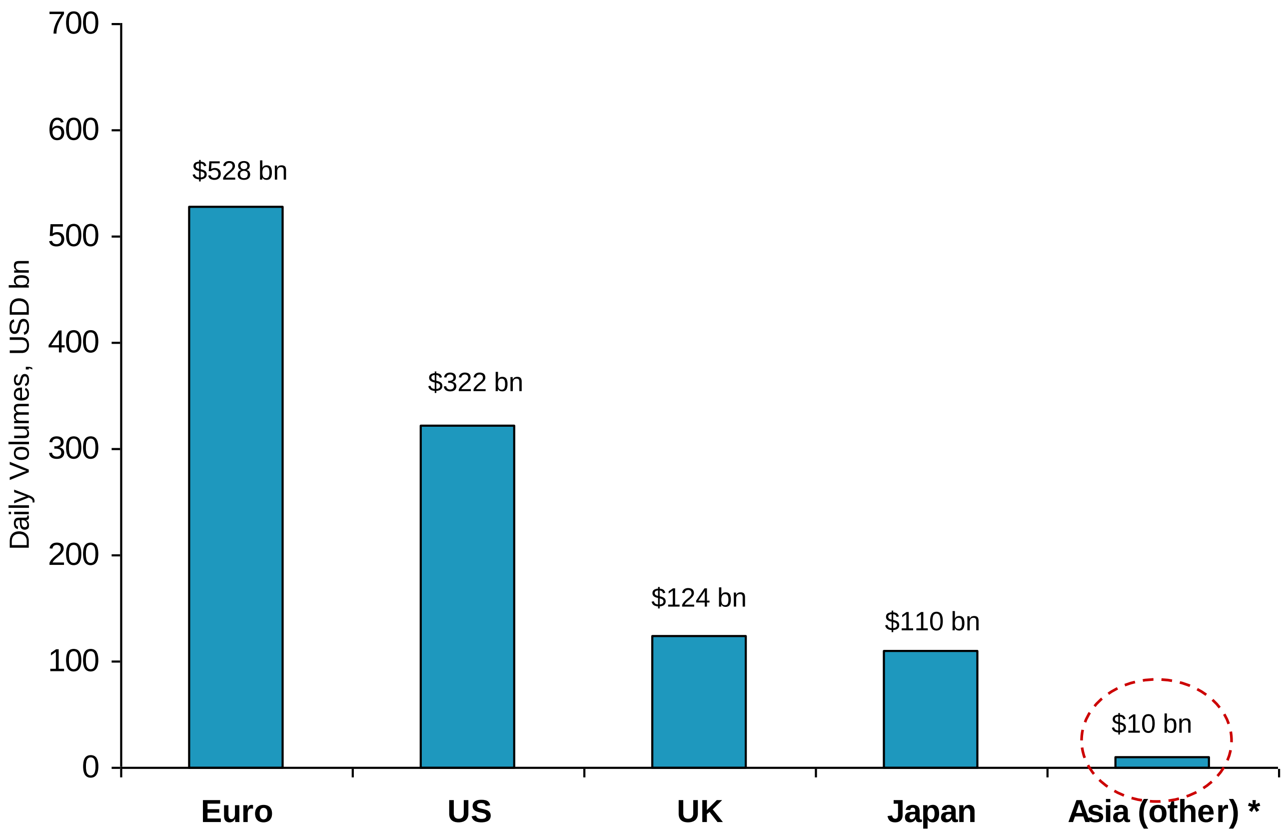
Need longer duration instruments in the capital markets



Source: JP Morgan Local Markets Guide, October 2007. According to the report, ***China*** *and* ***Malaysia*** *have even smaller swap markets (total daily volumes USD 100m and USD 25m respectively)*

Need greater liquidity in capital markets

Total daily trading volumes for swaps – Euro, US, UK, Japan, Asia

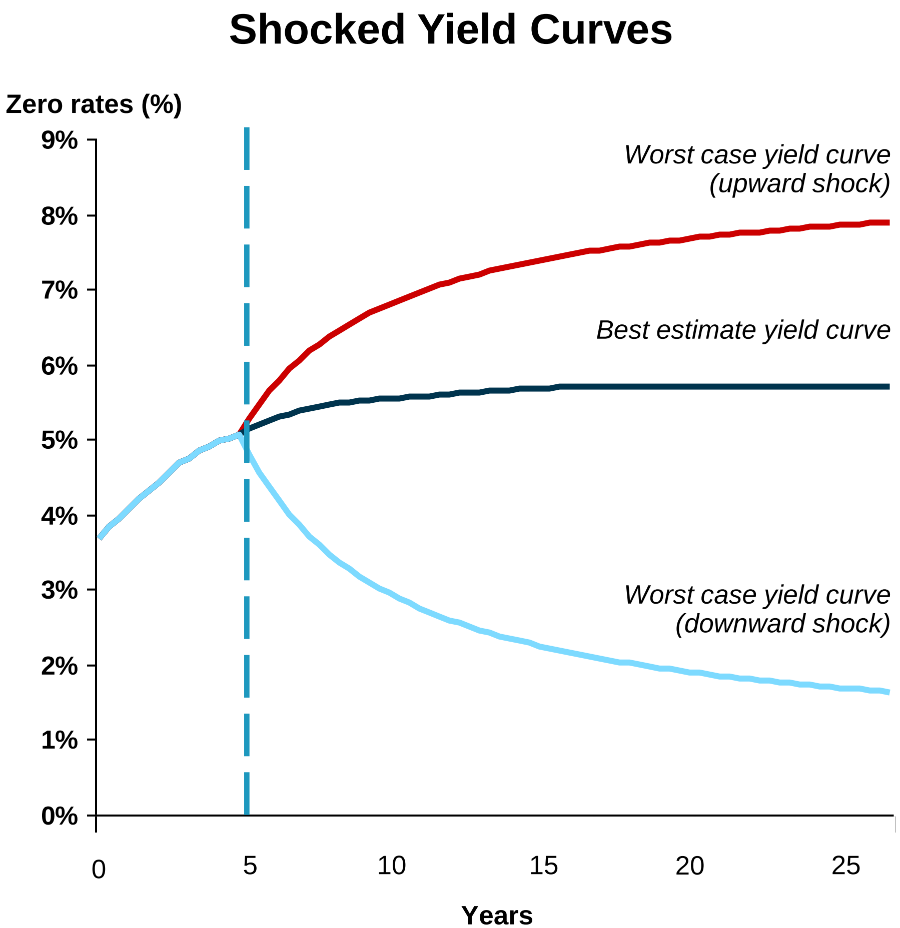


** Includes other 11 Asian markets where Prudential invests (estimated).*

Source: JP Morgan Local Markets Guide, October 2007

Bank for International Settlements: Triennial Central Bank Survey of Foreign Exchange and Derivatives, April 2007

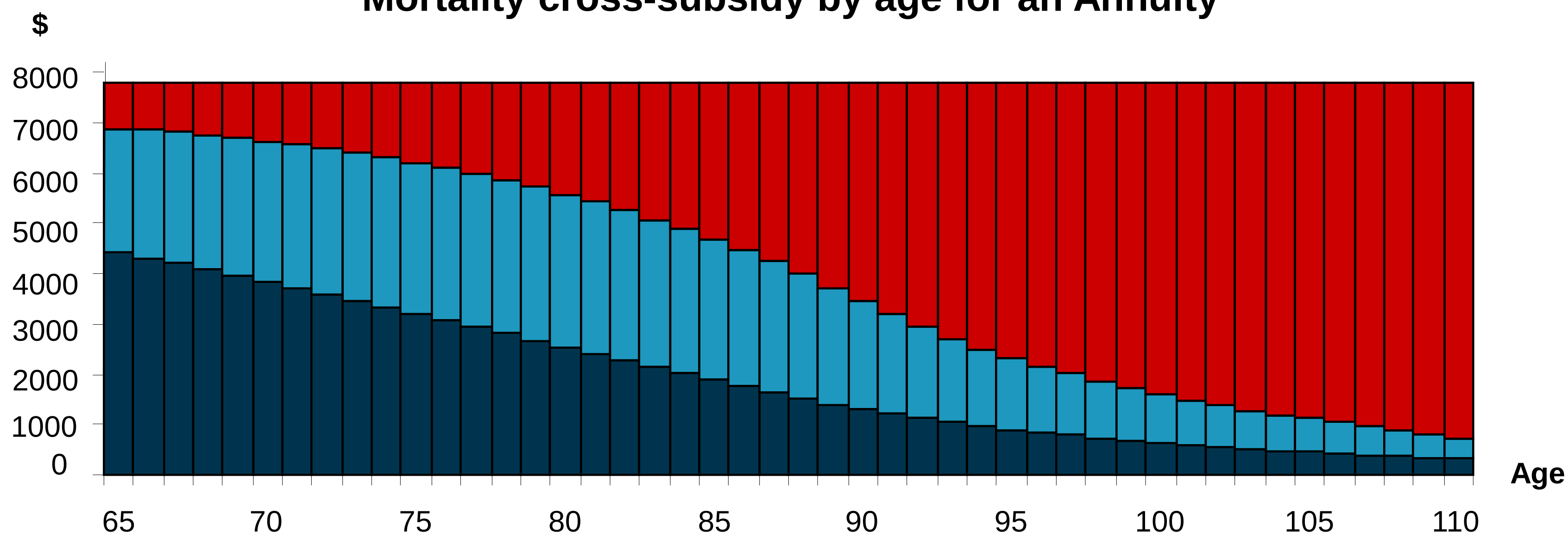
Significant VaR capital implications for non-developed capital markets



- With an incomplete yield curve, company is exposed to reinvestment risk after year 5
- Non-hedgeable VaR capital for incomplete capital markets determined by shocking the reinvestment assumptions after year 5 and recalculating the assets and liabilities on this basis
  - VaR capital is given as the difference between the best estimate and worst case
- The introduction of 10, 20 year etc instruments will reduce the reinvestment risk and therefore the non-hedgeable risk capital

Develop products addressing variation in mortality cross-subsidy

Mortality cross-subsidy by age for an Annuity



- Flexible retirement income account solutions giving income, investment and death benefit choice and flexibility
- Death benefit more valuable – so delay/phase full annuitisation

- (Compulsory) full annuitisation to secure guaranteed lifetime income
- Longevity risk absorbed by capital markets and insurers

- Further help with tail longevity risk from government

Mortality cross-subsidy
Capital (Single Premium)
Growth less charges

Source: Prudential analysis using 100% PNMA00 medium cohort , 2007. Male aged 65 purchasing an annuity with no death benefit of $7,773 per annum for $100,000

Conclusion

	Today's Retirement Time bomb	Our Vision… and how to make it work
Framework for retirement provision and solvency	• Sbbbbbbbbbbbbbtick your head in the sand and hope for the best	• Transparent and objective approach to value, capital and risk • Takes into account current state of capital markets but creates correct incentives for future development of such markets
Who bears the retirement risk?	• Corporations and governments	• Individuals / insurers • Purchase reliable security (longevity and income) at an appropriate price – compulsory and optional elements • Governments can take extreme tail risk
Impact on individuals	• Individuals delegate their retirement responsibility • Open secret "My DB plans and/or social security won't pay for my retirement"	• Enhances individual choice and responsibility towards risk and return • Good Asset-Liability Management starts at home

MAKING EMPTY PROMISES WILL ULTIMATELY BE DETRIMENTAL TO SOCIAL BENEFIT