

Using Internal Capital Models to Better Understand and Articulate Risk Tolerance

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New Zealand Society of Actuaries
Conference 2010, 21 – 24 November,
Blenheim

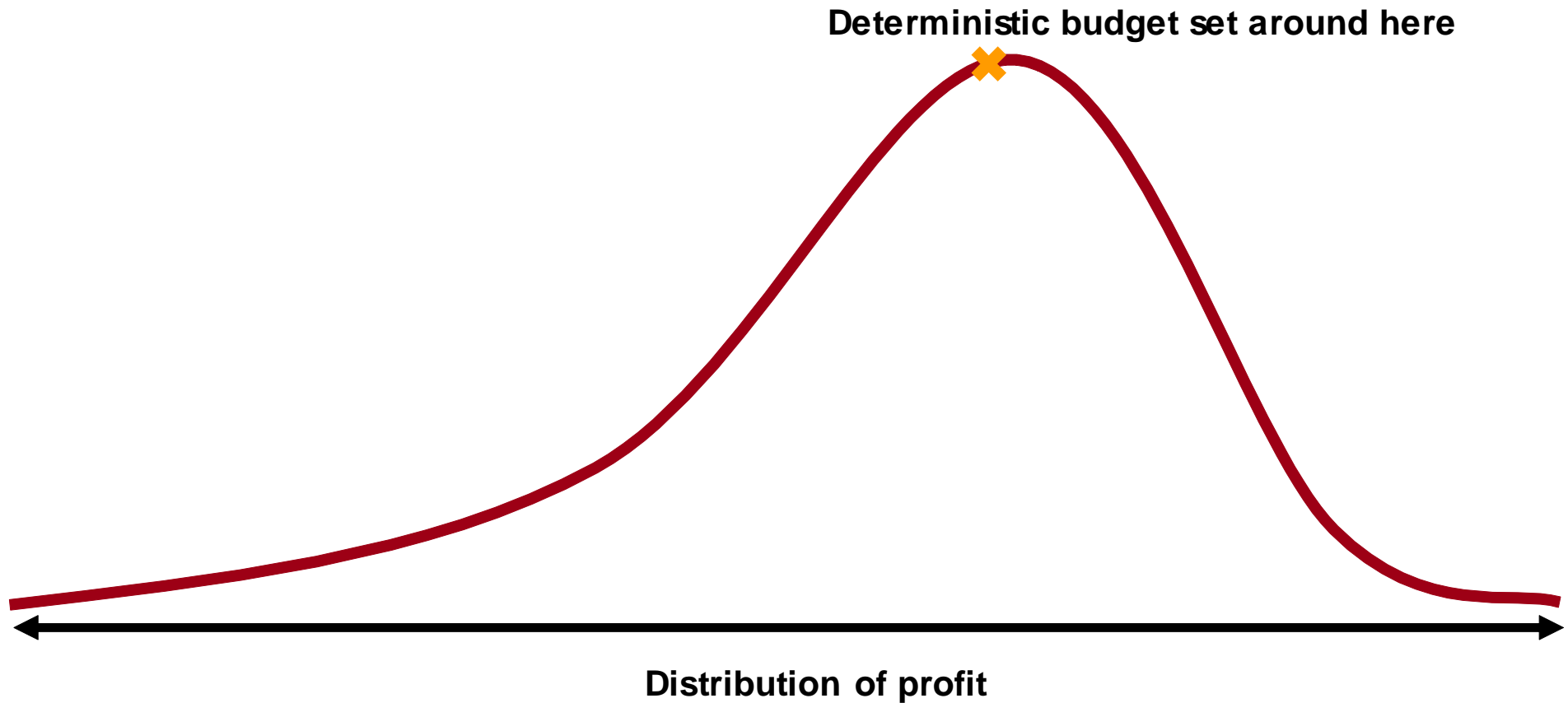


Outline of presentation

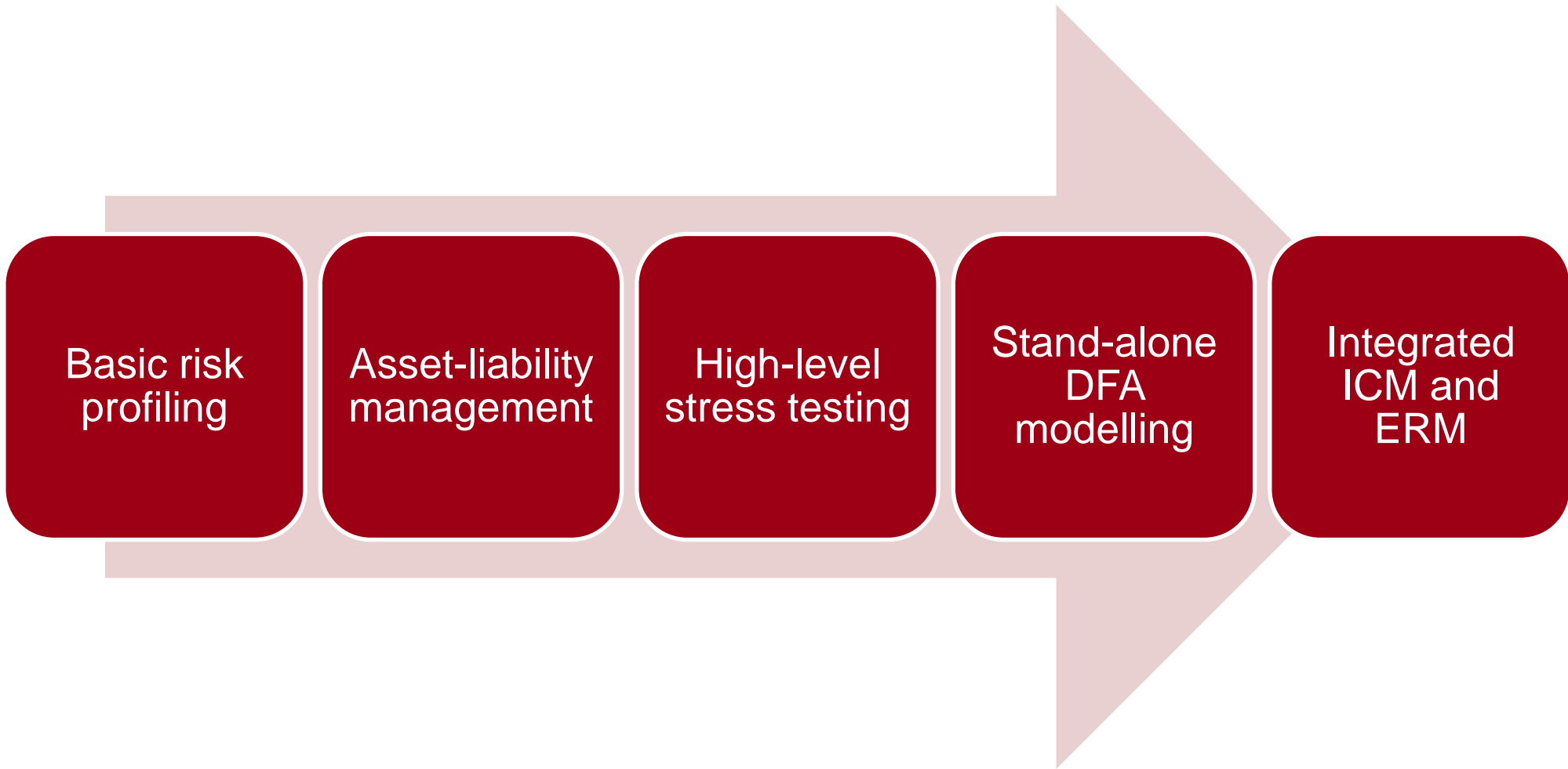


- Introduction to Internal Capital Models (ICMs)
- A global picture of ICMs
- Measuring risk tolerance
- Articulating risk appetite

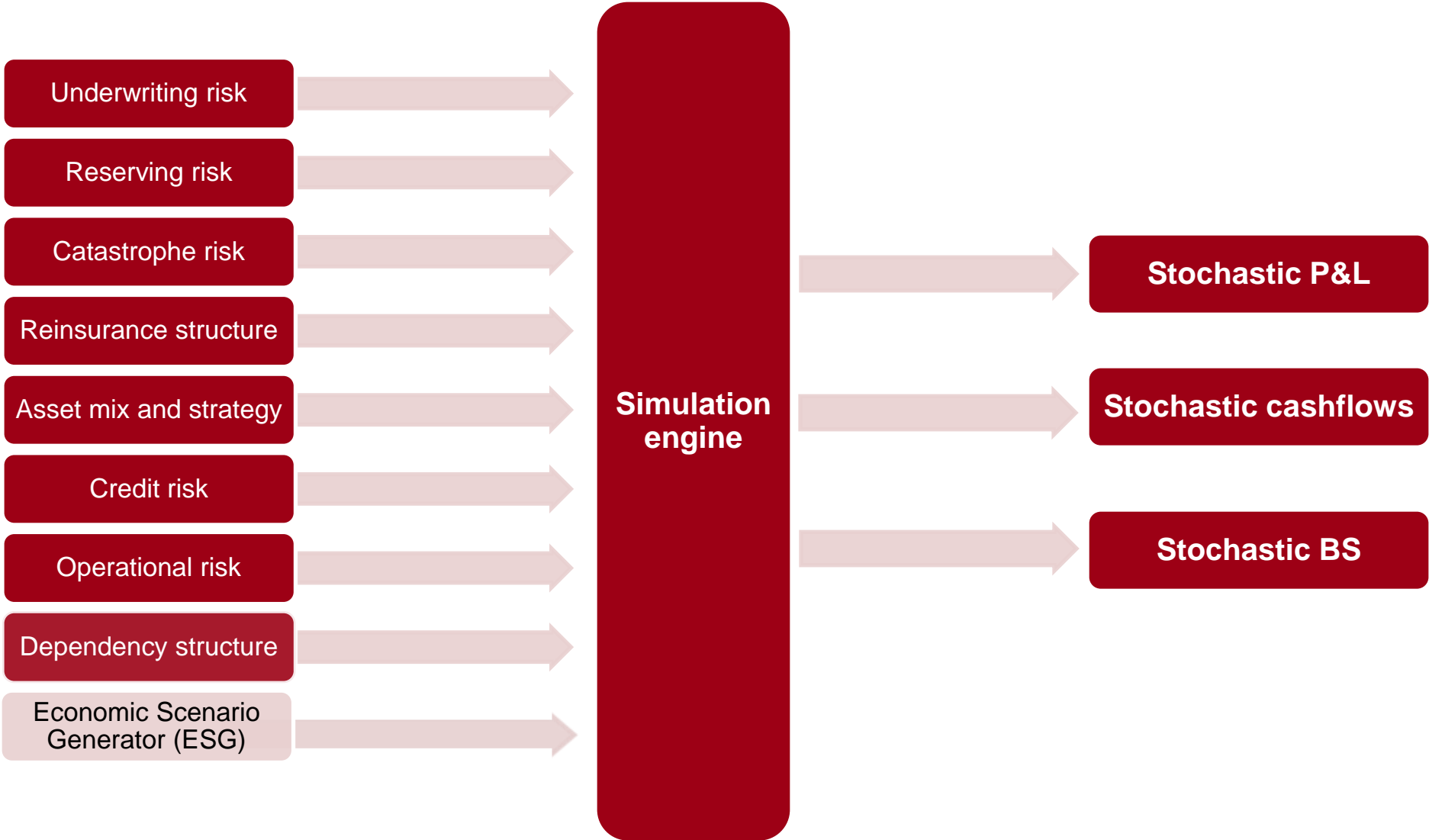
An ICM is effectively a stochastic budget



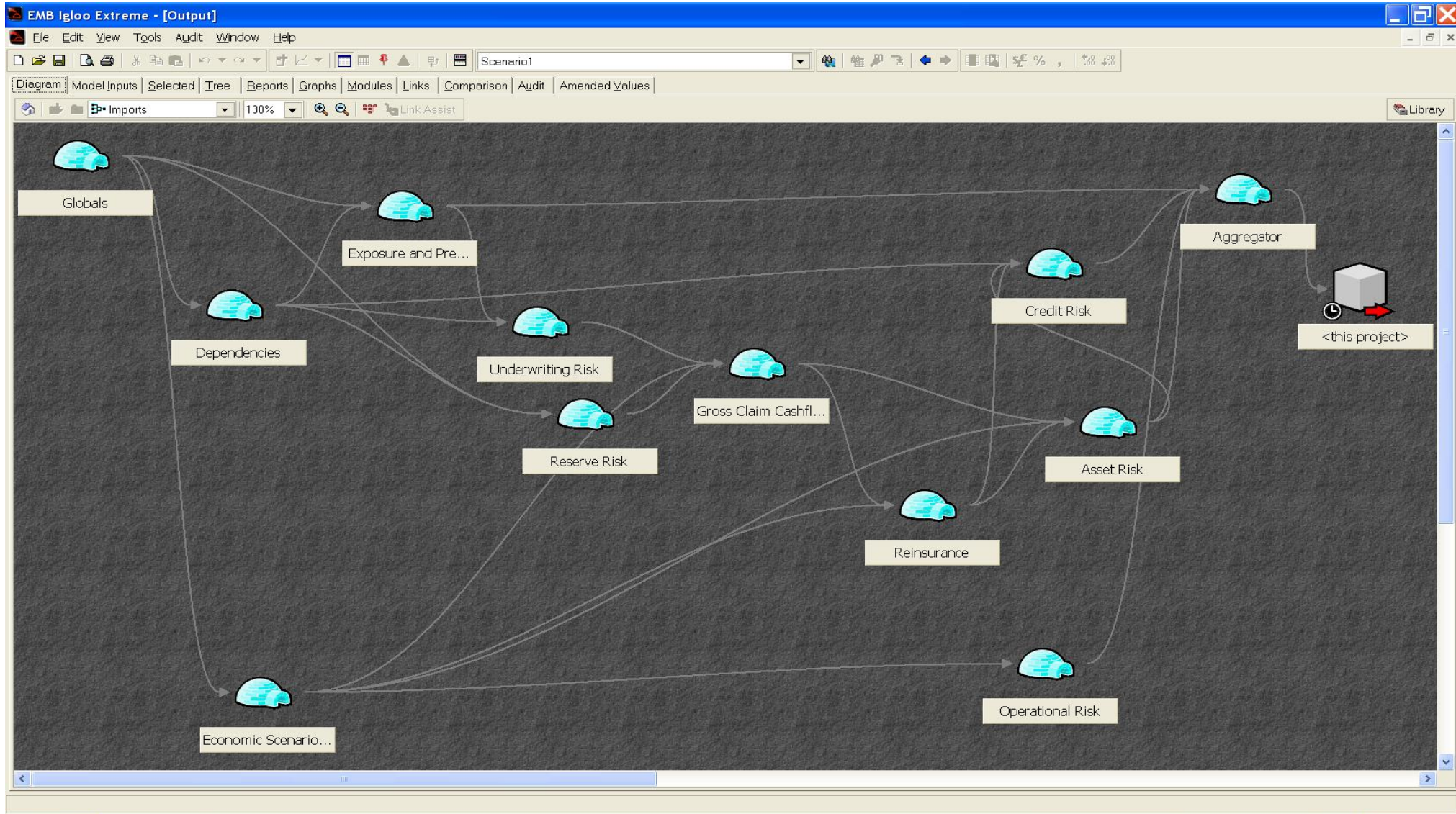
The journey towards integrated ICMs



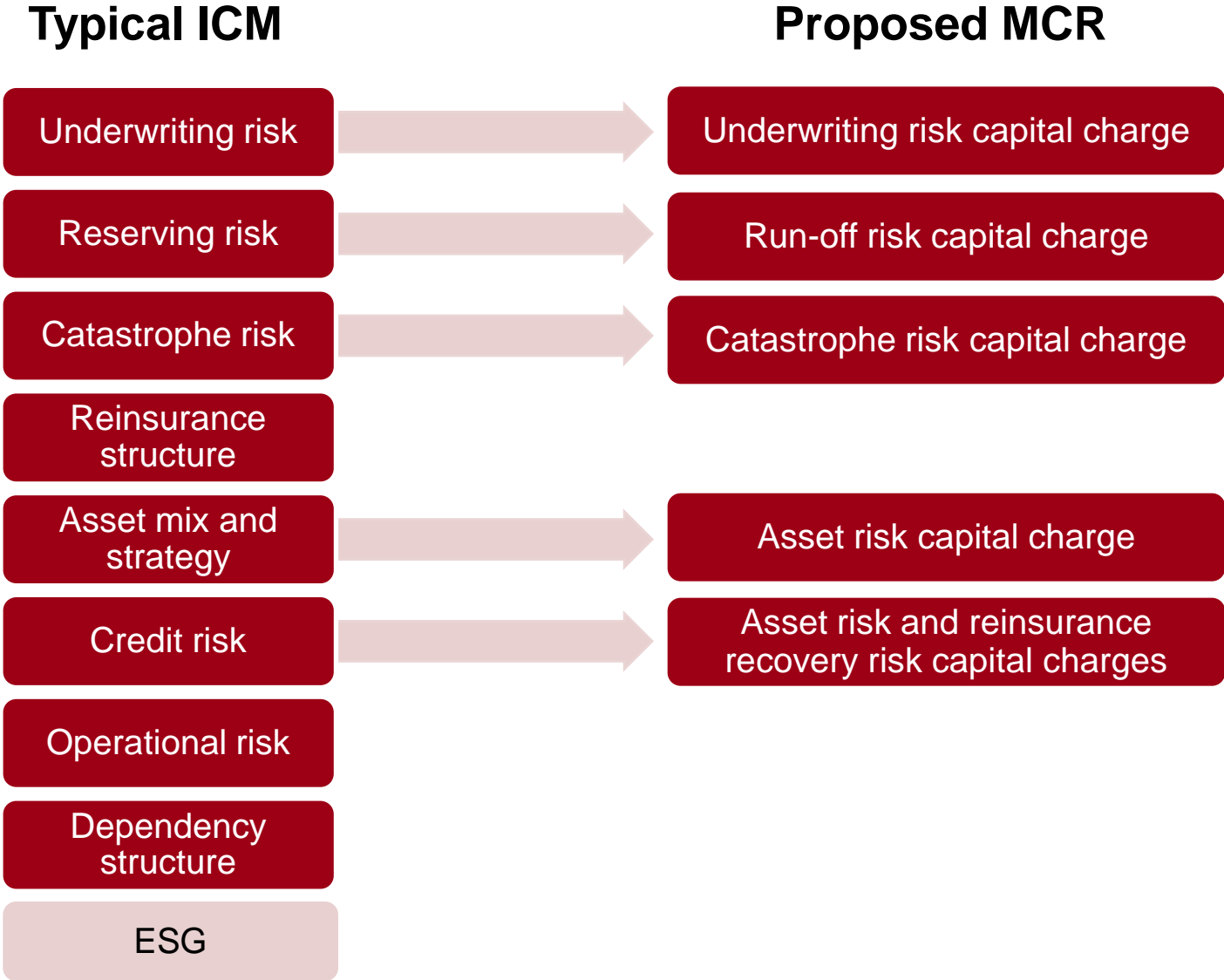
ICMs have a number of key elements



A real ICM framework in Igloo



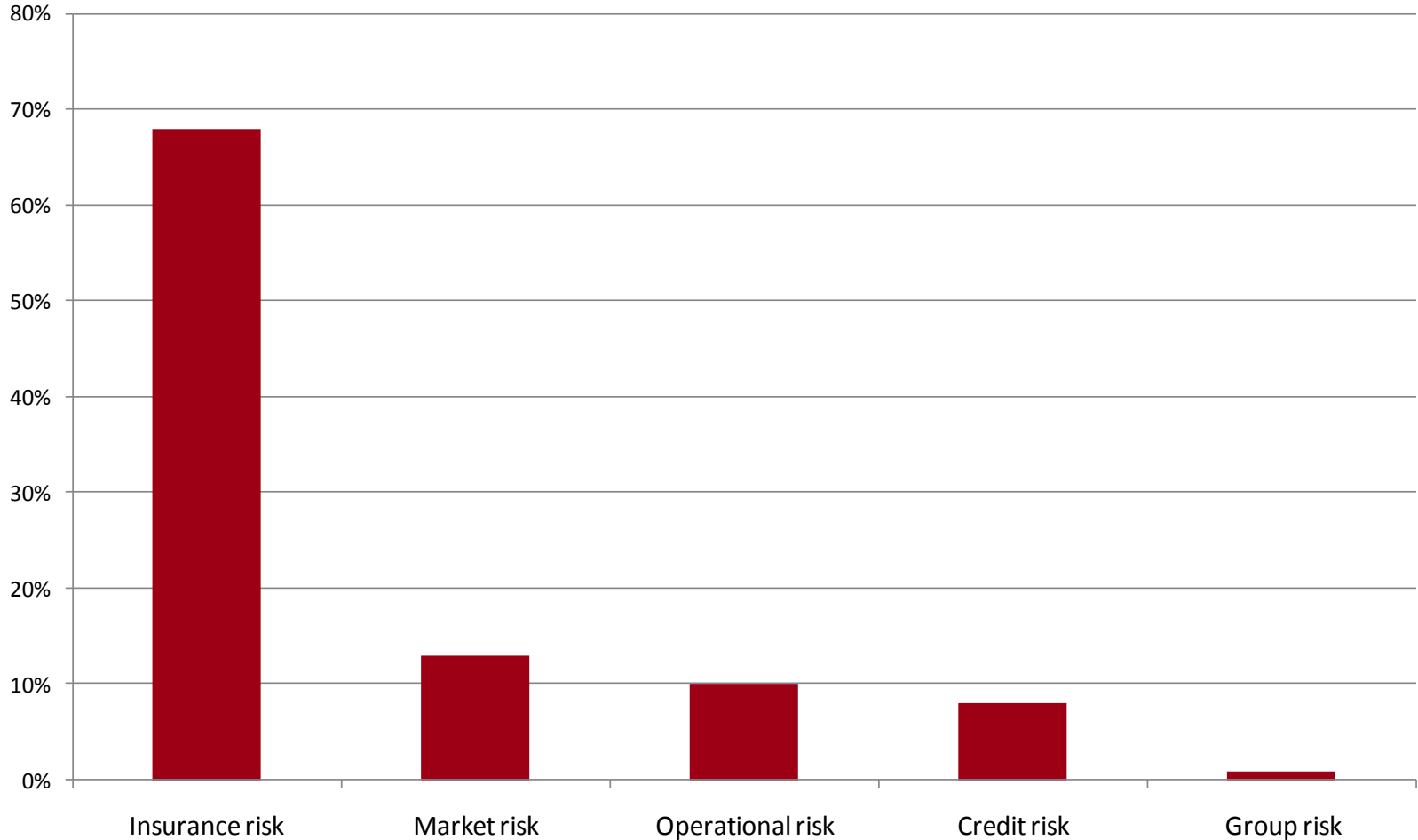
How do ICM components compare to proposed MCR?



Insurance risk is easily the largest contributor

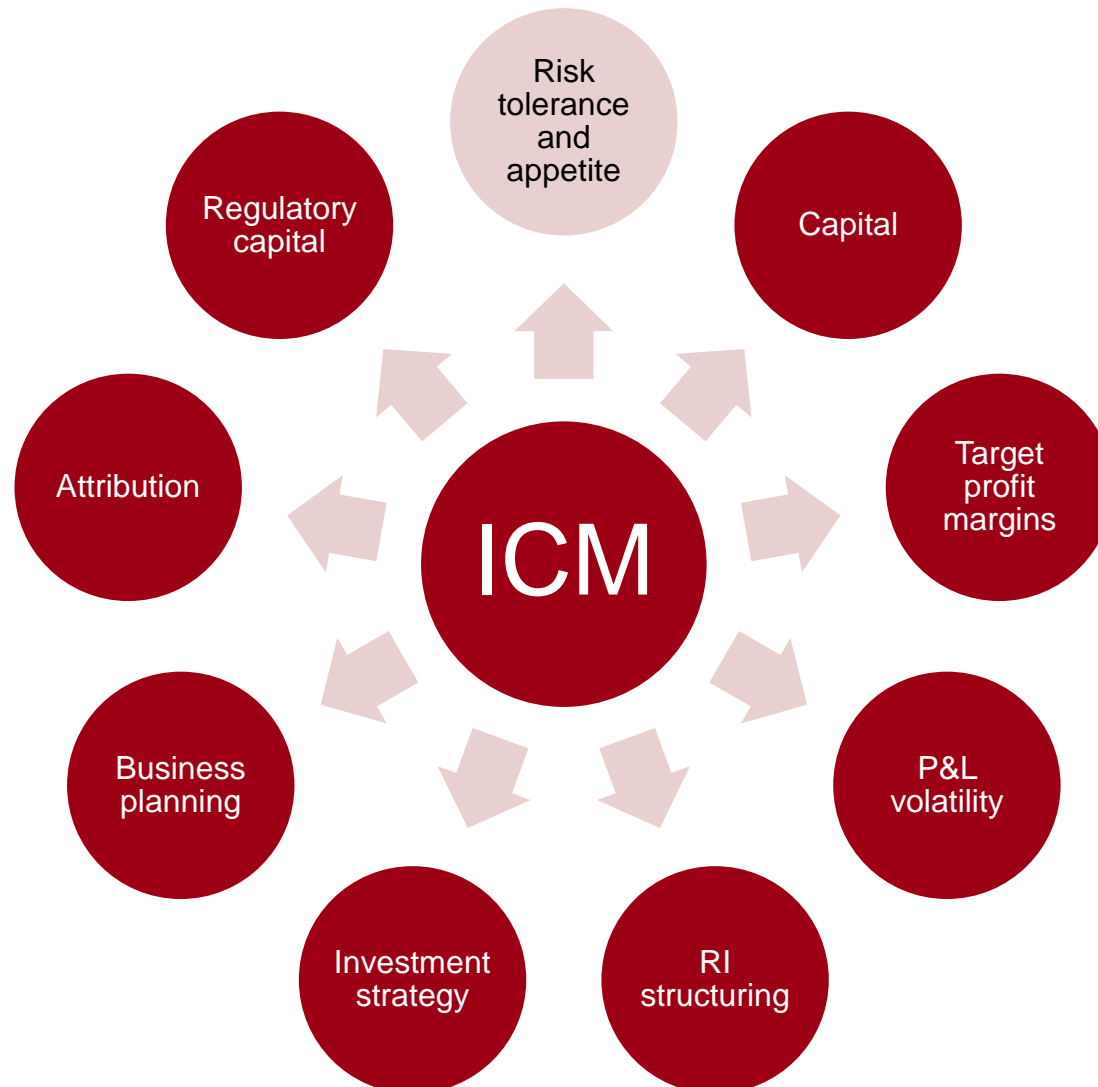


Attribution by risk category



Source: FSA Insurance Sector Briefing: ICAS – Lessons learned and looking ahead to Solvency II (Oct 2007)

There are many uses for ICMs



Global ICM landscape: Australia



- > Internal model-based MCR an option since 2002
- > Not compulsory but encouraged where possible
- > 3 large insurers approached APRA to use ICMs for regulatory capital
- > Punching above its weight

Global ICM landscape: New Zealand



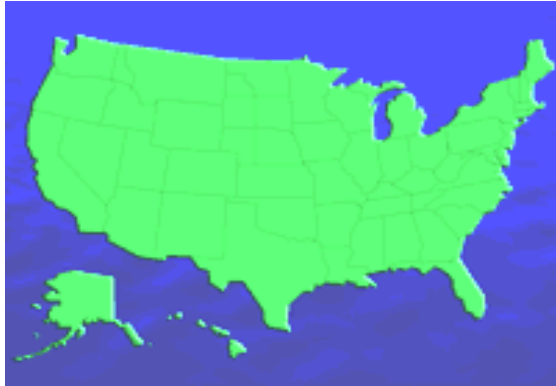
- > Introducing a new solvency regime
- > No option for an internal model-based MCR
- > NZ insurers with large Australian parents have ICMs

Global ICM landscape: UK and Europe



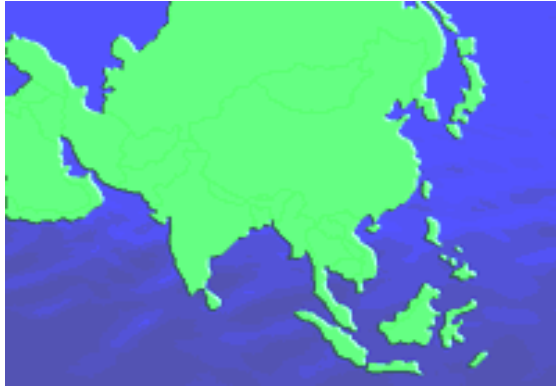
- > UK currently requires insurers to conduct internal capital assessments (ICAs)
- > Solvency II a 'sea change'
- > Allows a prescribed basis, internal model or hybrid
- > Solvency II will be a key global driver of change

Global ICM landscape: US



- > ICMs not required by regulators
- > Traditionally the domain of large insurers / reinsurers
- > Following GFC, more interest in the role that ICMs can play
- > Indirect impact of Solvency II
- > The sleeping giant?

Global ICM landscape: Asia



- > Wide range of approaches to regulation
- > Risk-based capital regulation common
- > ICMs starting to emerge but not for regulatory capital
- > Some Asian regulators considering use of ICMs

Global ICM landscape is changing



- > General trend is one of increased use of ICMs
- > Driven by the developed world
- > Solvency II likely to materially drive global trends over the next 10 years
- > When will the US catch up with rest of developed world?

What is risk appetite?



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- > Risk appetite incorporates
 - Capacity for risk
 - Desire for risk
 - Tolerance for risk

Risk tolerance has many dimensions...



1. Expected profit

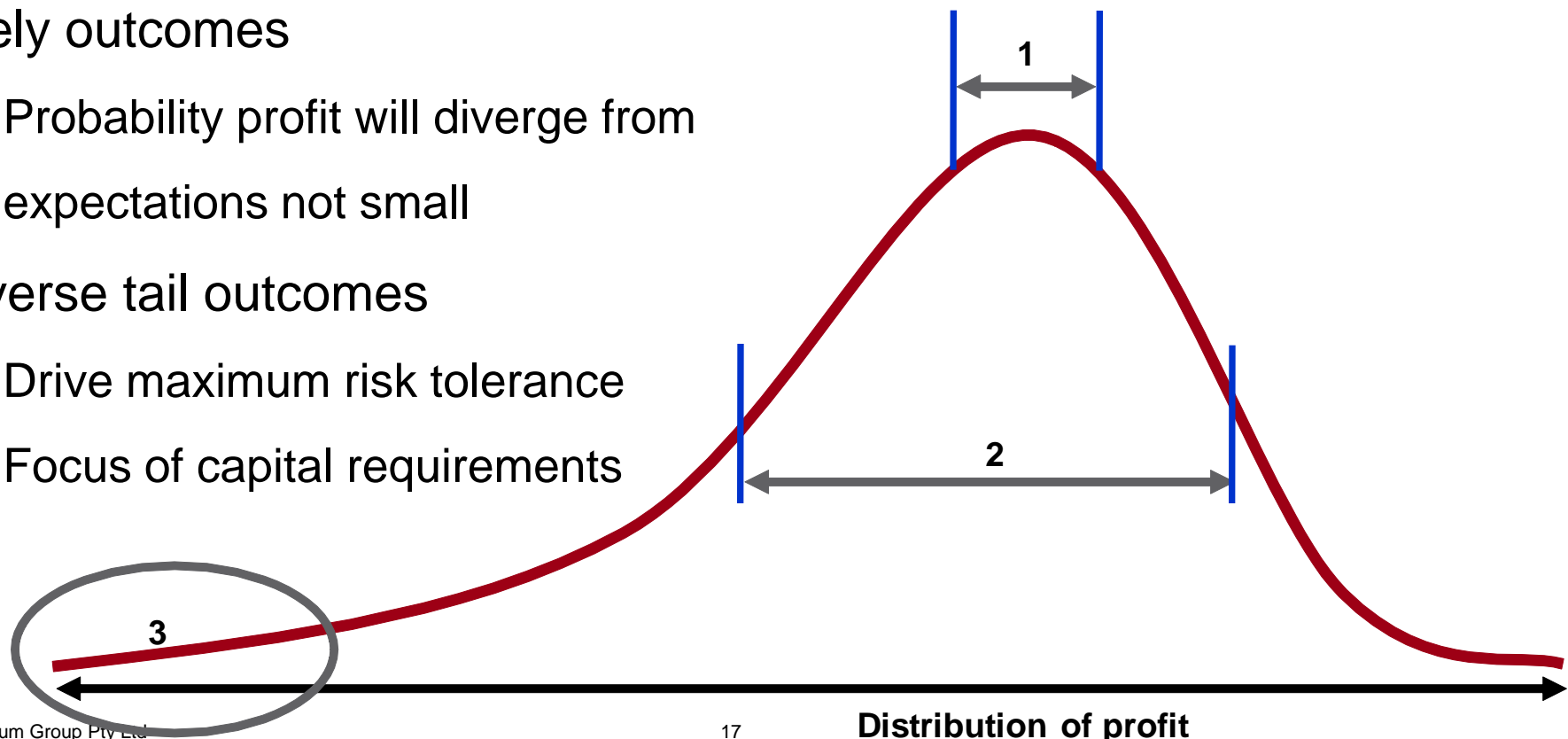
- Drives market expectations
- Business planning and short-term strategy

2. Likely outcomes

- Probability profit will diverge from expectations not small

3. Adverse tail outcomes

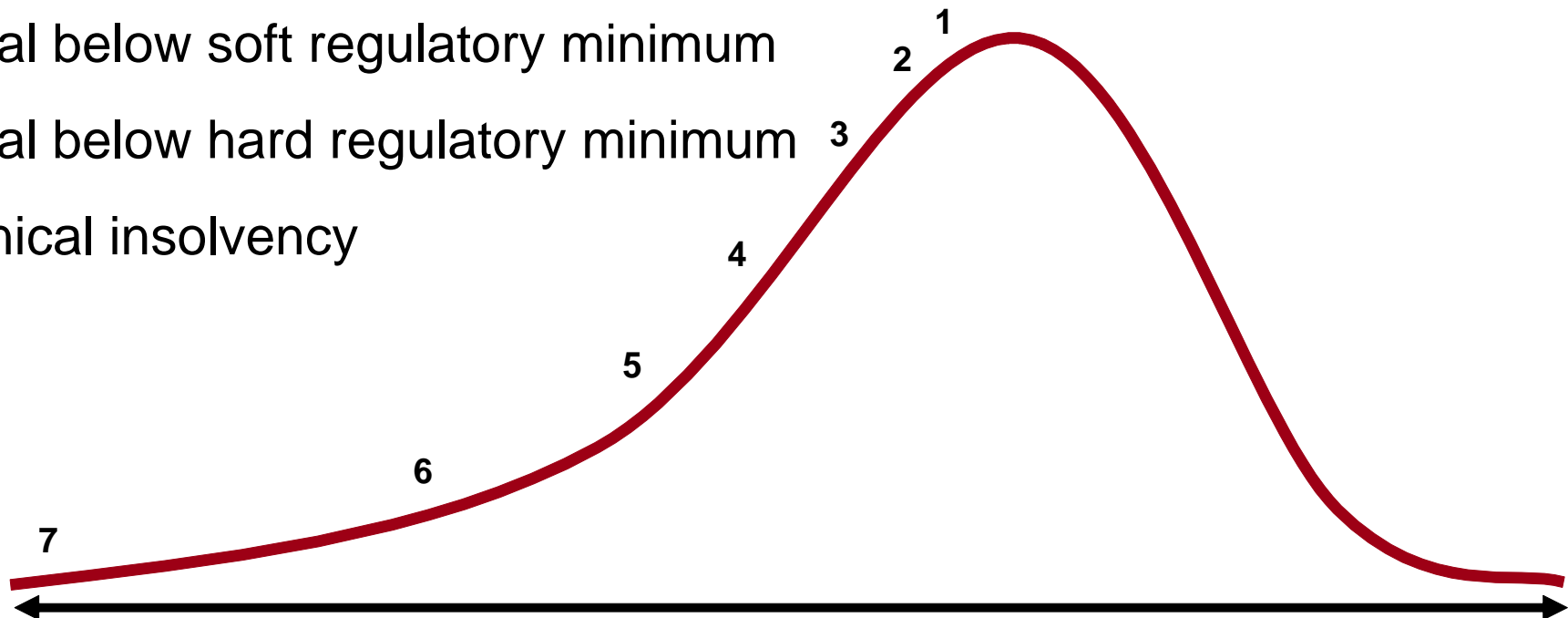
- Drive maximum risk tolerance
- Focus of capital requirements



...and many thresholds



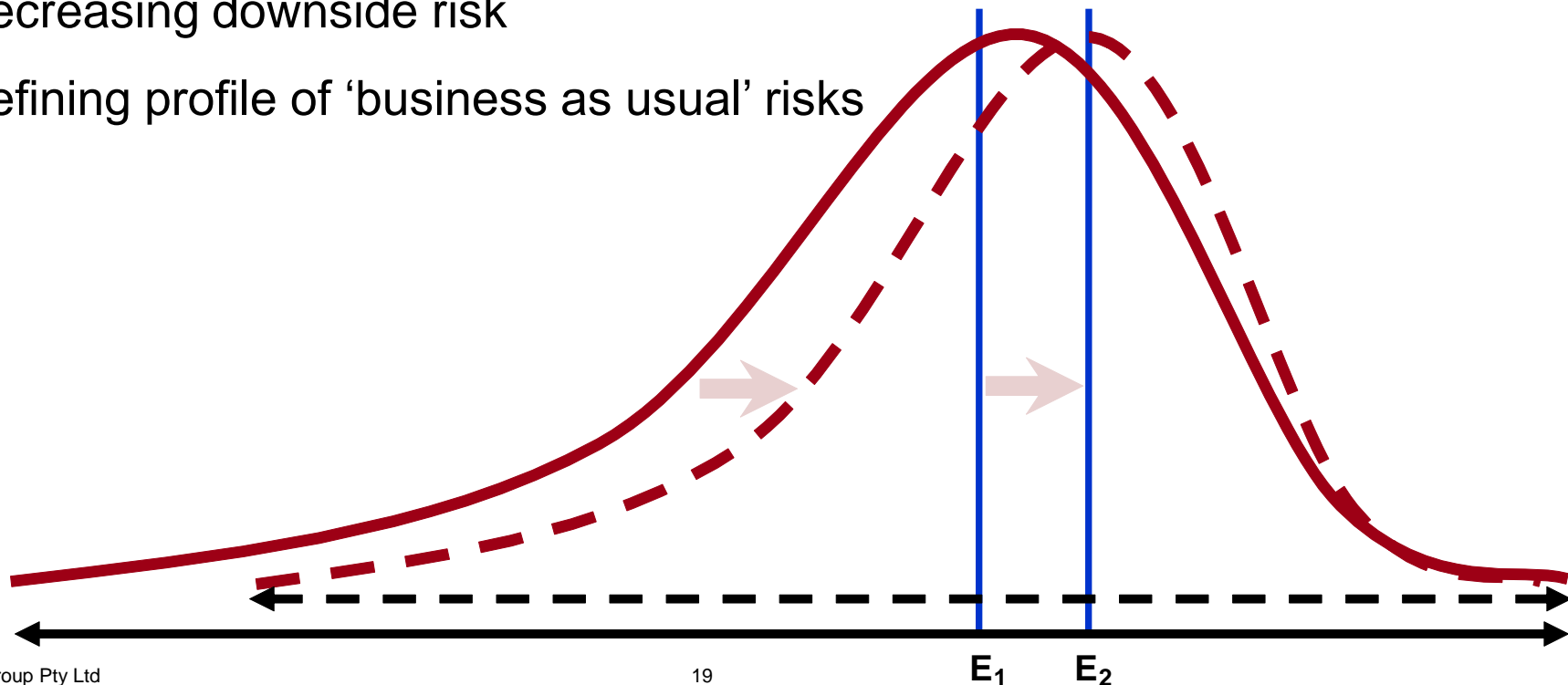
1. Expected profit not achieved
2. Profit warning to market / shareholders
3. Loss in financial year - dividend not covered
4. Capital below internal minimum target
5. Capital below soft regulatory minimum
6. Capital below hard regulatory minimum
7. Technical insolvency



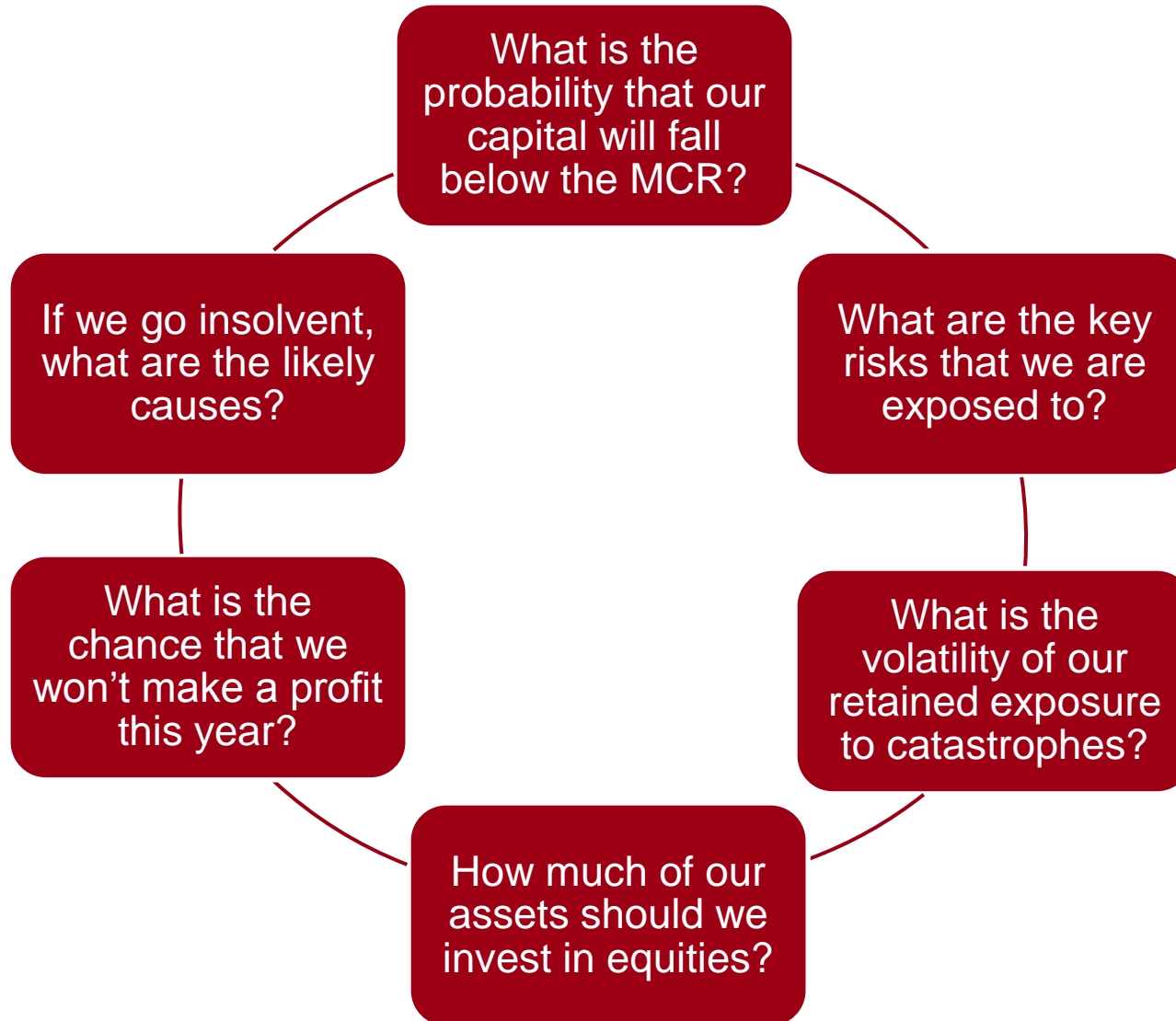
The risk profile can be improved using ICMs



- > A better understanding of drivers of risk using ICMs can lead to an improved risk profile
 - Reducing tail risks
 - Increasing upside risk
 - Decreasing downside risk
 - Refining profile of 'business as usual' risks



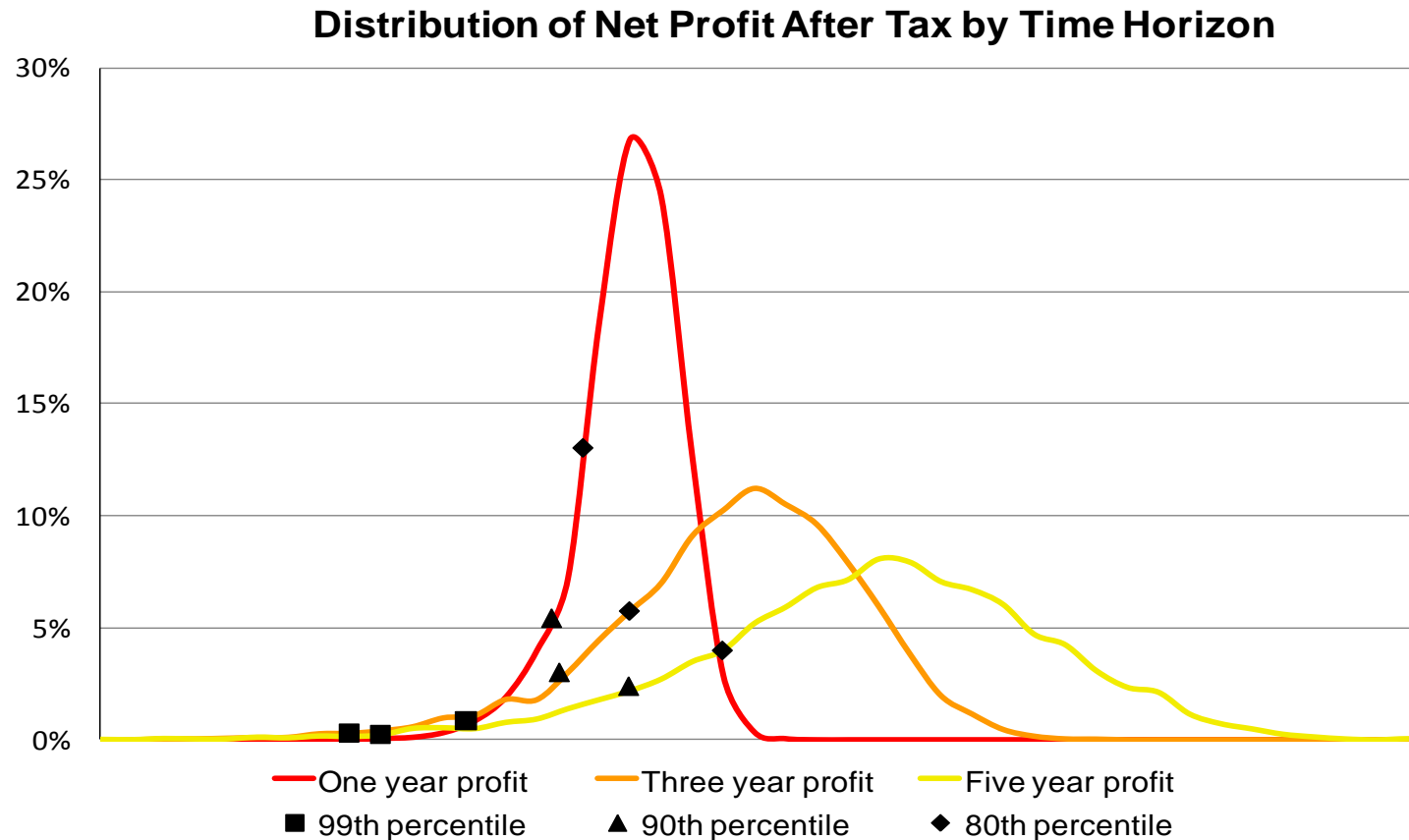
Boards always asking questions about risk tolerance



These can be answered using ICMs



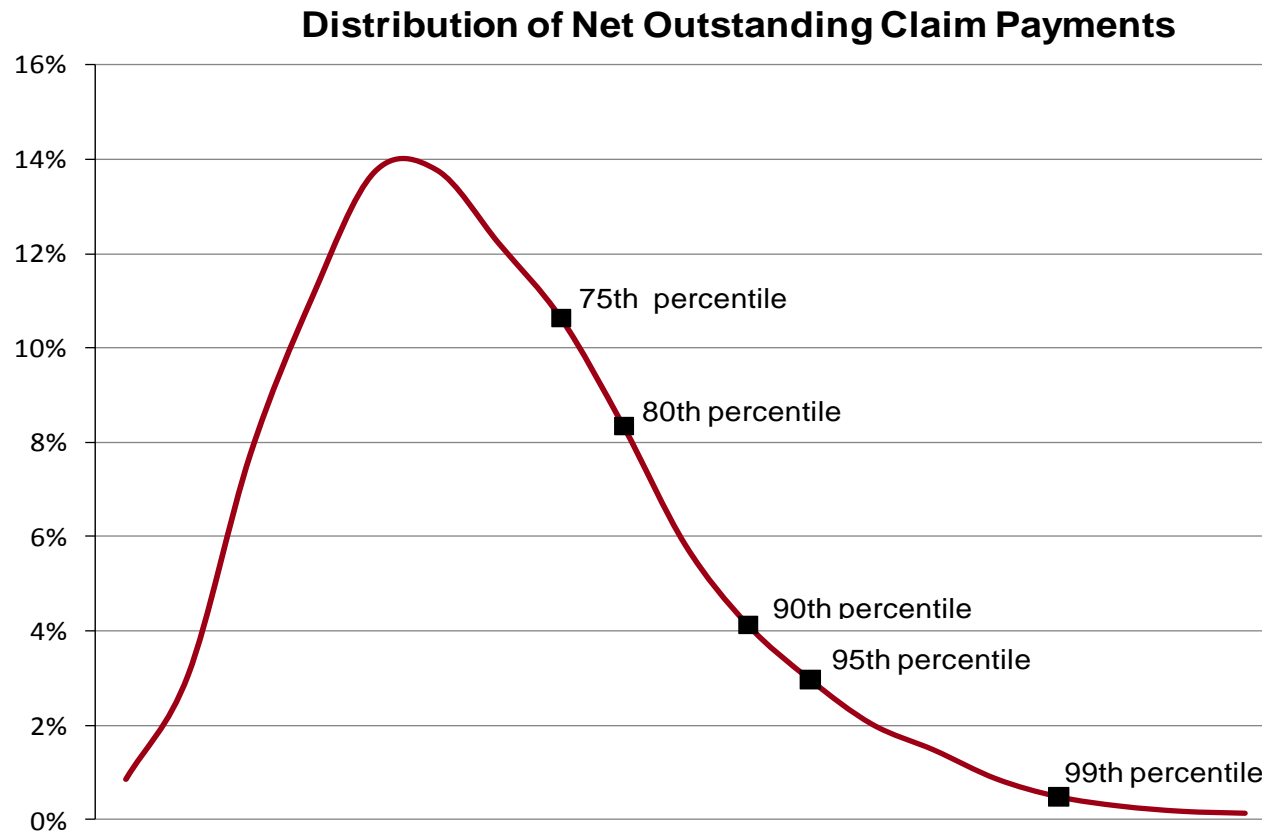
➤ Example: Distribution of net profit over different time horizons



These can be answered using ICMs



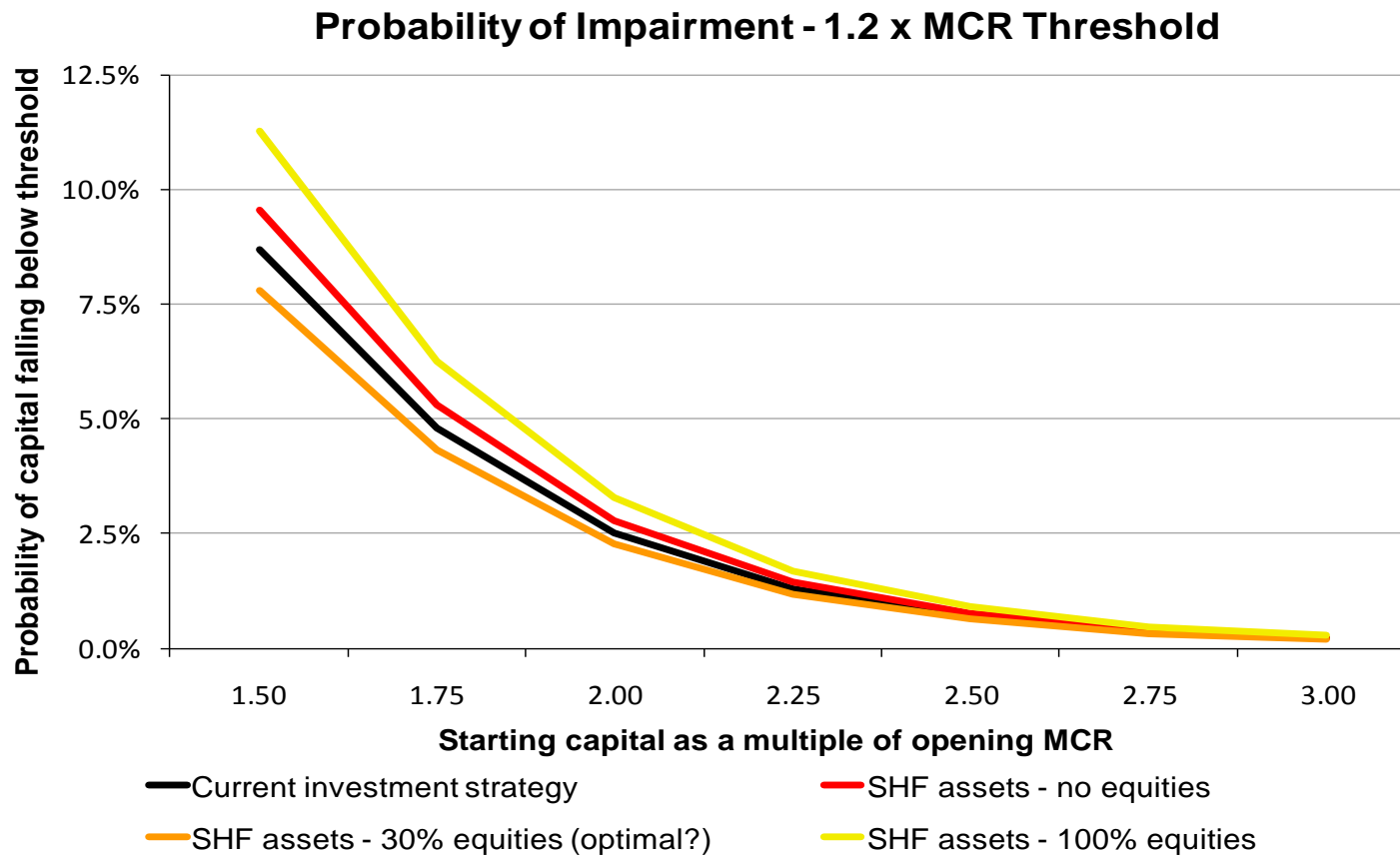
> Example: Distribution of net outstanding claim payments



These can be answered using ICMs



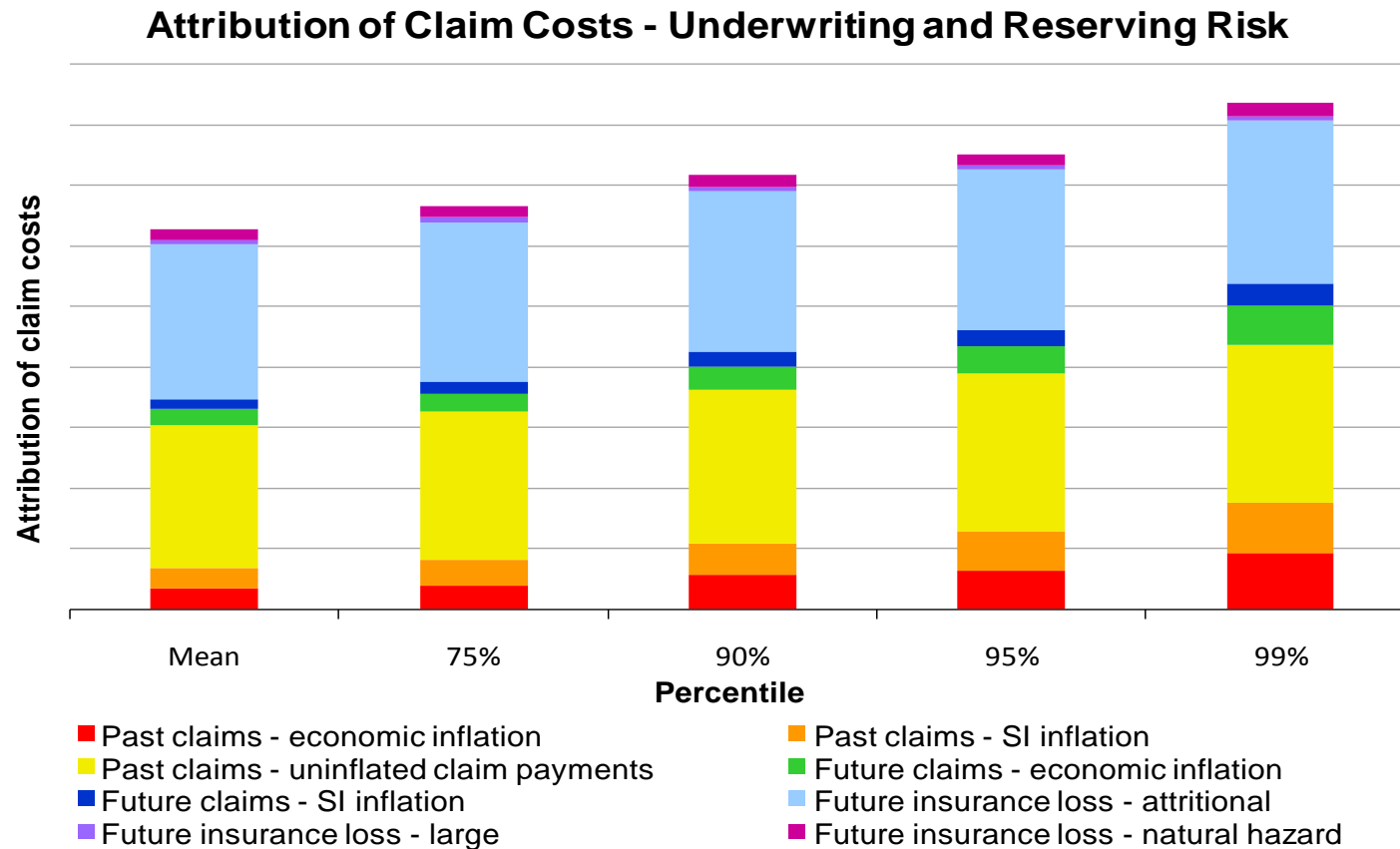
- Example: Probability of impairment for different investment strategies



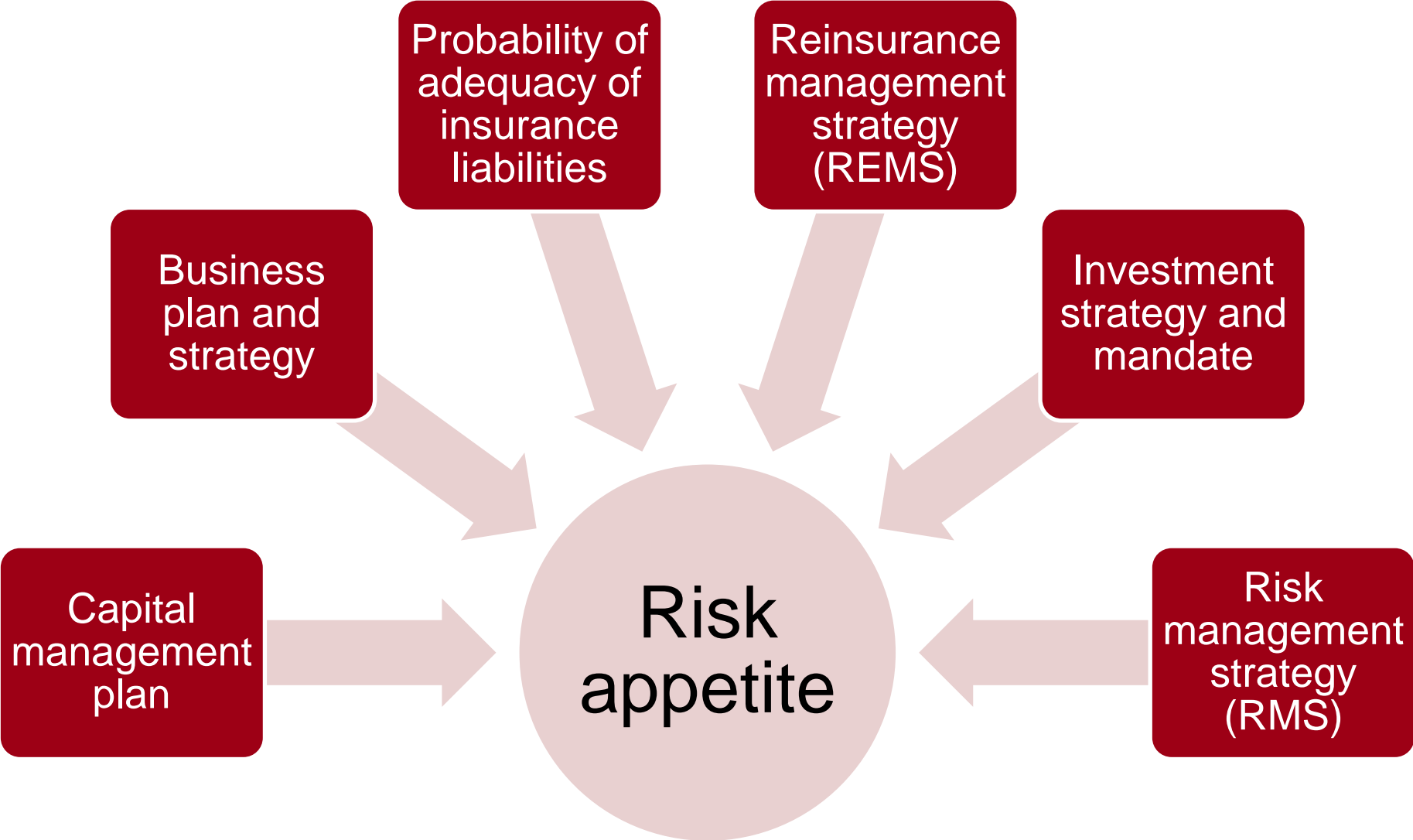
These can be answered using ICMs



➤ Example: Distribution of insurance risk outcomes and attribution



An articulation of risk appetite is not one statement



Capital Management Plan (CMP)



- > Key vehicle for risk tolerance statements
- > Particularly those derived using ICMs
- > Consider operating capital range, including
 - Minimum Capital Adequacy Multiple
 - Maximum Capital Adequacy Multiple
- > Risk tolerance statements can attach to minimum and maximum

CMP risk tolerance statements



- Risk tolerance can consider 3 dimensions
 - A risk threshold, e.g. 1.2 x MCR
 - A time horizon, e.g. 1 or 5 years
 - An x% probability of falling below risk threshold at any point over time horizon

Investment strategy



- Strategic asset allocation (SAA) can be considered in context of adopted risk tolerance
- Various SAAs can be modelled and impact on risk tolerance and profit volatility considered
- Investment policy can refer to risk appetite and risk tolerance



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- > REMS considered in context of adopted risk tolerance
 - > Program structure, limits and retentions are elements of risk tolerance
 - > Retentions/MER expressed in many ways
 - % of net assets
 - return period
 - % of projected profits
 - in context of risk tolerance statements



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- RMS is the most appropriate vehicle for aggregation of risk appetite and tolerance statements
 - Pull all of the elements together
 - CMP
 - REMS
 - Investment strategy and policy
 - Probability of adequacy for insurance liabilities

Questions

