The Lost Art of Capital Management

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(Asia-Pacific, Middle East, Turkey, Africa)
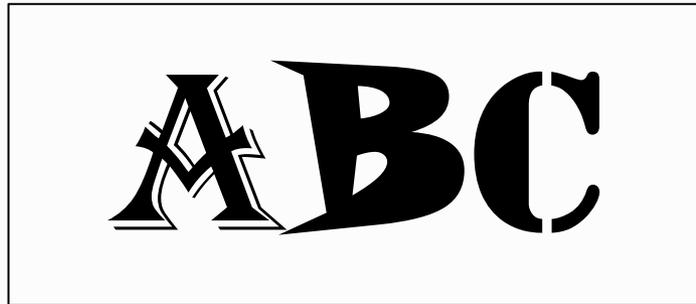
11 November 2015

56th Annual Convention ◆ Actuarial Society of the Philippines

Agenda

- Introduction to *capital*

- Uses of *capital*

- Evolution of *capital*

- Practical *capital*

- Questions?

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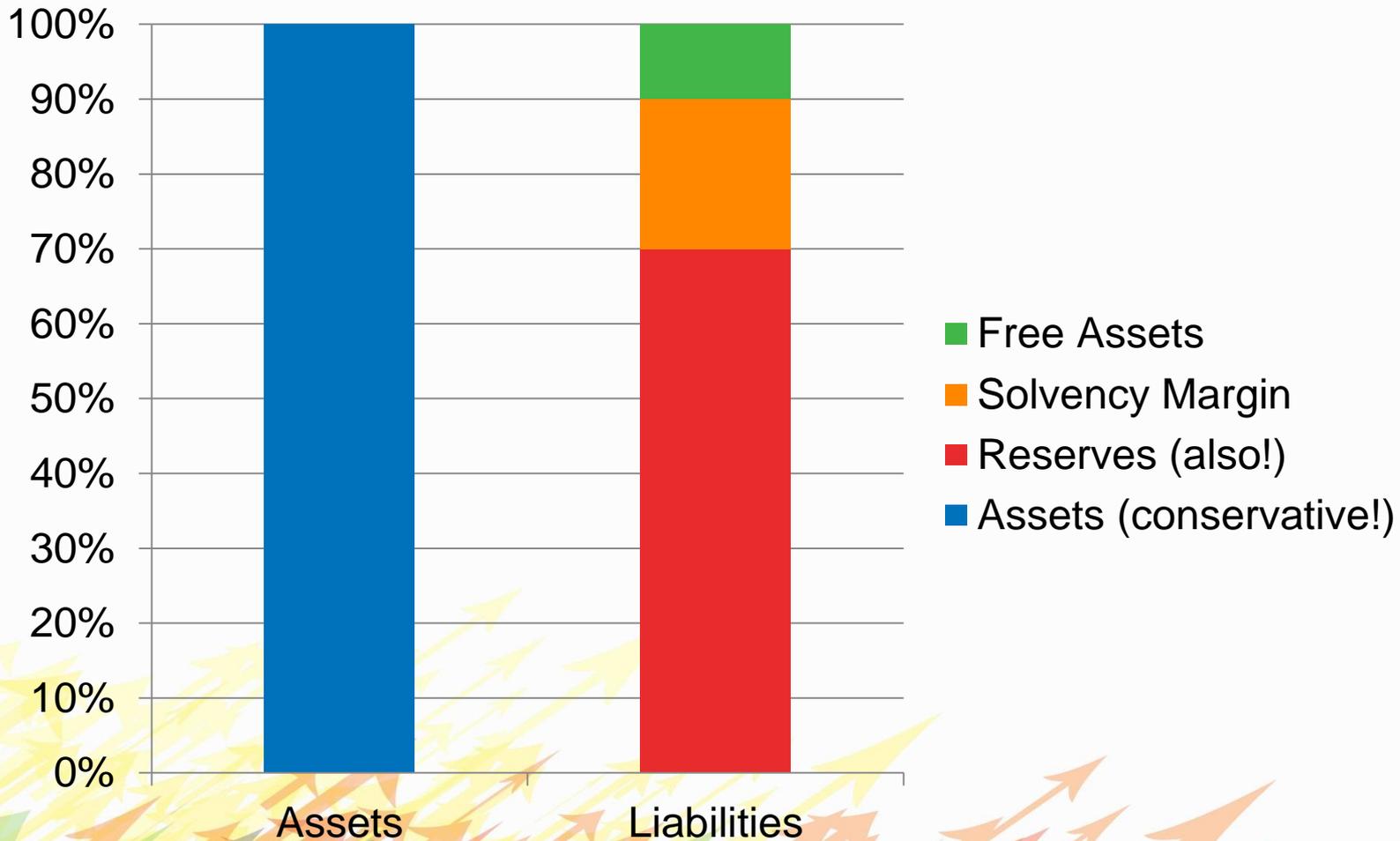CHANGES

INTRODUCTION TO CAPITAL

Principles, not Places

- Each country has a different regulatory environment, different accounting, different products & prices

- Generic frameworks are discussed – they might not apply in every country

- And we're starting from the beginning …

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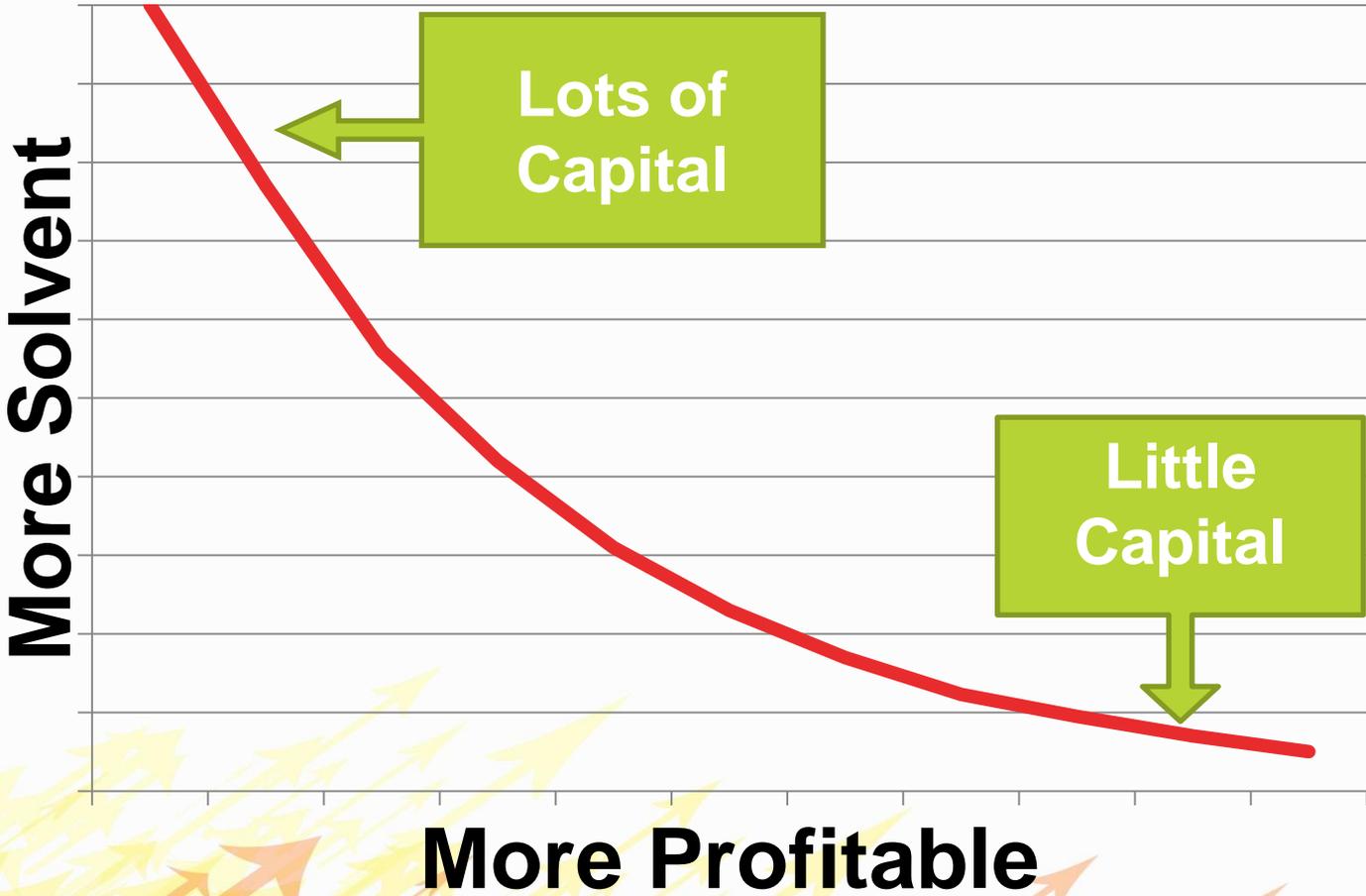COMPETENCIES
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In Theory

- In theory, insurance is a simple business
  - we charge premiums & pay claims
  - we build up assets against our liabilities
- But there is uncertainty in every component
- Actuaries 'make financial sense of the future'
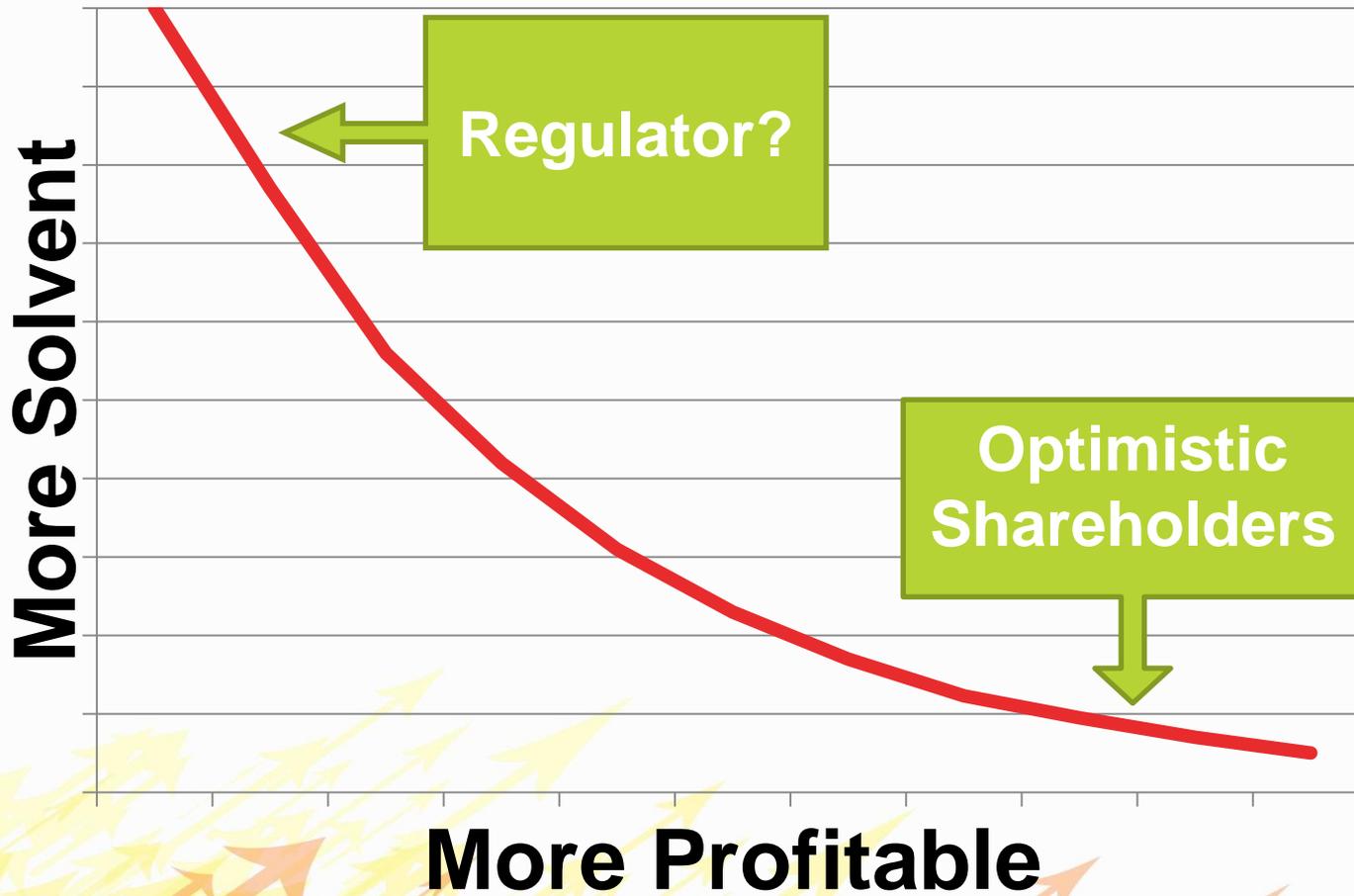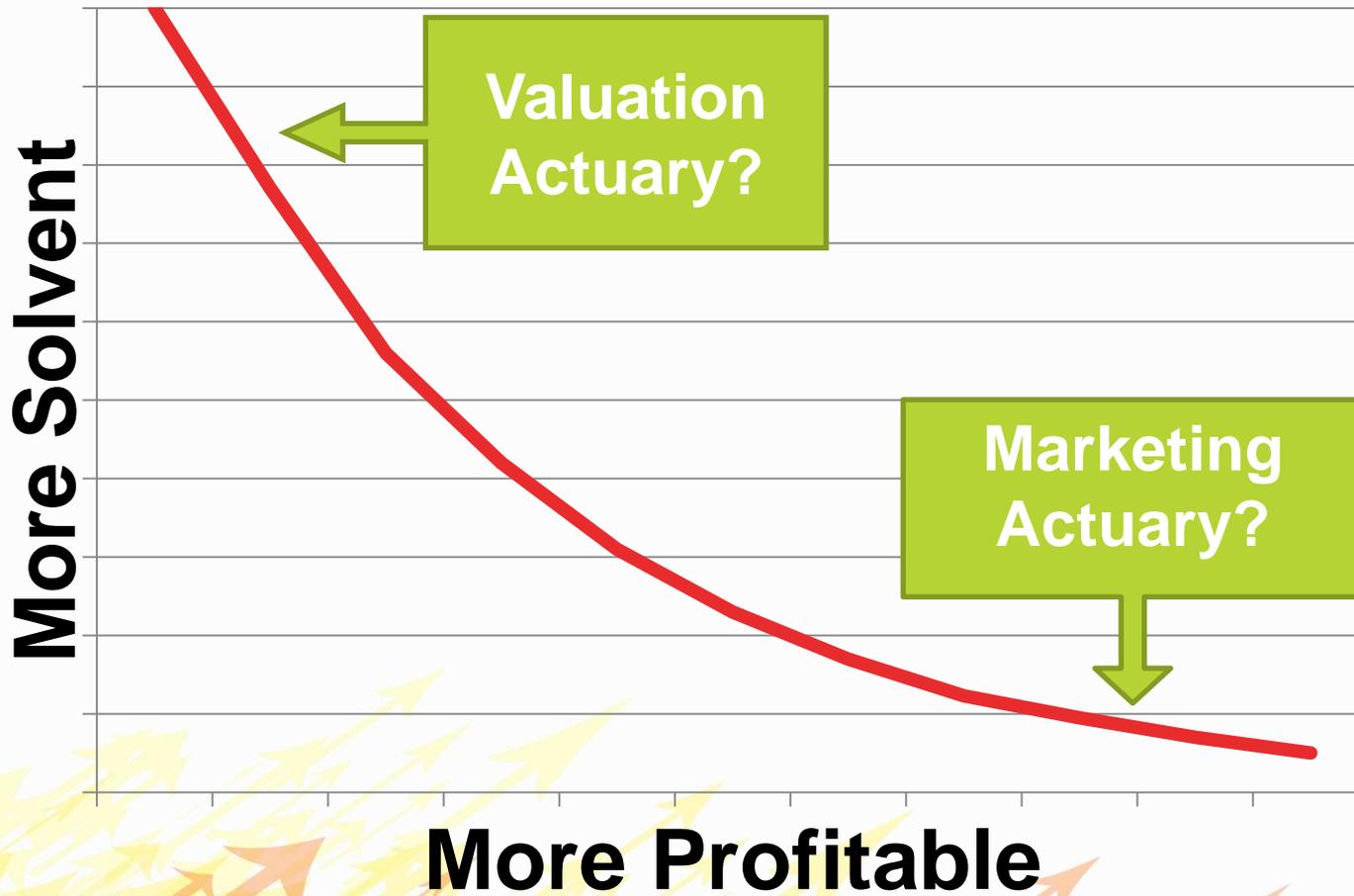- Capital is key to how we deal with uncertainty

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Balance Sheets 101

Chart showing two stacked bars comparing Assets and Liabilities (0% to 100%). The Assets bar is entirely blue. The Liabilities bar shows Reserves (red, 0–70%), Solvency Margin (orange, 70–90%), and Free Assets (green, 90–100%).

Legend:
- ■ Free Assets
- ■ Solvency Margin
- ■ Reserves (also!)
- ■ Assets (conservative!)

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The Good & The Bad

Says Who? (external)

More Solvent (y-axis)

More Profitable (x-axis)

Regulator?

Optimistic Shareholders

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Says Who? (internal)

Chart with "More Solvent" on the vertical axis and "More Profitable" on the horizontal axis, showing a red declining curve. A green box labeled "Valuation Actuary?" points left with an arrow, and a green box labeled "Marketing Actuary?" points down with an arrow.

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The Lost Art

- For many years during so-called 'Solvency I'
  - capital was conservatively measured
  - insurers had lots of capital
- There was perhaps no need to refine
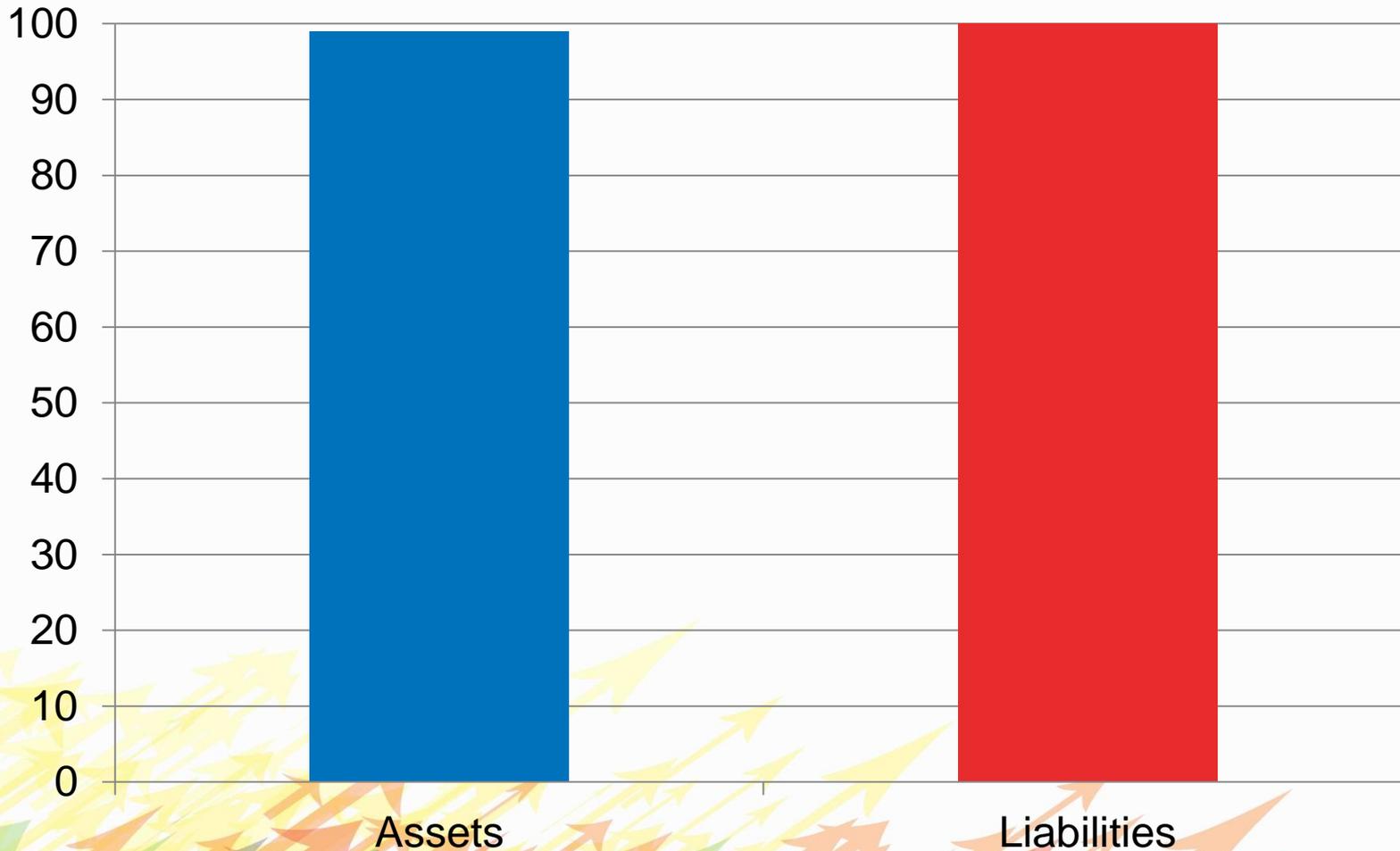- Actuaries now have better motive & methods

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USES OF CAPITAL

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Balance Sheets 101 (again)
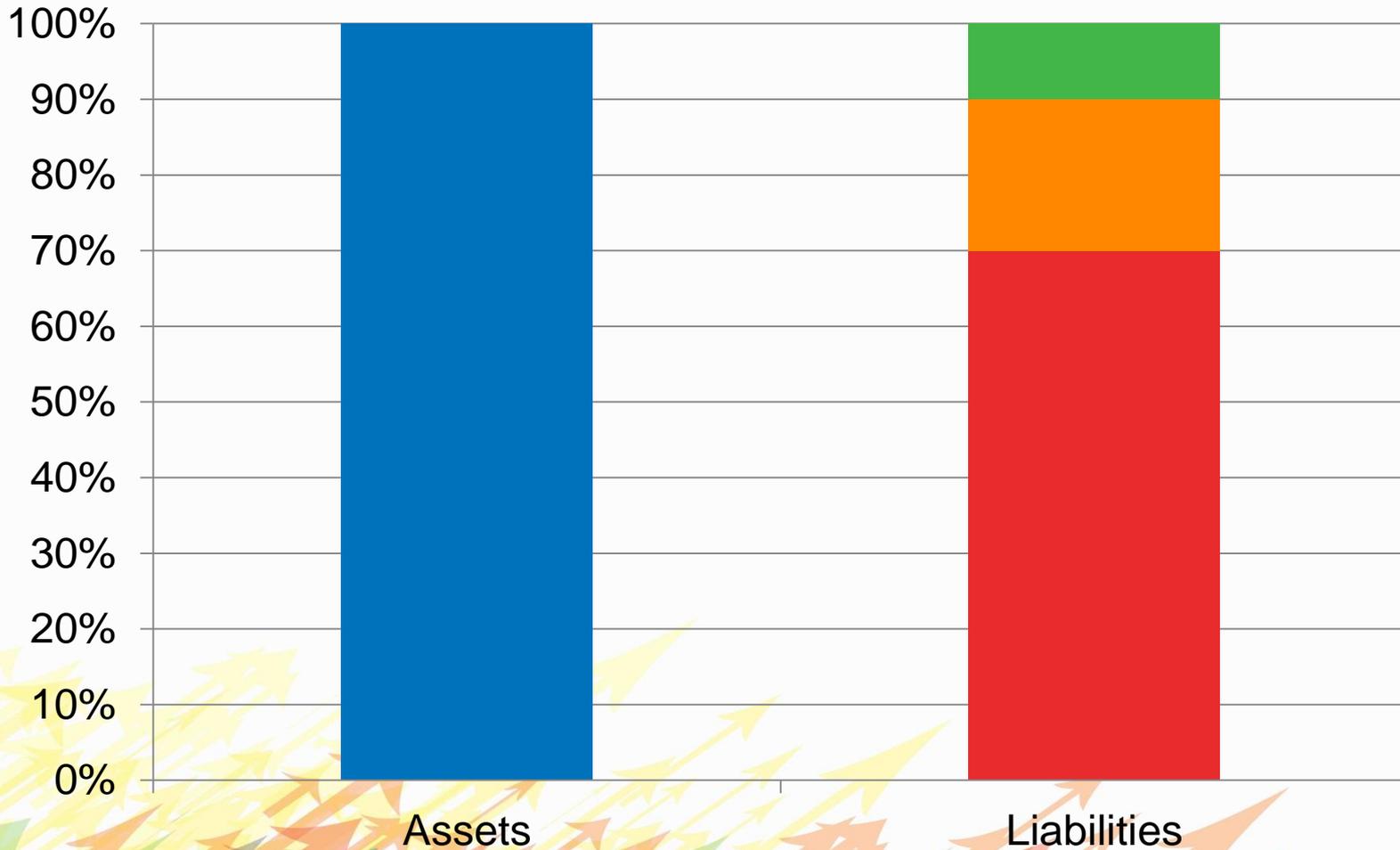
Spilling a Bottle of Milk

A Really Bad Year

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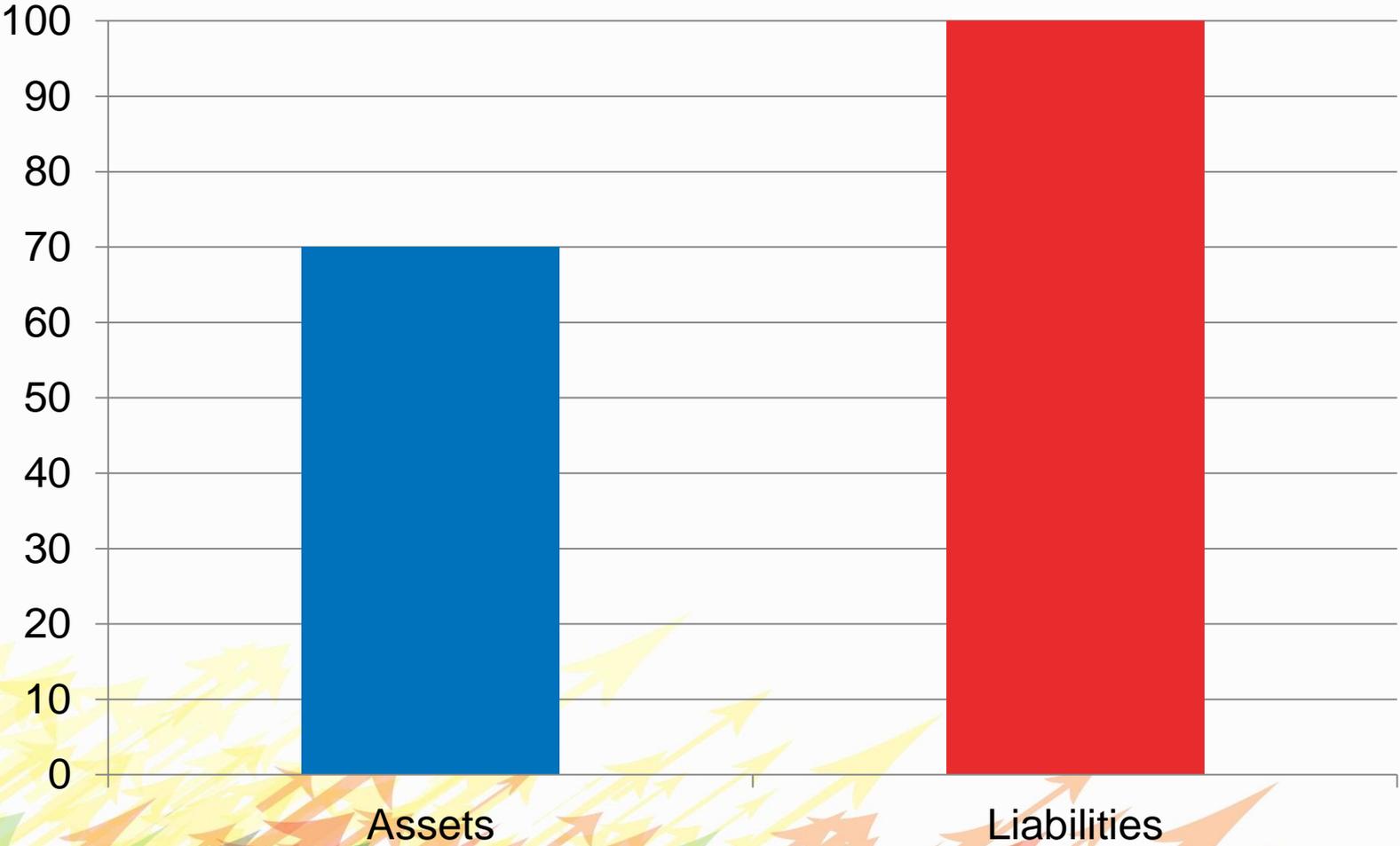
New business strain

A Source of Competition

More Solvent (y-axis)

More Profitable (x-axis)

The optimal place is … ?

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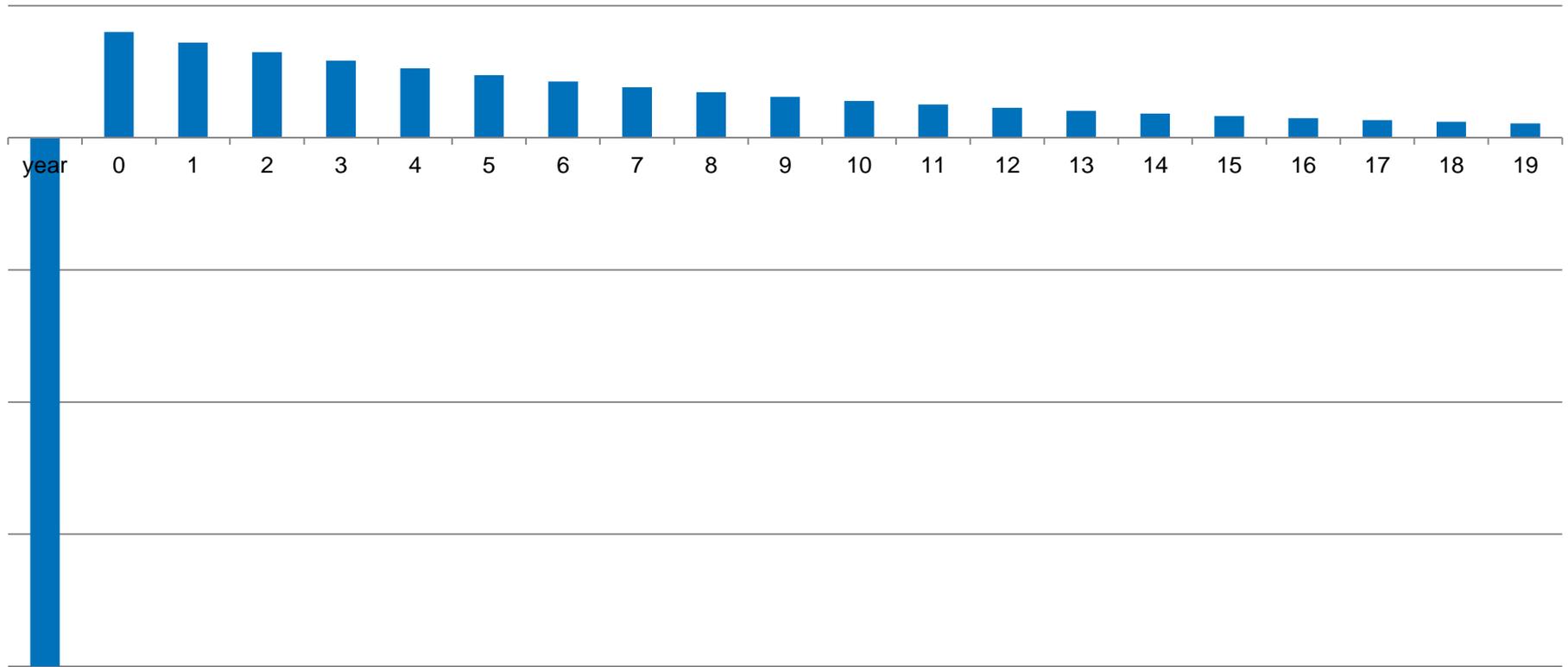
EVOLUTION OF CAPITAL
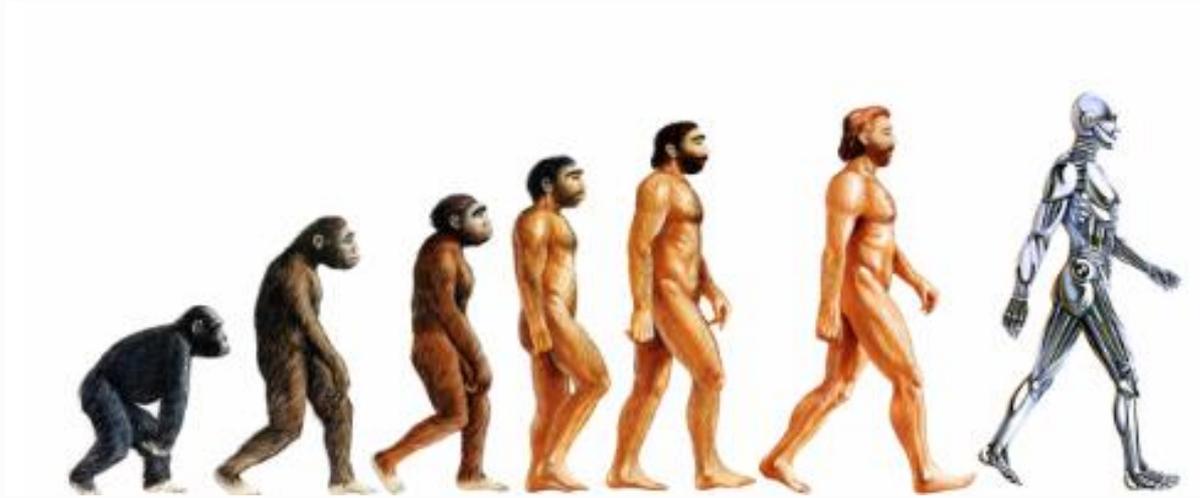
From the Willis Resilience Magazine

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Solvency Margin formula

- In a simple Solvency I world, the formula might look like:

SMSM (statutory minimum solvency margin)

$$= 4\% \text{ reserves } + 0.3\% \text{ sum-at-risk}$$

- This is not really "risk based"

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A more complex arrangement (Taiwan)

For non-life insurance enterprises, the scope of such risks include the following:

- R_0 – Related party asset risks;
- R_{10} - Non-related party asset risk non-equity type
- R_{15} - Non-related party asset risk equity type
- R_2 - Credit risks;
- R_3 - Underwriting risks;
- R_4 - Asset-liability matching risks; and
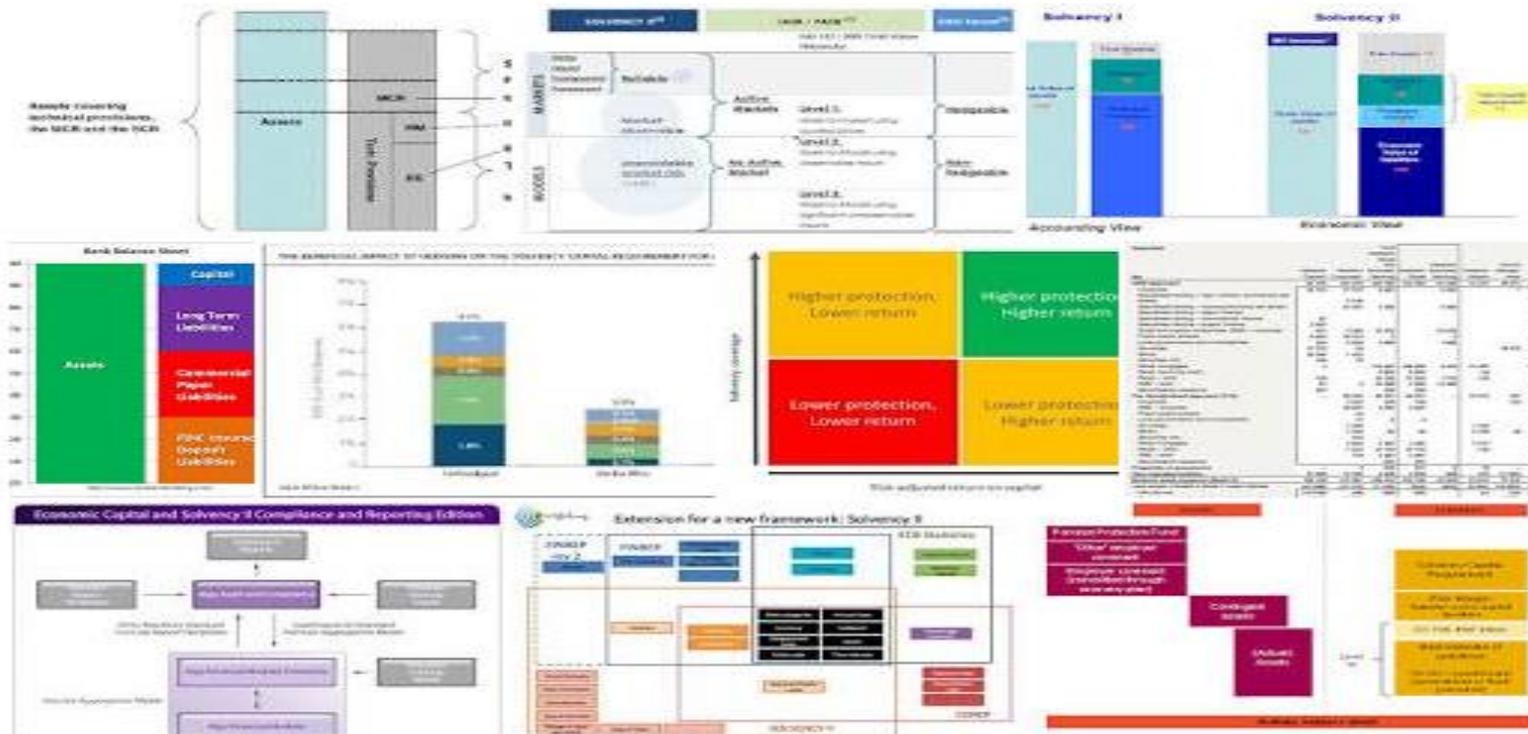- R_5 - Other risks

Total RBC calculated as follows:

$$\{R_0 + R_5 + \sqrt{(R_{10}+R_4)^2 + R_{15}^2 + R_2^2 + R_{3a}^2 + R_{3b}^2}\} \times 0.4$$

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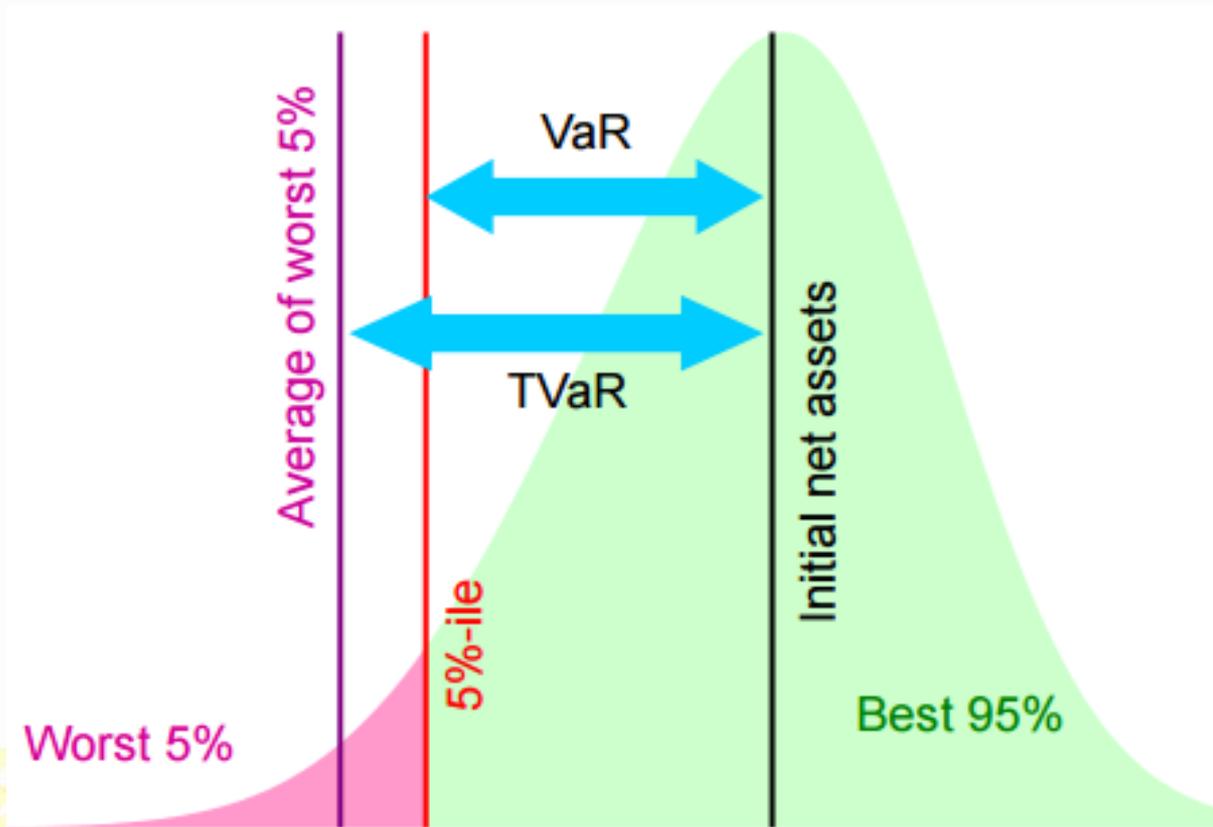
The Solvency II balance sheet
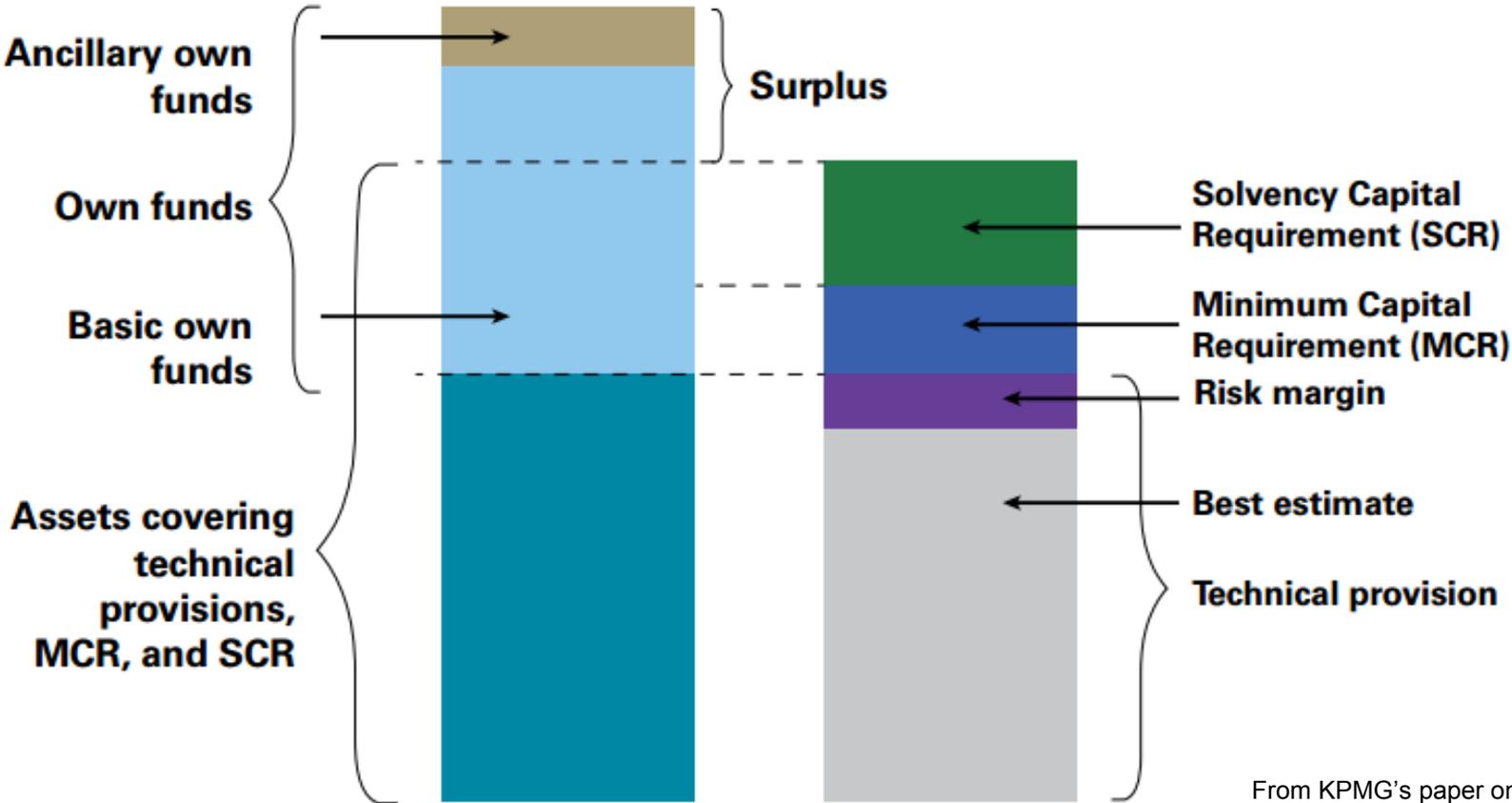
From KPMG's paper on Solvency II

Even 'economic' is subjective

… but at least there is convergence

But … how much capital?

- 1:200?
- In 1 year?
- Var vs TVar?
- Below zero or below expected?
- AAA? BBB?
- Post-event position?

"VaR vs Tail VaR Mindsets" by Kemp 2009

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PRACTICAL CAPITAL

Costing with Capital

Best Estimate Risk Premium

x (1 + margin for uncertainty)

vs

Best Estimate Risk Premium + Cost of Capital

where Capital is what is held because of the uncertainty

Reinsurance vs CoC

- Consider cat covers

- "We are strong enough to not need it"

- Compare 'cost of reinsurance' to the 'cost of capital if you don't reinsure it'

Reinsurance Financing

- Capital can be managed in many ways

- A loan is not capital management

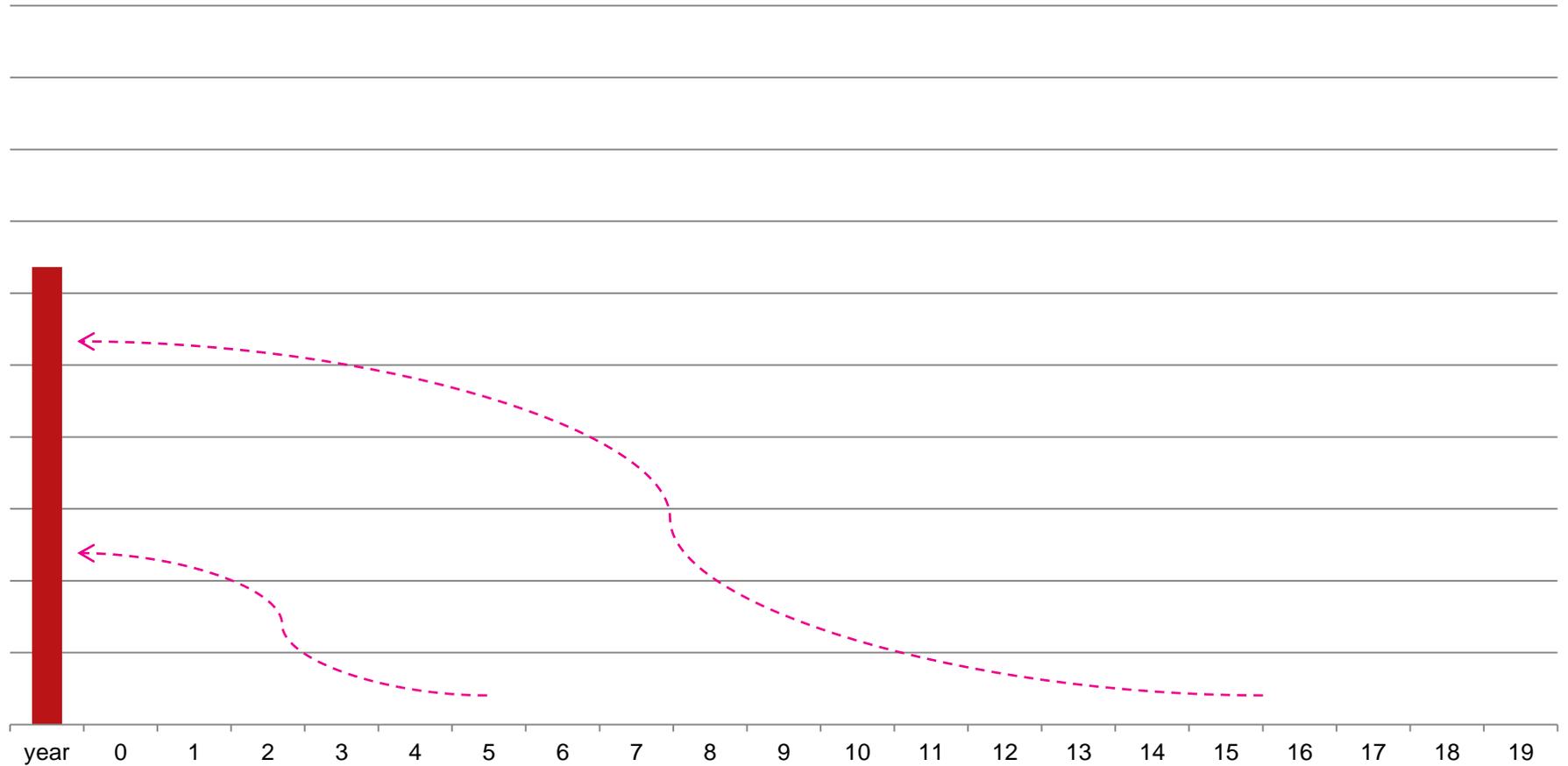- Fin Re can* increase assets without increasing liabilities

* depending on regulations

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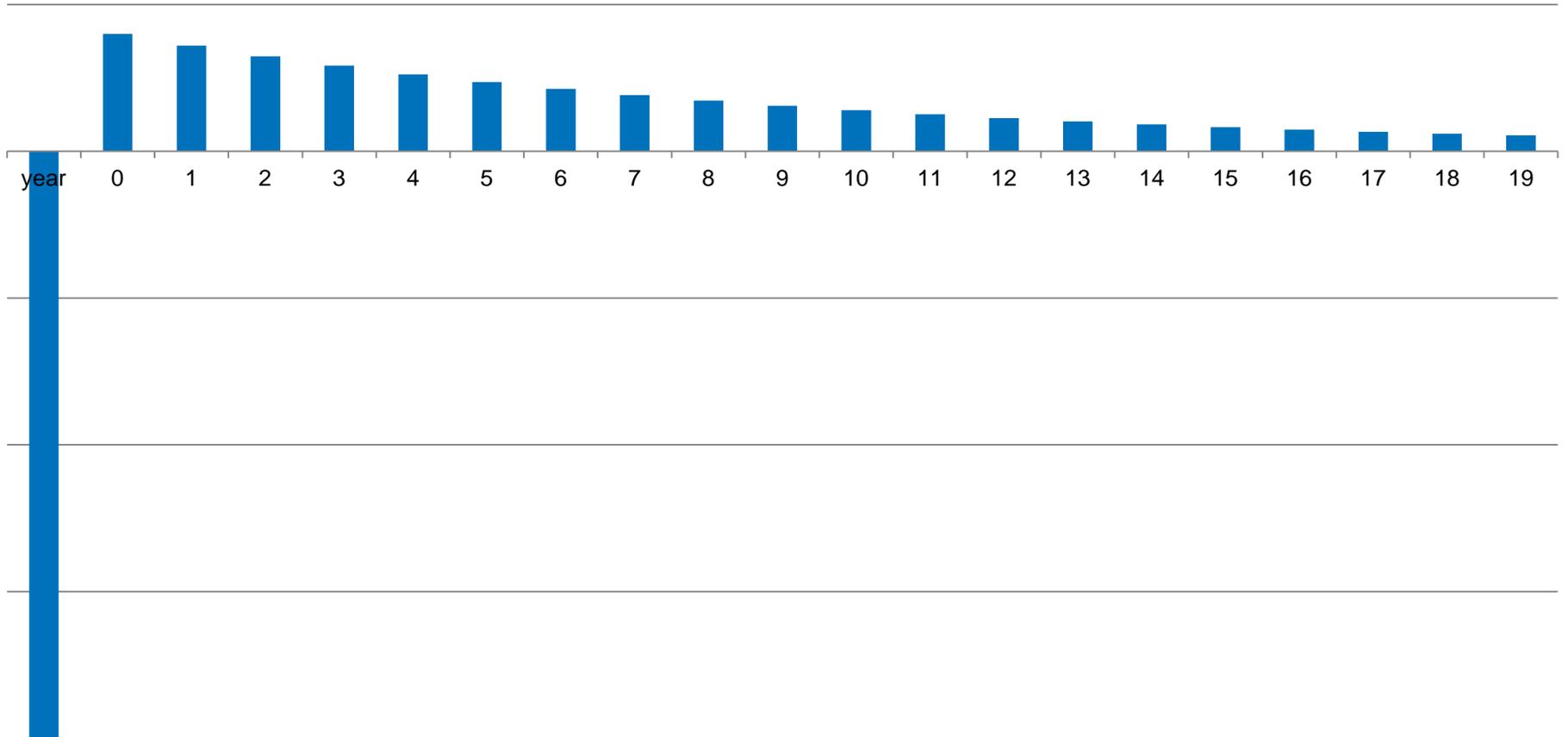COMPETENCIES
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'Margin' value

From a 'margins' point of view, a tranche of policies might generate surpluses like this:
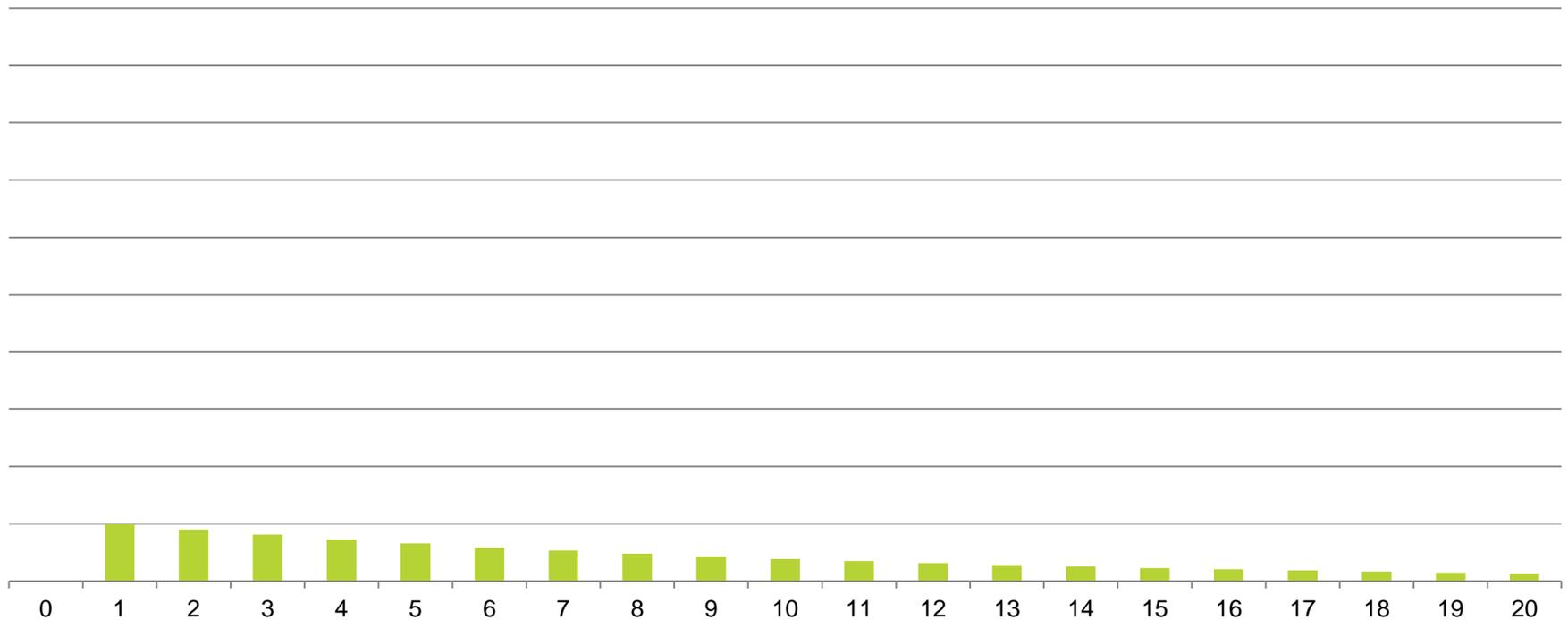
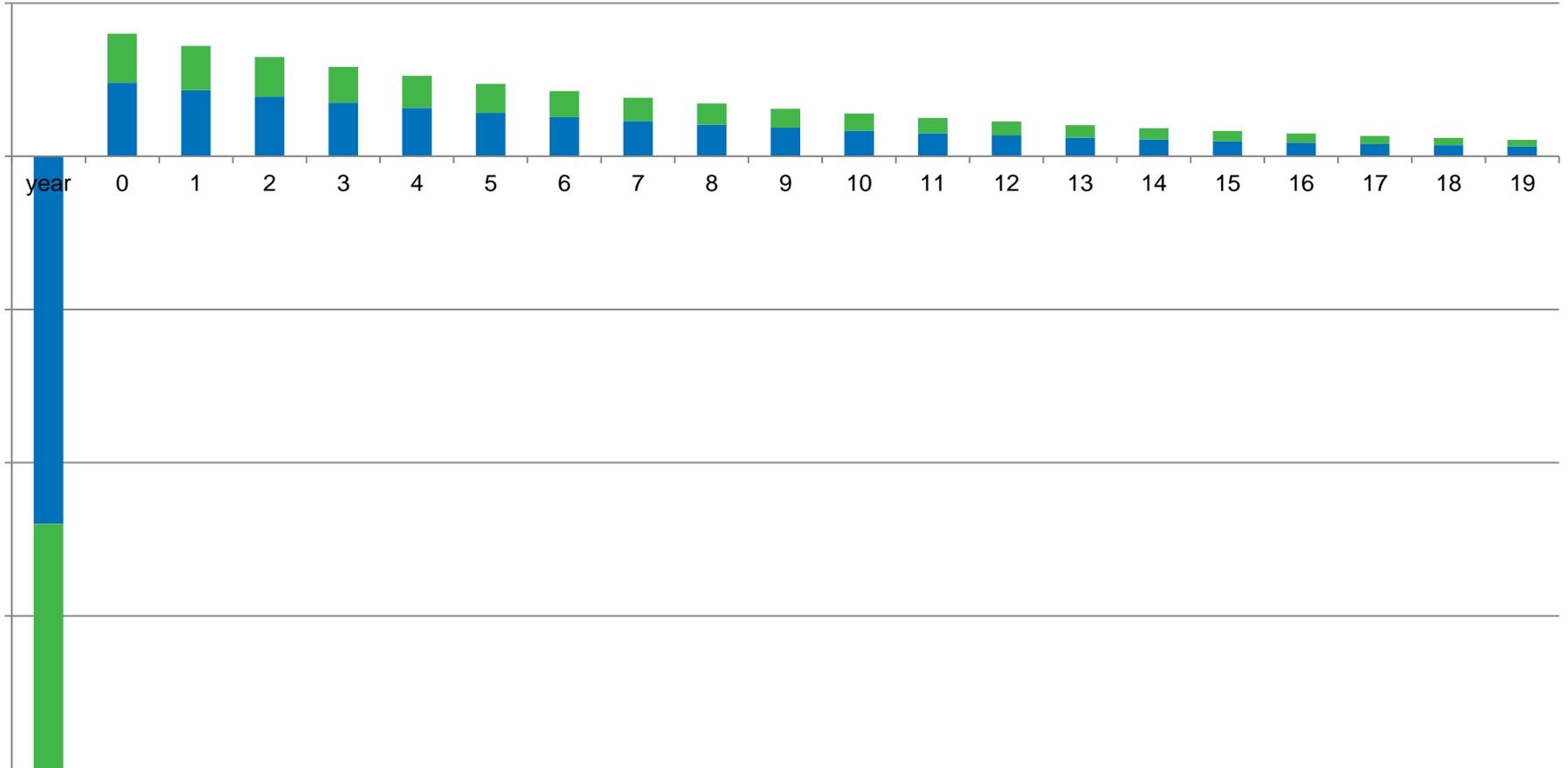# Actual value, as a present value

year | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

New business strain: problem ☹

New business strain: solved ☺

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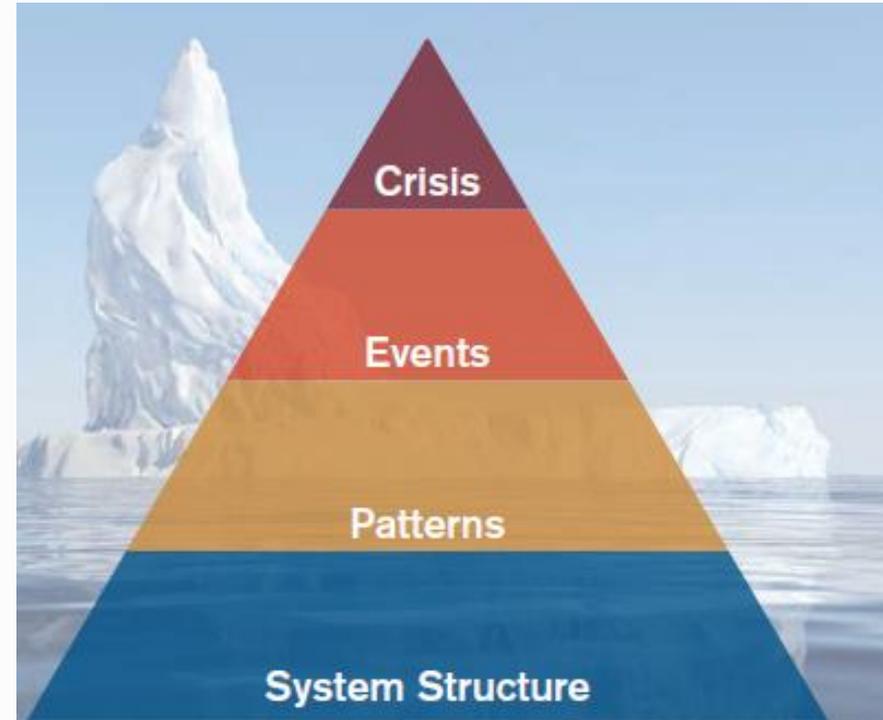
Risk Systems

- We solve what we see?

- The 'worst case' is key

- But volatility hurts too

Milliman Asia ERM Newsletter Feb 2014

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Conclusion

- Capital is just part of a complete risk framework
  - but it's a part that appears all over
- We need it all:
  - correct definition of risk appetite & capital
  - meaningful calculation of capital & CoC
  - manage your capital
  - reinsurance to optimise risk, volatility & price
- **Questions?**

QUESTIONS

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