

# Risk Measures: Making the right choice

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# Introduction

These slides frame the risk appetite discussion using this paradigm.

- Choosing the right risks and risk measures is vital as ‘what gets measured gets done’.
- Risk appetites can then be overlaid, and have more impact if the underlying metrics are more meaningful and relevant.
- Risk translation is required as a link between different measures, as they should be custom built and by definition are not fit for all purposes.

Consequences of inappropriate risk measures:

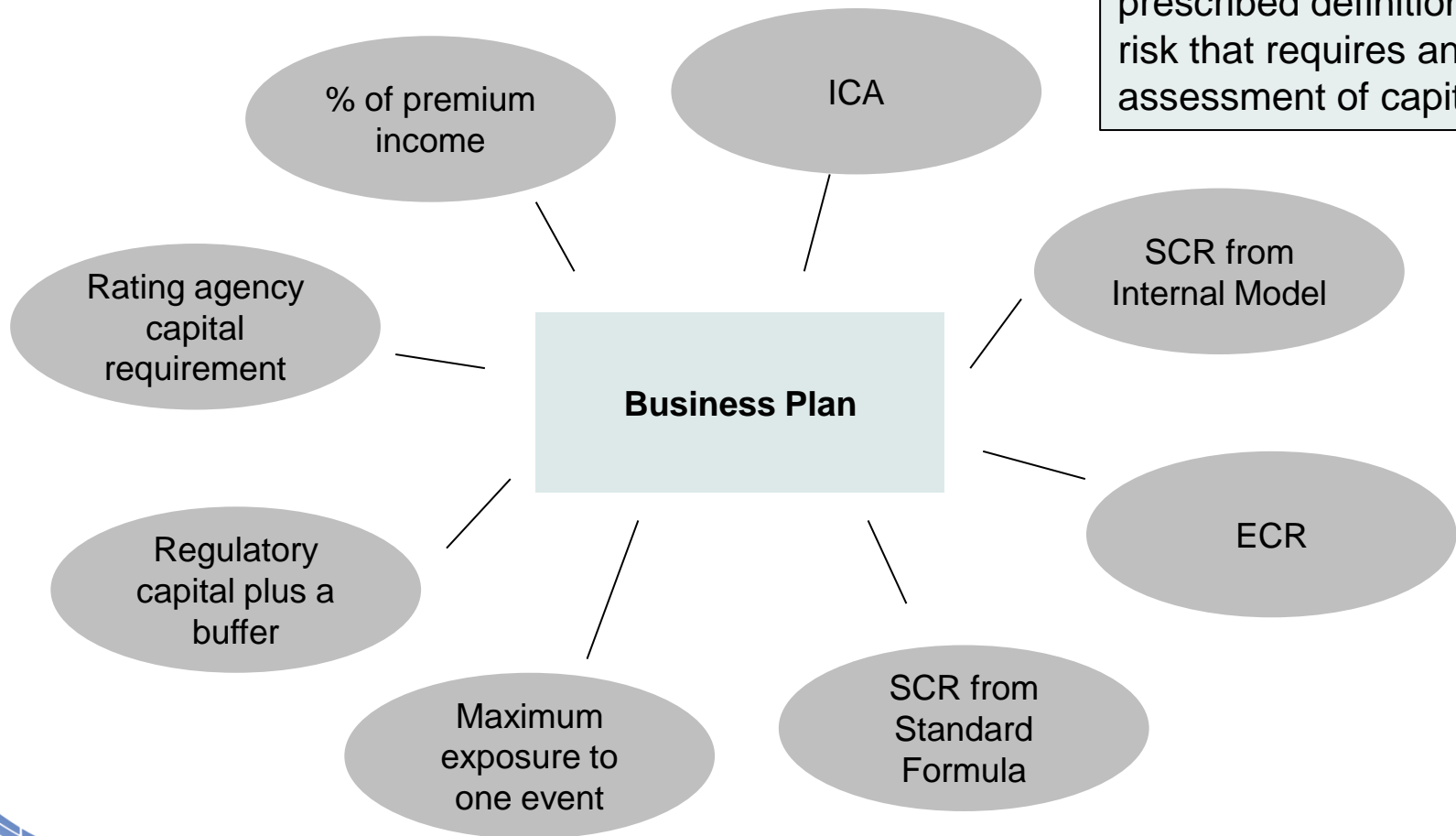
- Risk appetite frameworks lack bite.
- There is inappropriate risk selection and risk decision making due to misleading metrics.
- Risk measures may not be workable even if measuring a significant risk.

This is as relevant to Key Risk Indicators (KRIs) as to Risk Appetites.



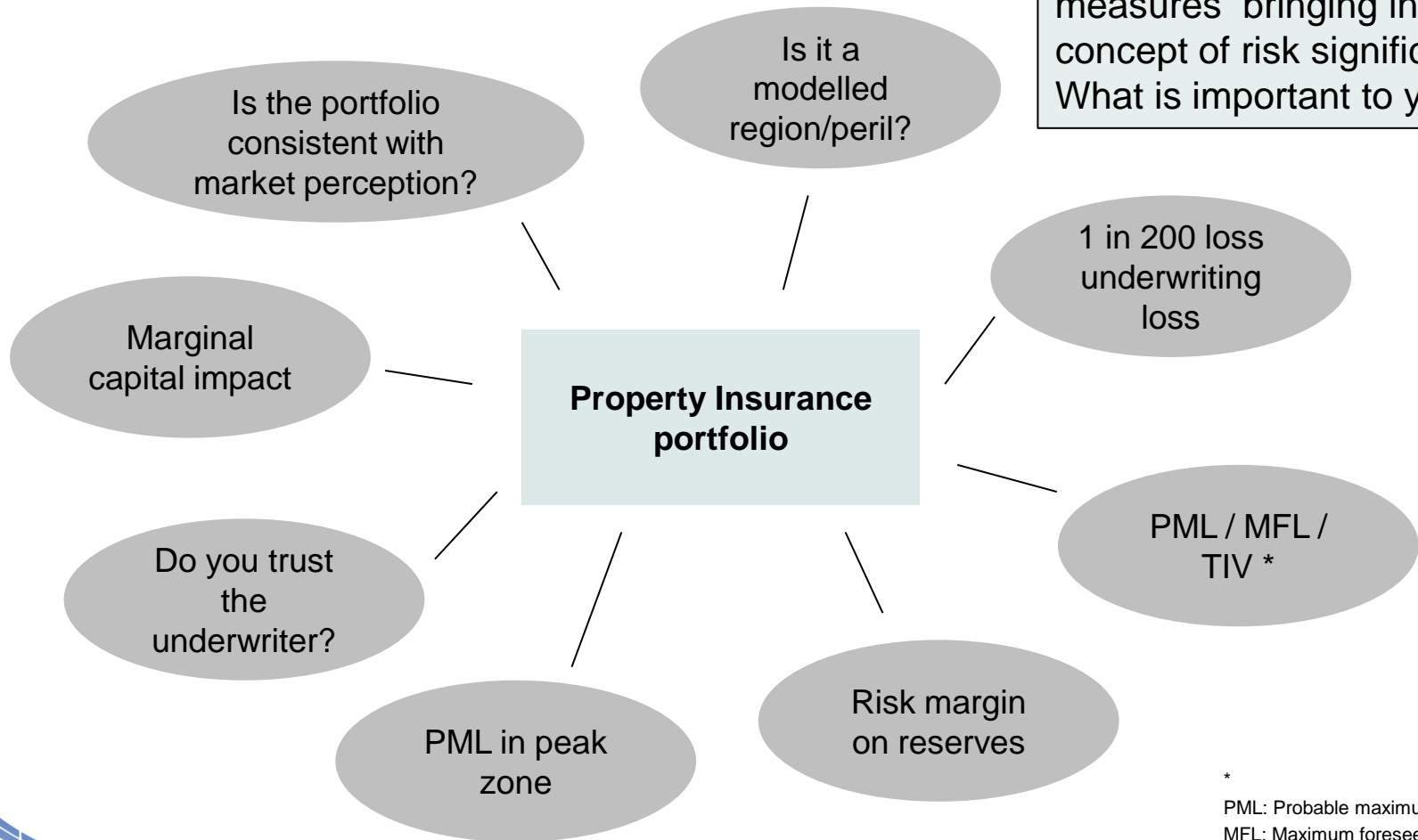
# Multiple risk measures

**Key point:** The below are mostly quantitative risk measures given a prescribed definition of risk that requires an assessment of capital.



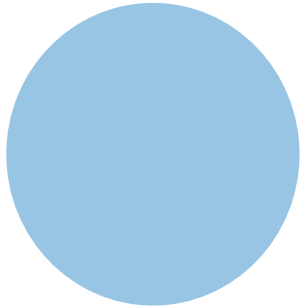
# Multiple risk measures

**Key point:** The below introduces more qualitative measures bringing in the concept of risk significance. What is important to you?



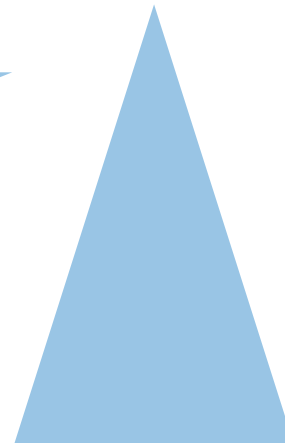
\*  
PML: Probable maximum loss  
MFL: Maximum foreseeable loss  
TIV: Total insured value

# Multiple risk measures



Example with shapes....

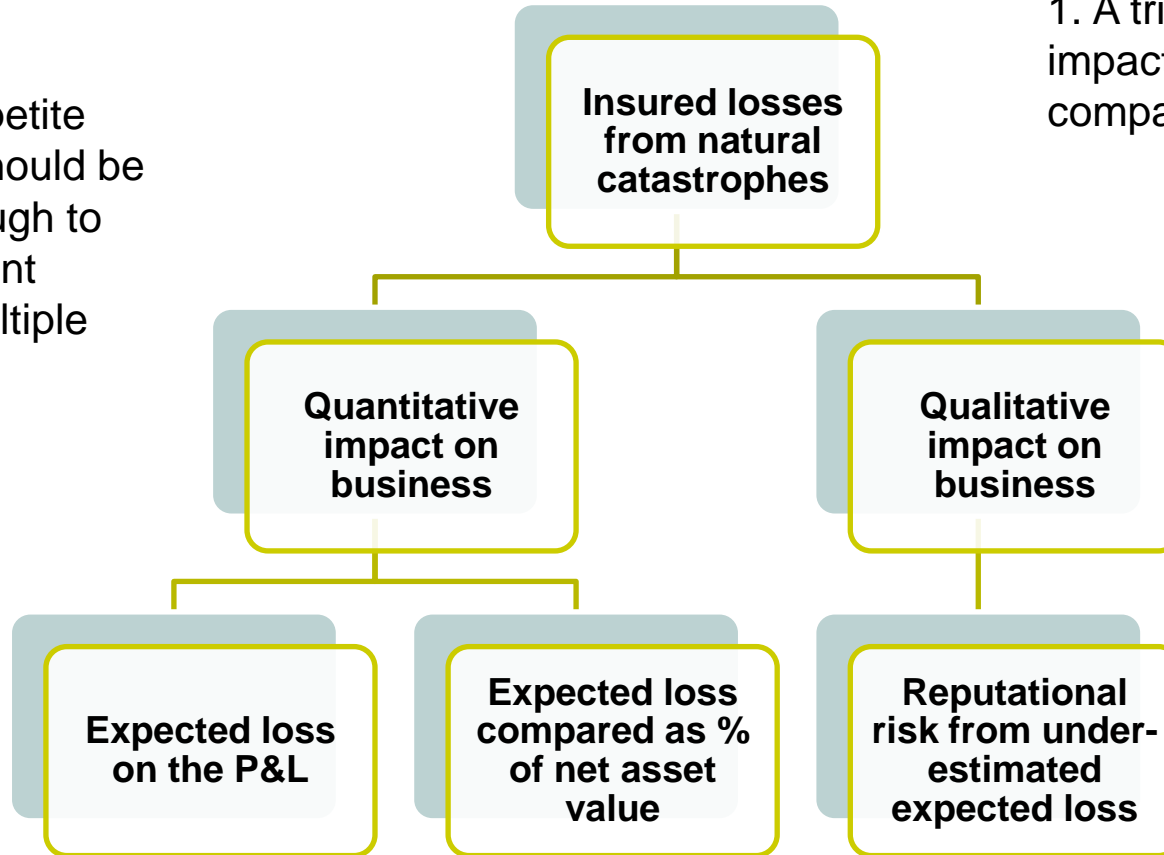
- If riskiness links to the width of the shape, there is one clear and definitive risk measure.
- If riskiness links to how much I like the shape, multiple risk measures remain:
  - I don't like things that look scary
  - I don't like objects that point downwards



# Choosing the right risk measure

2. Risk appetite systems should be broad enough to test an event against multiple metrics.

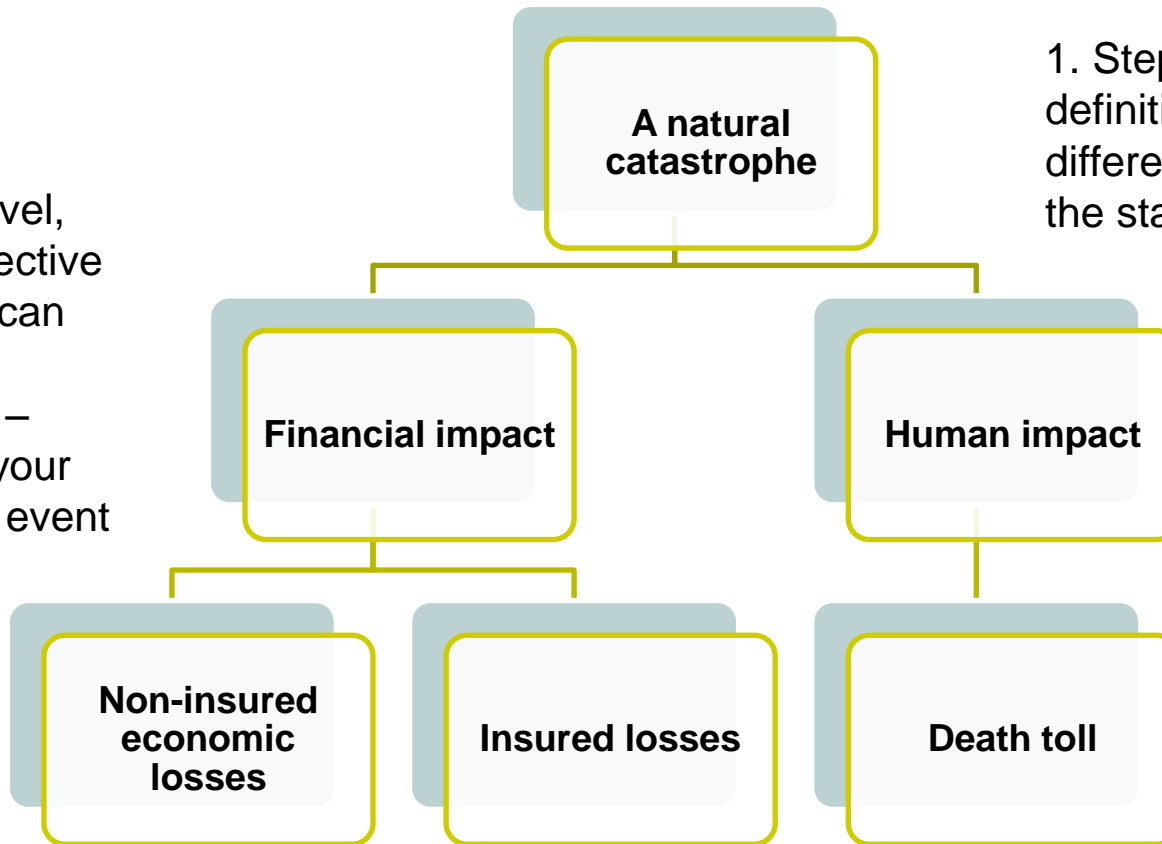
1. A trigger event can impact insurance companies differently



**Key point:** By brainstorming an idea, you will think of more measures than you can use. Prioritisation is required.

# Choosing the most significant risk

2. At this level, your perspective of the loss can change completely – redefining your view of the event



1. Stepping back, the definition of the risk is different depending on the stakeholder

**Key point:** Be aware that there will inevitably be confusion between choosing the right 'risk measure' and choosing the right 'risk to measure'.

# Risk measure translation

Risk measures are everywhere and designed for different purposes.

- The right risk measures depends on purpose.
- Many excellent risk measures already exist within developed businesses and should be utilised.
- A common example is the vertical translation issue between top down and bottom up risk appetites, but there are also horizontal translation issues.

What guidelines are there for choosing risk measures?

- It would be sensible to remove excess risk measures. Too many measures may over-complicate an issue.
- Try to consider unintended consequences for each selected measure.
- Is required capital the best high level risk measure? Probably as it links to regulatory capital as well as being a 'common language' for all quantifiable risks.



# Risk measure translation

First stakeholder view	Second stakeholder view	Issue	Options
Institutional investors and employees may care about the long term where short term volatility and performance is unimportant.	The executive suite of a company may be focused on short term objectives linked to incentive plans.	Leads to accusations of short-termism and judgements that aren't necessarily best for shareholders.	Translation is likely to be difficult as this is more than just a quantitative problem. Firms need to be clear on priorities and align risk appetites accordingly.
Underwriter uses limit to manage risk in a portfolio as it is simple, timely and intuitive.	Actuary uses 1 in 200 to manage risk in a portfolio as it aligns to top-down measures, and allows for probability of loss.	These two measures are not commonly translated to the other leaving portfolio risk management in silos.	It is possible to create some notional translation mechanisms that equate the two risk measures.
Economic basis is becoming prevalent in capital regimes like Solvency II and some accounting regimes. Focuses attention on real long term value.	Reporting basis is the disclosed and most common accounting basis where distortions may exist due to accounting issues. This can prejudice some decisions.	Both basis are fundamentally important but for different audiences and purposes.	It may be necessary to maintain the reporting of both basis, such that decisions factor in both constraints.