

Second Enterprise Risk Management Seminar

ERM 2010



Institute of Actuaries of Australia

– It's All About Opportunity

AMORA JAMISON HOTEL, 11 JAMISON STREET, SYDNEY

Tuesday 21 September 2010

Risk Wargaming Panel Discussion

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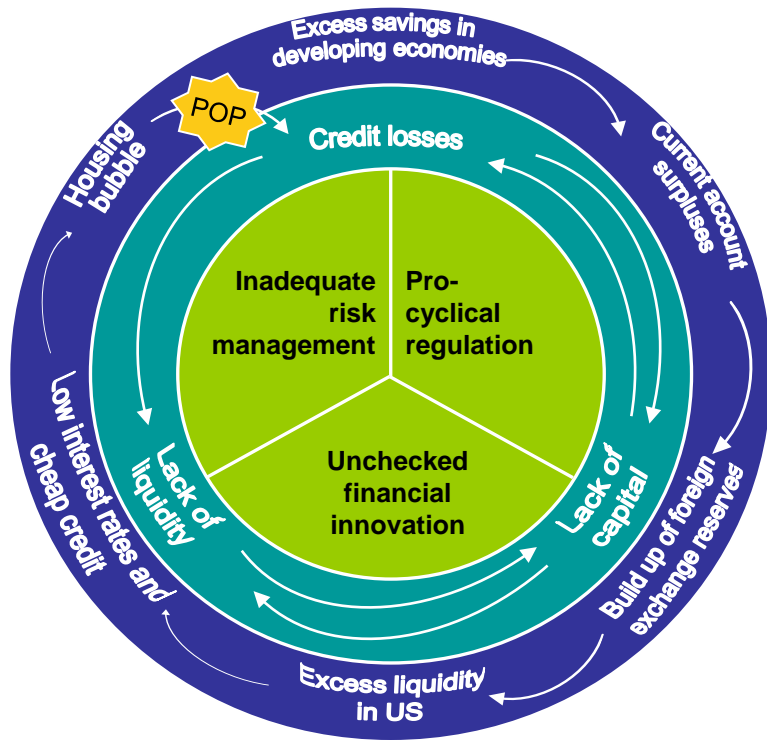
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Risk wargaming – road testing your risk appetite

Section 1

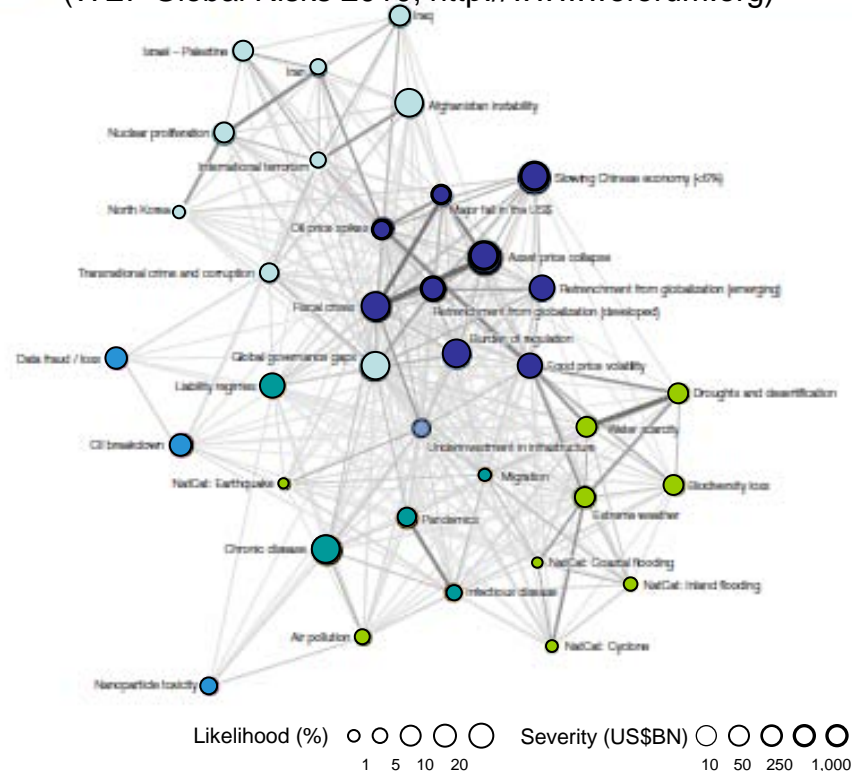
Following the GFC, there has been a recognition that the risk landscape facing Financial Institutions is significantly more complex than previously understood

Anatomy of the GFC



Risk Interconnection Map 2010

(WEF Global Risks 2010, <http://www.weforum.org>)



Source: World Economic Forum 2010; Oliver Wyman analysis

Domain: ■ Economics ■ Geopolitics ■ Environment ■ Society ■ Technology



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The GFC, like all dislocations before it, has demonstrated how good management practices will differentiate between the best and worst performers

	Best performers	Worst performers
Strategy and Communication	<ul style="list-style-type: none"> • Sharing of information more effectively across the organisation • A firm-wide plan to manage (in this case reduce or hedge) exposures 	<ul style="list-style-type: none"> • Decentralised businesses with different approaches/strategies that are not well understood at the Group level • Limited communication between business lines, senior managers and senior executives about the firm's risks
Expertise and Internal processes	<ul style="list-style-type: none"> • In-house expertise for independent asset-quality assessments • Skepticism of rating agencies' assessments of complex structured credit securities • Culture of challenging/testing current business processes and approaches 	<ul style="list-style-type: none"> • Lack of internal processes to challenge valuations • Lack of internal valuation models • Relying too passively on external views of credit risk from rating agencies and pricing services
Firm-wide Controls and Analysis	<ul style="list-style-type: none"> • Aligning business and finance functions more closely with risk management processes, incorporating information from all businesses in global capital/liquidity planning 	<ul style="list-style-type: none"> • Weaker controls over potential balance sheet growth and liquidity
Risk measurement processes and systems	<ul style="list-style-type: none"> • More adaptive risk measurement processes and systems • Use of a wide range of risk measures 	<ul style="list-style-type: none"> • Dependent on specific risk measures incorporating inadequately probed assumptions that proved to be wrong

Getting it wrong is not an option for the management; an honest assessment of your capabilities is required...

Key questions you need to be able to answer

1

Have you been able to react to changing market conditions, as and when you wanted to?

Important to know where there are blockages in the business and of what nature

2

Can you identify and examine likely or stress scenarios? Furthermore, can you deal with them?

More than pure risk measurement, there is a need for active risk planning

3

Do you receive all the information you require to manage risks and potential weak spots in your business?

Necessary to get accurate and timely reporting, outside the regular cycle

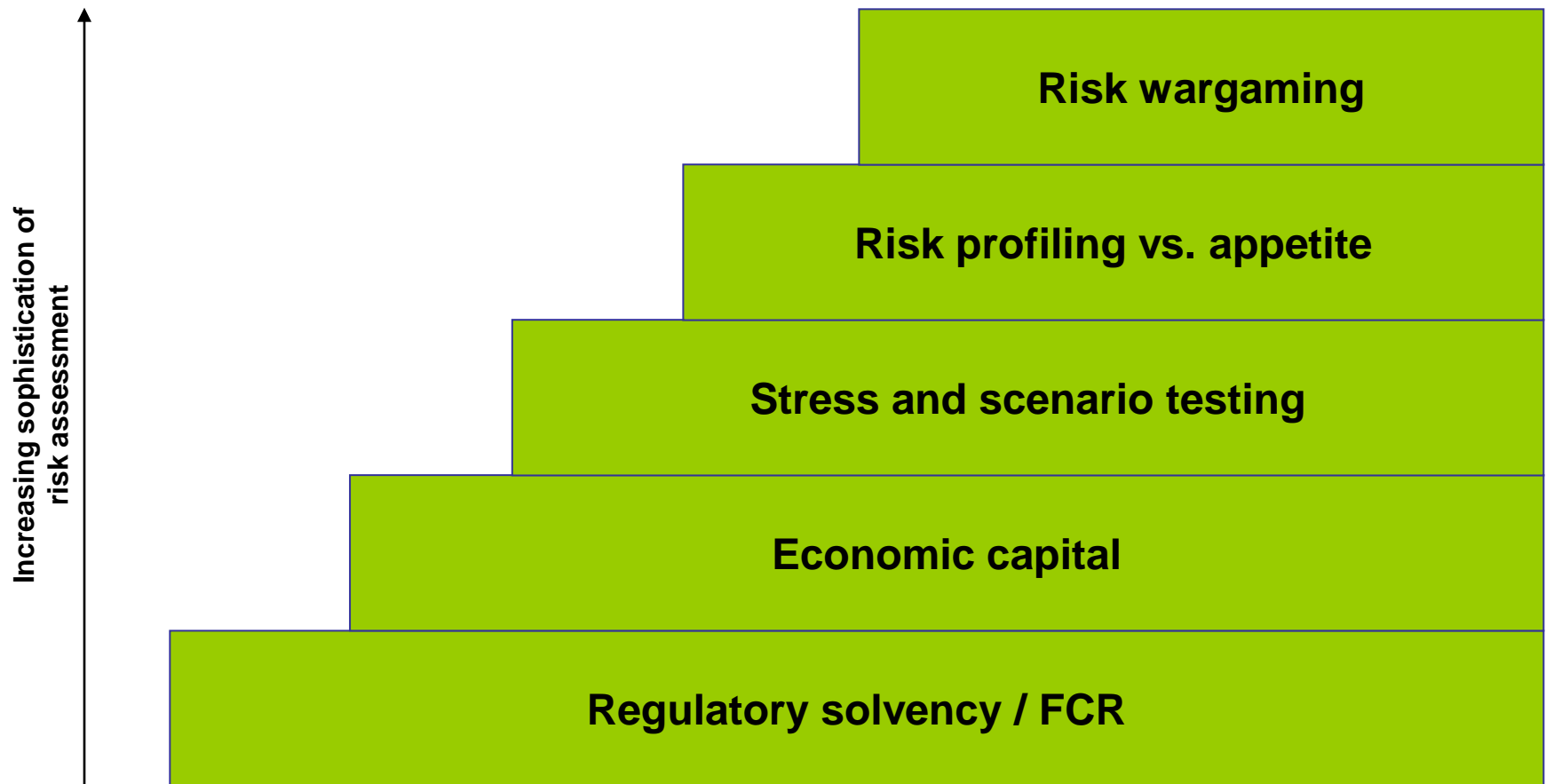
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Does management have a clear idea on their response capabilities and how they would react to market dislocations?

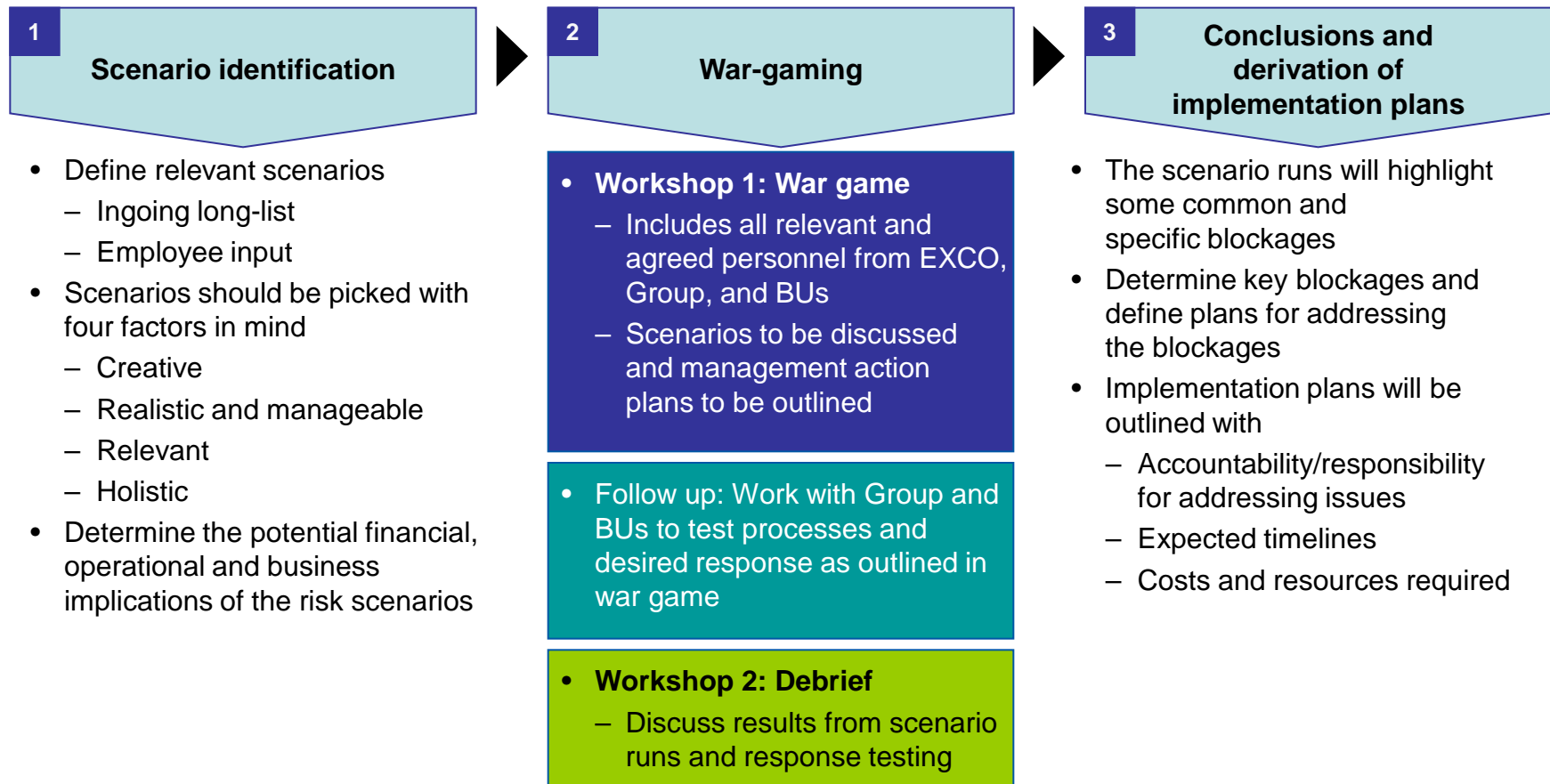
Actions in extreme situations will be very different to day-to-day activities

... particularly if you want to take advantage of the opportunities available

Risk assessment practices have advanced considerably in the last decade but many are still struggling to find a balance between cost and sophistication



Risk wargaming extends the standard scenario analysis to understand your ability to manage risks actively



Risk wargaming drives into the heart of the business, focusing on capabilities at all levels

What makes it work?

- Sponsorship and active participation by senior management
- Involvement of business *and* functional lines of the organisation to identify broad impact and implications of risk scenarios
- Feedback to executive team on difficulties of putting response into action
- Development of recommendations for changes to make company more agile and responsive

War game,
sponsored
by senior
management

Why undertake a war game?

- Test the quality of **mitigation strategies** in a “crisis” situation
- Identify any bottlenecks to fast and robust **communication of risk exposures**
- Ensure that the **roles and responsibilities** in a crisis situation are agreed and understood
- Highlight any weaknesses in the organisation’s **ability and speed of reaction**
- Develop a **stronger risk culture**, where the business and organisational interconnectedness of risk is better understood

Warning: Identifying and mitigating all possible risks is impossible and impractical even with active risk management – a robust control environment remains essential

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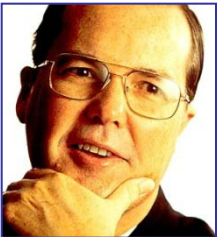
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Risk scenario analysis – LIVE!

Section 2

Introducing our panel of experts...

Tony Coleman
The CRO



- Tony Coleman is a corporate adviser and company director and a former President of the Institute of Actuaries of Australia
- He was the Chief Risk Officer & Group Actuary of Insurance Australia Group (IAG) for 8 years until 2008 and a corporate advisory partner of PricewaterhouseCoopers for 15 years prior to joining IAG

Robert Daly
The Chief Actuary



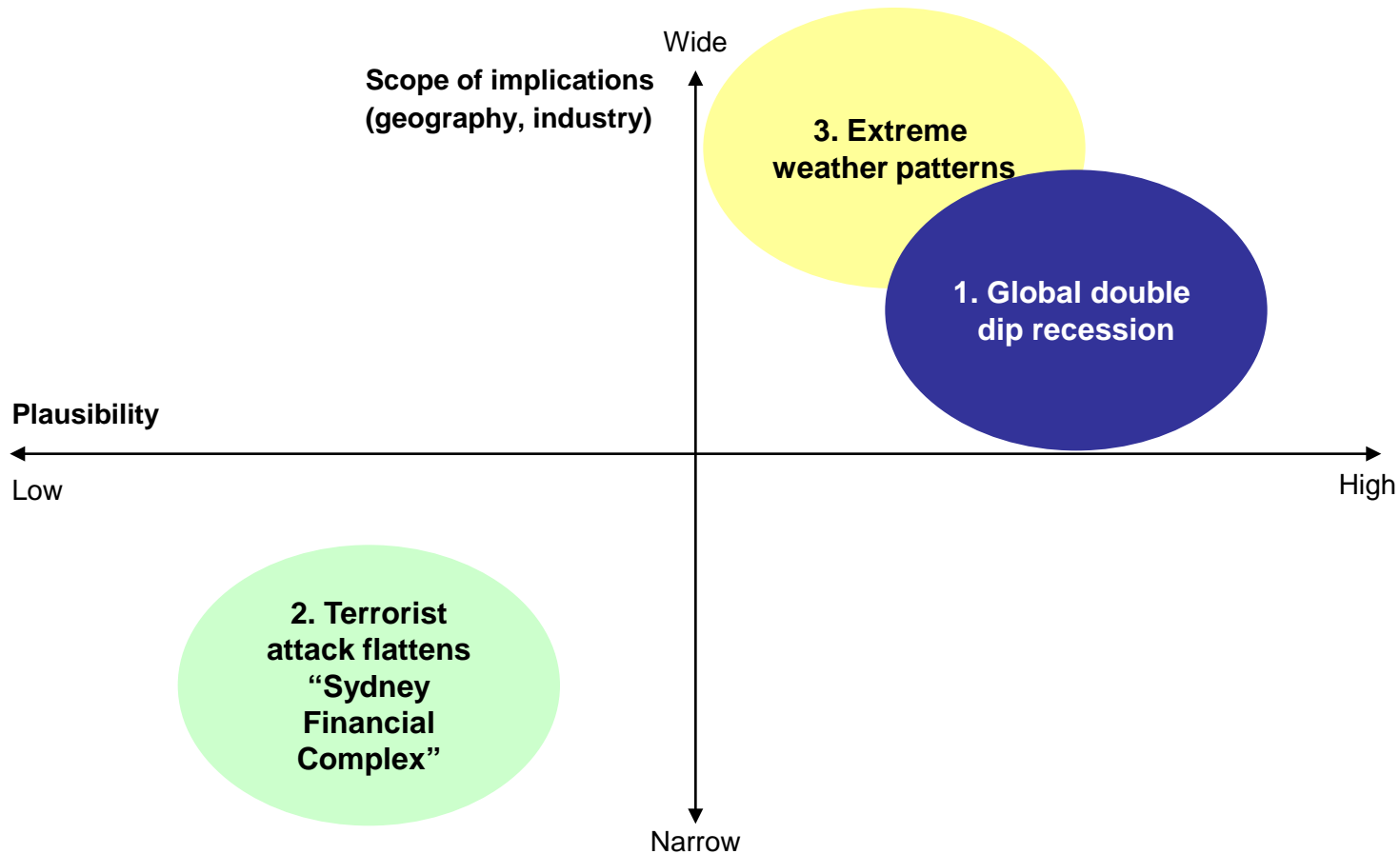
- Rob is the Chief Actuary at TOWER Australia, the largest independent life insurer with more than \$1 BN in in-force premium
- Rob has extensive experience in risk management both from his previous career at Tillinghast and at TOWER where he enjoys a close working relationship with the risk management team.
- Outside of work, Rob puts his risk management training to practice with occasional mountain biking and snowboarding

Andrew Hinchliff
The Risk Manager



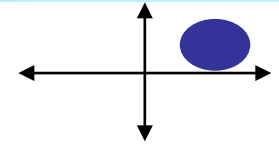
- Andrew is a Managing Director and head of Structured Sales within Fixed Income Currency and Commodities at Goldman Sachs
- Andrew has focused on Risk Management Solutions for corporate and financial institutions since joining Goldman Sachs in the New York office in 2001

We have chosen three risk scenarios, sourced from distinct risk categories and leading to a diverse set of implications



The panel will discuss the potential implications of each scenario to a typical insurance/wealth business

- What are the immediate financial and business consequences of this scenario?
- What are the broader market/economy implications that could have second-order implications?
- How would your organisation respond to such a scenario?
 - Reporting and information
 - Ex-ante business steering
 - Ex-post management response
 - External communication
 - ...
- What capabilities would you need in place to execute your response, and what blockages would you foresee?
 - Organisational structure and governance
 - Management and reporting processes
 - IT systems and data
 - Risk-aware decision-making
 - ...



Scenario 1: Global double dip recession

A possible economic scenario with a broad and severe scope of implication

Cause triggers

Reduced consumption by developed economies

Slower Chinese economic growth

Weakened fiscal position of developed economies

Sustained downbeat investor confidence

Scenario description

- Drastically lower than historic global growth
 - Global growth <2% pa
 - China's growth slows to <6% pa
- G20 debt-to-GDP increase to >100%
- Australia does not escape a prolonged downturn
 - Low GDP growth (<2% pa)
 - High unemployment (>8%)
 - Interest rates <2%
 - House price stagnation
- Global capital market chaos returns
 - Increased equity market volatility
 - Blow-out in credit spreads
- Global monetary impact of >US\$1 TN

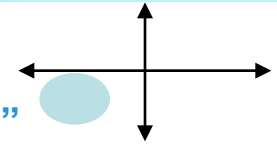
Implications

Macro implications

- Increased regulation and protectionist measures
- The Eurozone could disintegrate
- (Re-)nationalisation of banking sectors worldwide
- Increased restrictions on capital and liquidity

Model Firm implications

- Acute solvency risk with depreciating assets and growing liabilities and recapitalisation options are limited
- Increased lapses across all product categories
- Growth stalls across the board while pricing is challenged



Scenario 2: Terrorist attack flattens "Sydney Financial Complex"

An extreme, localised event affecting a concentrated industry but with severe knock-on effects

Cause triggers

Ongoing antagonism by extremists towards the western world

+

Effective anti-terrorist measures in traditional target countries

Extremist local politicians/government come to power locally

Scenario description

- A 9-11 style bombing of a high-rise office complex in the Sydney CBD
- The buildings are completely destroyed and 50-70% of the occupants die
- The towers' main tenants are
 - A big-four bank and an emerging foreign bank
 - Two major FS-focused professional services and consulting firms
- Estimated direct losses
 - Lives lost: 3,500-5,000
 - Life insurance claims: \$1.2-2.5 BN
 - Property and liability insurance claims: \$6-10 BN
 - Business revenue loss in first year: \$1-1.5 BN

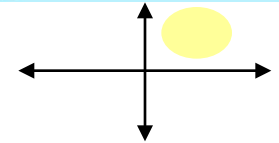
Implications

Macro implications

- Short term, localised business disruption and economic loss
- Severe volatility on investment markets
- Heightened security alertness and measures, leading to further erosion of privacy for citizens
- Increased national security spending

Model Firm implications

- Business disruption if the Model Firm is directly affected
- Increase in direct life, property claims with long term impact on pricing...
- ... but increased awareness about threats could boost insurance sales in the long term
- Falls in asset values and increased volatility of asset prices



Scenario 3: Extreme weather patterns

A long term, universally applicable scenario leading to strategic implications and decisions

Cause triggers

Natural cyclical climate variations

Human tampering with nature environment (e.g. building dams)

Rapid increase in energy use driven by developing economies

Reduced climate change mitigation activity due to current crisis

Scenario description

- Australia's average temperature rises by up to 2° above 1990 levels in the next 20 years, and up to 6° in the next 60 years
- Prolonged droughts reduces agricultural output
- Increase in intensity and frequency of bushfires
- Reduction in fresh water supply
- Rise in sea levels by ~1m over the next 30-60 years
- Increase in cyclonic activity in heavily populated areas e.g. south Queensland

Implications

Macro implications

- Destruction of the Great Barrier Reef and coastal environments
- Increase rate of urbanisation
- Long term impact on GDP of ~8%
- Mass property losses from rising sea levels (A\$50 BN for 1m rise)
- More frequent catastrophes e.g. \$10 BN cyclones

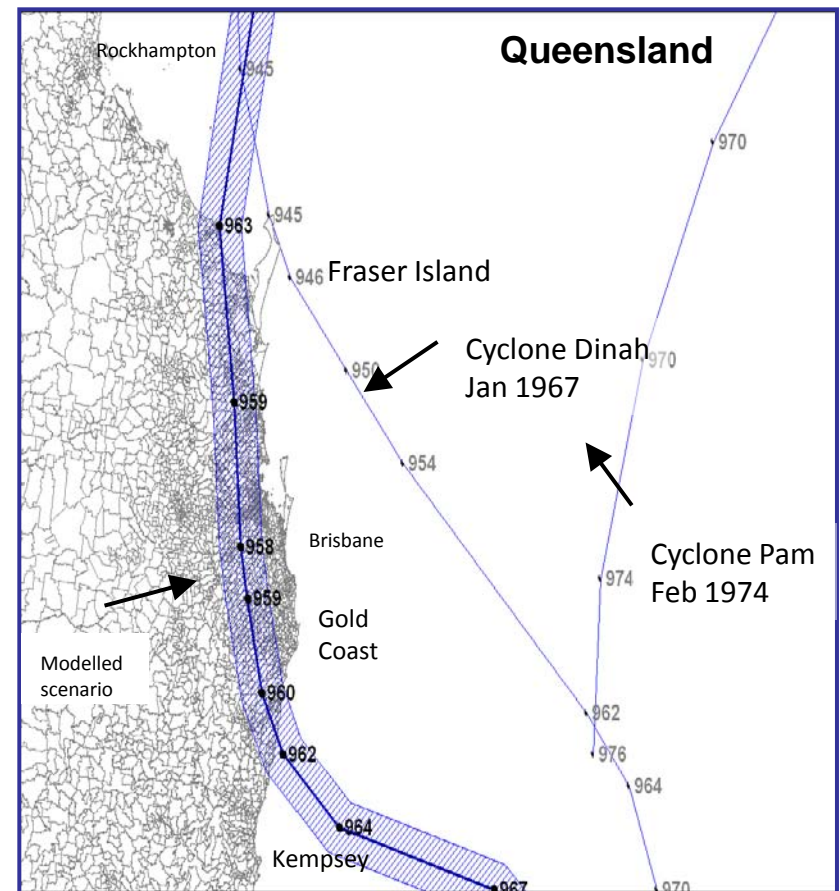
Model firm implications

- Increased catastrophe claims and consequently risk premiums
- Higher health costs due to more accidents during disasters/climate related illness
- Insurers face new risk types (e.g. energy scarcity) and require new risk models and management tools (e.g. carbon credits)

Cyclone Risk under Climate Change Scenario

- Scenario
 - Cyclone tracks along coast, over land
 - Not necessarily hitting the most populated areas

- Under the area of max winds
- (i.e. 30km either side of path)
 - Population: 1,633,000
 - Number of occupied dwellings: 610,000
 - Total domestic building and contents insured under path \$152 BN



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In summary...

Risk scenario analysis is a key capability in moving risk management from compliance to ERM

