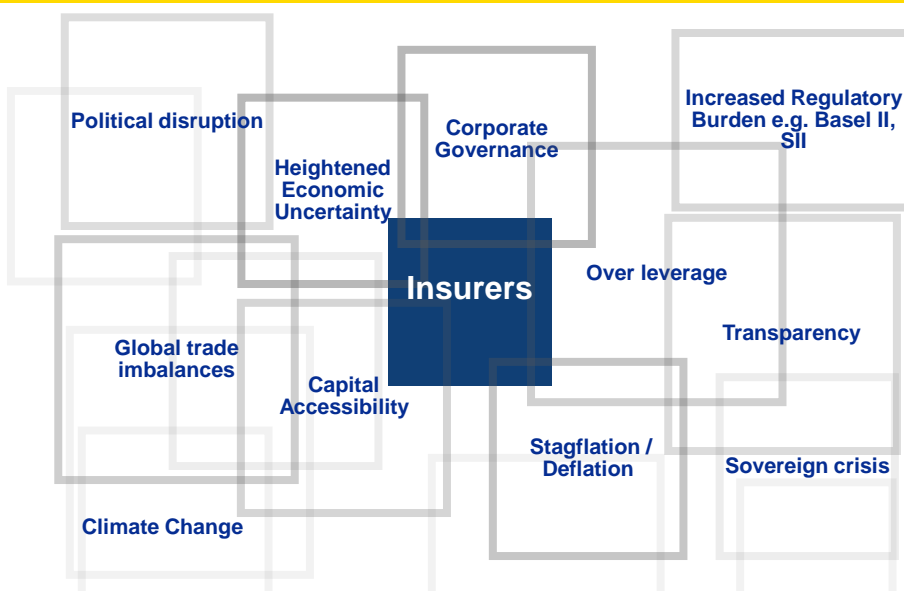


A CRO's Perspective

Using risk management to drive shareholder value in an uncertain world

Robin Spencer, Group Chief Risk Officer, Aviva plc

Headwinds stronger now than ever ...



Cross border business



Across Europe

- Delivery of greater harmonisation across Europe
- EIOPA and College's role will be to increase harmonisation through internal model

Beyond Europe

- With Solvency II perceived as a gold standard it is unclear how other countries will respond – potential Asia split
- Critical other markets are given sufficient time to meet new gold standard

UK Regulatory Change



20th June 2011

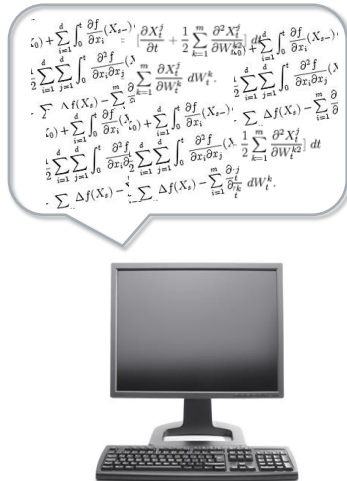
- FSA migration to PRA/FCA
- Forward looking and judgement based
- “Ladder of intervention”
- Business Model assessments
- Financial Strength assessments
- Risk Management & Governance assessments



Solvency II : are you ready?



- Internal models
- Risk management framework
- Business Impact assessment
- Board awareness and training
- Embedded-Use



SII ... impact on industry yet to be determined



Remaining Uncertainties

Final impact on industry yet to be determined

Remaining Challenges

(i) Timing

- Implementation in parallel with development of the rules

(ii) Technical

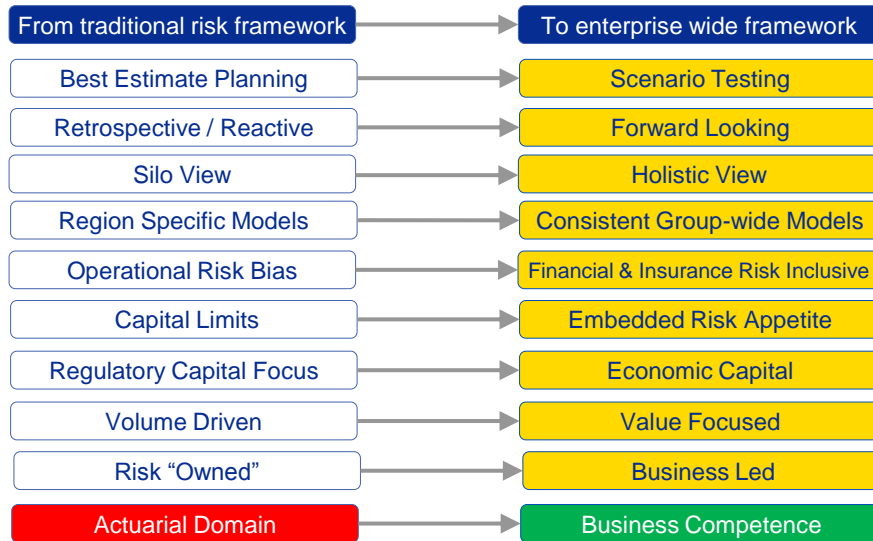
- Uncertainties remain
- Supervisory requirements

(iii) Implementation

- Some practicalities ...



The new world of risk management



7

Risk Identification

Looking Back



Decision Processes

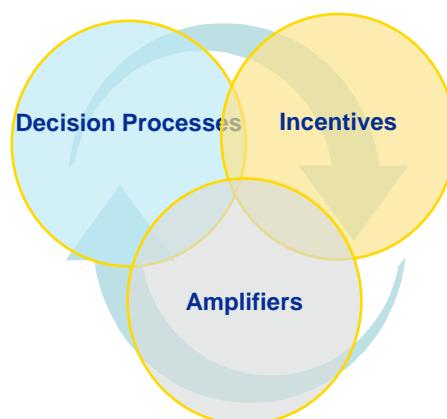
- Unaware of risk and its contagion
- Unclear articulation of risk tolerance and accountabilities
- Ill prepared to withstand stress scenarios
- Inability to manage risk adjusted returns

Incentives

- Based on annual returns which incentivise risk taking behaviour

Amplifiers

- Leverage



Values contributed to the financial crisis and are influenced by the event



Risk Identification

Looking Forward



... where seemingly independent risks collide resulting in **risk contagion**

Recent examples:

- From subprime to credit defaults to illiquidity to financial crisis
- From Japanese earthquake to tsunami to nuclear disaster to ...

Risk contagion

Japanese earthquake/tsunami/nuclear disaster and financial impact



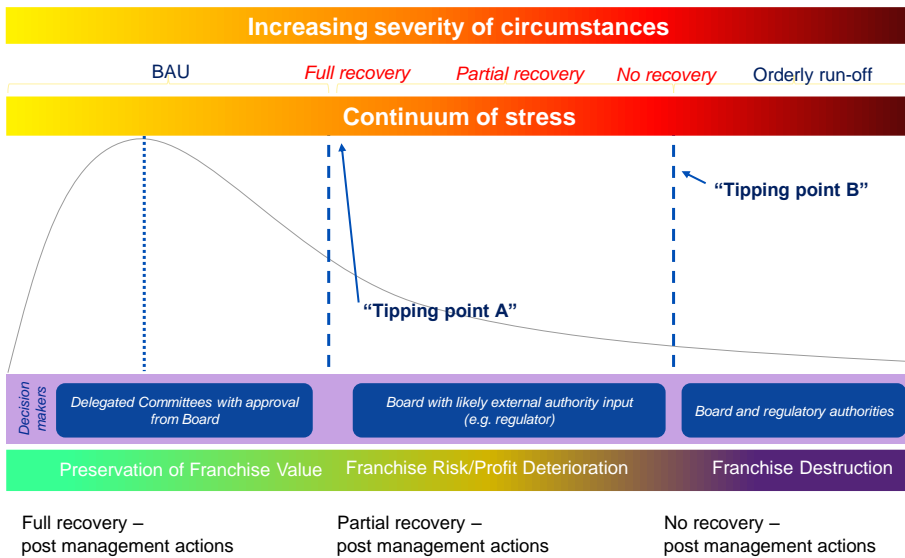
- Magnitude 9.0 earthquake struck Japan at 2:46PM local time off the northeast coast of Honshu, 80 miles east of the city of Sendai
- Tens of thousands are dead or missing
- Economic losses are mounting but estimated to be €140 to €210 billion, approximately 5% of Japan's GDP (RMS, March 21, 2011)

- Eleven reactors at four sites in closest proximity were automatically or manually shut down per seismic emergency procedures
- The nuclear plants affected by the earthquake represent 18% of Japan's electricity producing



Risk Identification

The stress continuum



Risk Identification

Stress and scenario testing



Scenario 1: Europe in Crisis.



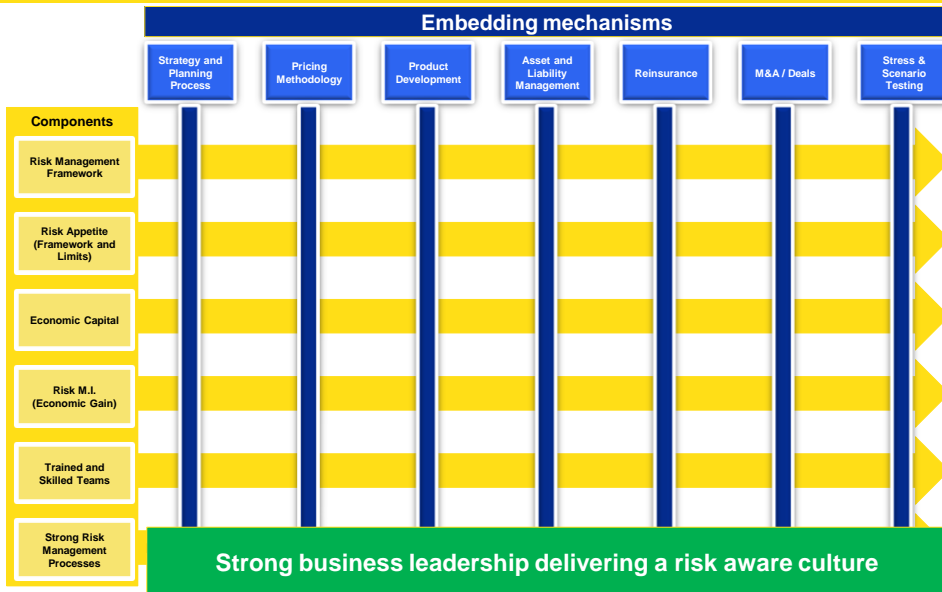
Scenario 2: Hyperinflation.



Scenario 3: Data Hacking.

Risk Management

How do we create value from it?



The characteristics of a good risk culture



Consistency throughout the organisation

- Tone set from the top
- Visible tolerances
- Ownership mentality
- Transparency and honesty

Risk Limits/Targets and incentives reinforce each other

- Strong Risk function, independent of the business
- Incentives designed to encourage consistent risk behaviours

Independence

- Risk culture embedded through all parts of the organisation
 - People
 - Systems
 - Processes

Consciously challenged and articulated

- Concerns and challenge encouraged and respected

Risk Management

Making it real for the business



Economic models (capital & risk)

The way we do things around here

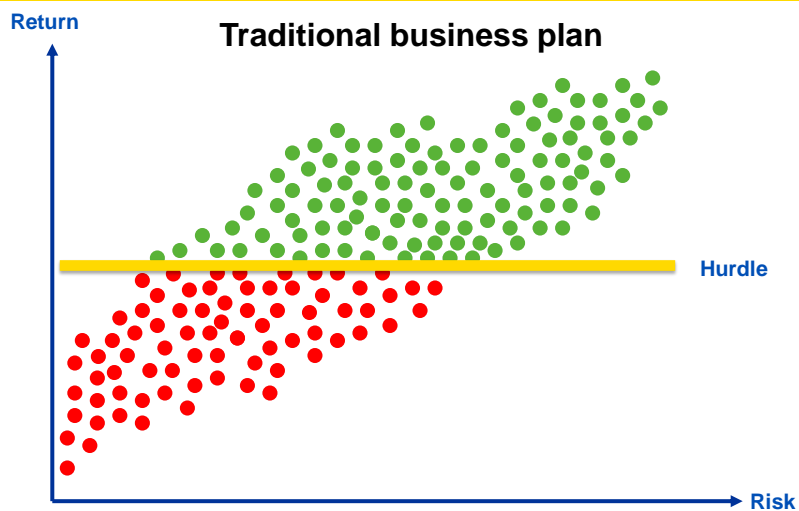
Risk Mgt

- Capital Allocation
- Capital structure
- Reinsurance
- Asset/liability matching
- Investment management
- Hedging
- Enterprise risk management
- Pricing
- Product Dev

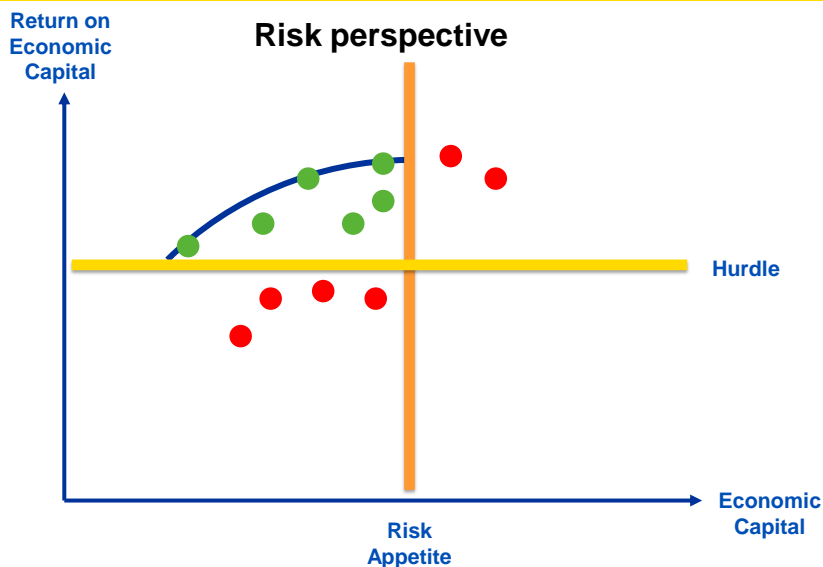
Outcomes

- Optimise capital deployment
- Facilitate good risk management on an enterprise wide holistic basis
- Optimise product design
- Transparent evaluation of assets, risks, scenarios and strategic options
- Optimal diversification of risk
- Business lines/liability mix
- Prosperity and peace of mind for our customers

The new world of risk

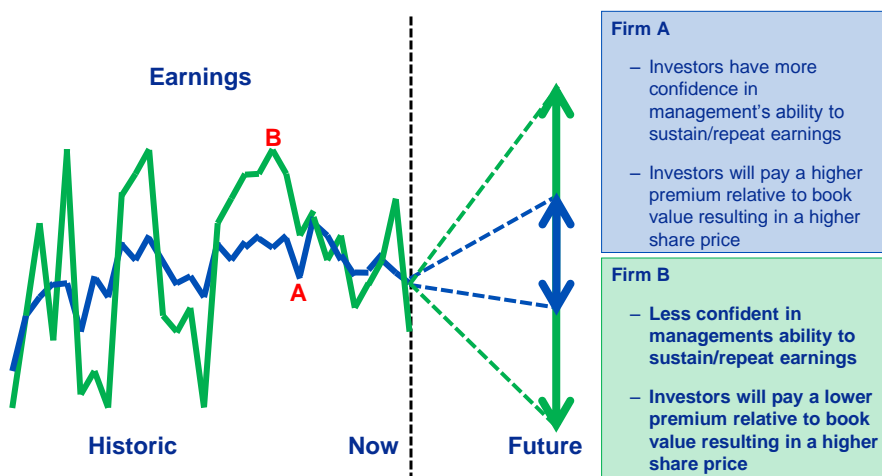


The new world of risk



Value Creation

Enhancing predictability through risk management

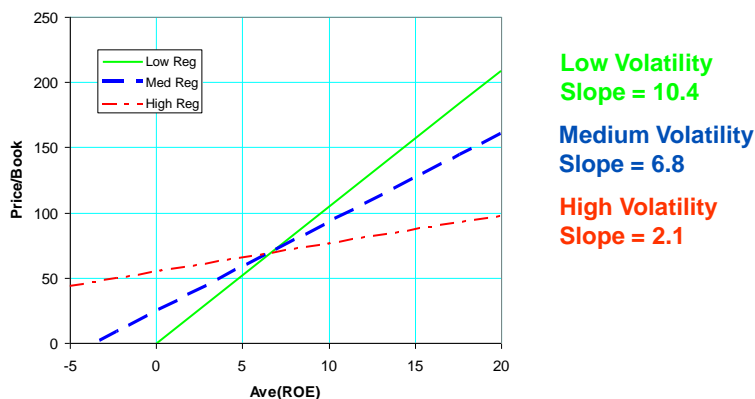


Evidence (1)

Firms with earnings persistency have higher multiples



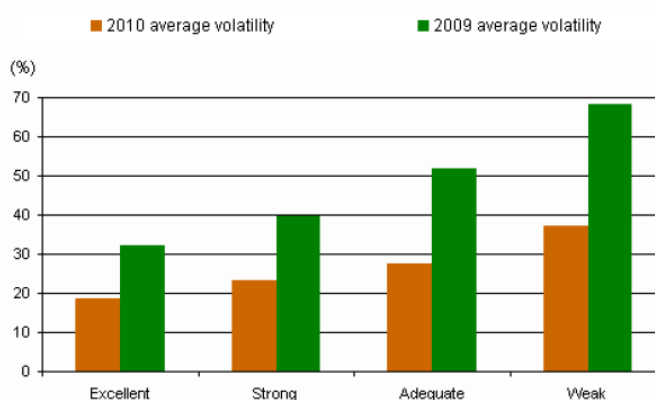
50 publicly traded property casualty insurance companies were divided into three equal size groups based on the volatility in ROE



Reference: "Lessons from the Financial Crisis On Risk and Capital Management: The Case of Insurance Companies" by Neil Doherty and Joan Lamm-Tennant, *Journal of Applied Corporate Finance*, Fall 2009.

Evidence (2)

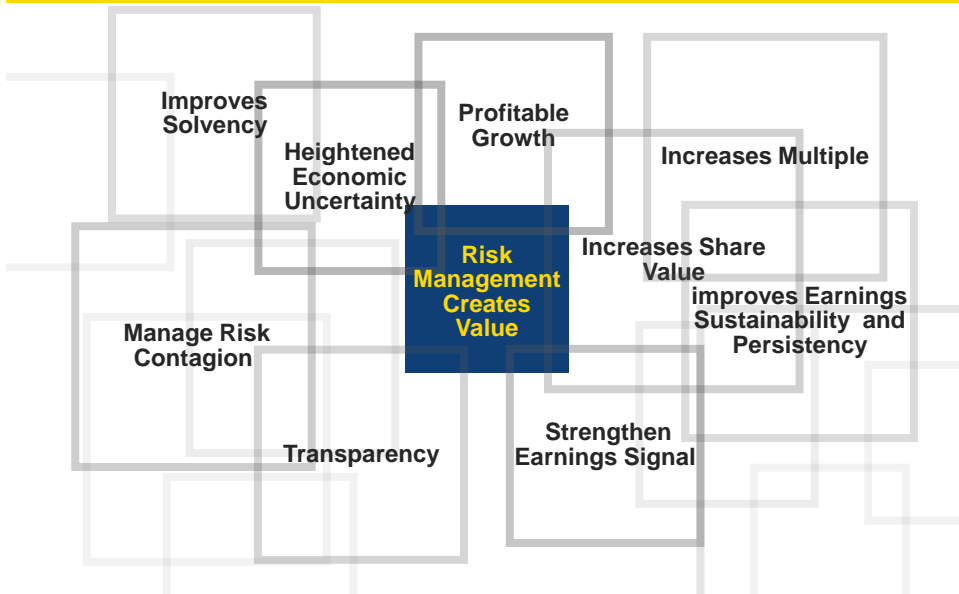
ERM score and stock price volatility



*Price volatility calculated from weekly log normal returns over the past year. Excludes mortgage and title insurers. Source: Standard & Poor's and Capital IQ.

© Standard & Poor's 2011.

A new landscape emerging ...



Risk management - Embedding



- Embed in fabric of organisation
 - Remuneration
 - Core Processes
 - Risk & Capital are interchangeable
 - Decision making & Governance
- Capability
 - People
 - Training/Education
- Clear risk appetite statements and limits

Questions

