Enterprise risk management: does it add value and could it add more value?

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Plan

- What is ERM?
- Does ERM add value?
- Why ERM is difficult and what can we do about it
  - Identifying risks
  - Measuring risks
  - Working out what action to take (the risk appetite problem)
  - Organising risk management
- Conclusions

WHAT IS ERM?

- COSO: “A process, effected by an entity’s board of directors, management and other personnel, applied in a strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives”

I would prefer…

- Risk is where outcomes are uncertain
- ERM is where a firm has the amount and type of risks that are best for its objectives
- i.e. it takes decisions and runs its operations consistent with this
- Assume a firm's objective is shareholder value (what for a mutual?)
- ERM covers upside and downside risk
- And it is not just about regulation

Choosing between more and less risky courses of action – theory (1)

- For each course of action, consider: (1) what are the risks, (2) full range of possible outcomes of those risks, (3) their probabilities, (4) effect on shareholder value
- Shareholder value is the value of the firm including goodwill; reflects all possible future outcomes; and is after the compensation shareholders require for risk-bearing (depends on correlation with other risks they bear)

Choosing between more and less risky courses of action – theory (2)

- More risk may bring more profit but also
  - Higher costs of planning and co-ordination
  - More taxes (depends on tax regime)
  - Lenders, employees, suppliers, customers require compensation for risk

  * Financial distress costs may > upside risk benefits

Interest rate risk → Balance sheet → Embedded value → Shareholder value

People risk → Shareholder value

Competition risk → Shareholder value

In practice…

- Simplified rules needed for day-to-day risk management
- ISO 31000 makes some useful points, e.g.
  - Integral part of firm processes;
  - Explicitly addresses uncertainty;
  - Systematic, structured and timely;
  - Takes human and cultural factors into account

DOES ERM ADD VALUE?

- Surely it must be good to examine risk in a holistic, structured way, consistent with a firm's objectives?

- Good to look at all risks together (not fully correlated, and hard to separate risk types)

Survey of US firms that had, in 2005, used ERM

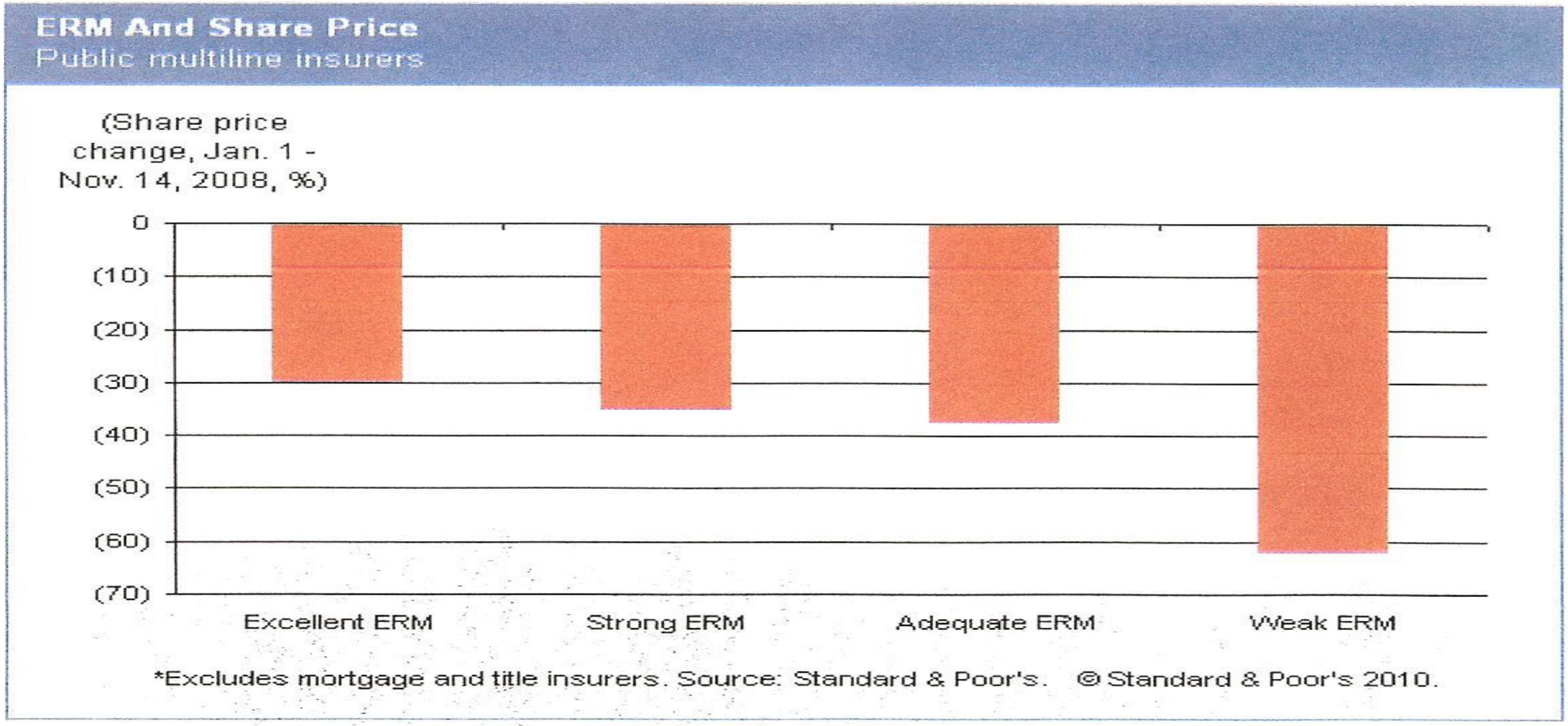
AIG

Lehman Brothers

Adding value: the evidence

ERM measure	Scope	Measure	Result
Appointing CRO[1]	US firms 1992-2003	Cumulative abnormal return	No effect
Using ERM[2]	US insurers 1998-2005	Tobin's Q	+20% on value
Using ERM[3]	US insurers 1992-2007	Stock volatility Profit per risk	Reduces by 12.3% Increases by 2%
Using ERM[4]	US gen ins 2000-07	Tobin's Q	Reduces by 5%
S&P ERM rating[5]	US insurers 2007	Tobin's Q	Positive to ERM3 only or no effect

Insurers' ERM and share prices



UK: 2008 benefitted from having learned the risk management lessons of 2000-03?

Risk, banks and the crisis
Ellul & Yerramilli, 2013

- US banks 1995-2010; RMI is an index to reflect strong and independent risk controls
- High RMI linked to banks that are profitable, have high % independent directors
- High RMI linked to low tail risk, low % bad loans, better operating performance, share returns in crisis years (no link with share returns in non-crisis years)
- … though RMI may focus on downside risk

ERM may add value for managers

- Why do some US gold-mining firms hedge gold price risk less than others?
  - if managers had high number of share options, low number of shares
- We typically find that more share options for directors are associated with more risks being taken

IDENTIFYING RISK
Risk disclosures

Easyjet 2010: Event causing widespread disruption, e.g. epidemics, pandemics, forces of nature (extreme weather, volcanic ash etc) and acts of terrorism

2009: volcanic ash not there!

- BP 2009: yes, drilling for oil is risky

- Barclays 2007: from a textbook?

- RSA: what went wrong in 2013?

Identifying risks: some lessons

- Don’t restrict to regulators’ categories
  - Include strategic risks to business model
- Include gradually emerging medium-term risks/opportunities
- Include ‘demand’ as well as ‘supply’ risk
  - The size of the market
  - Competition
  - Not only reputation (it isn’t a risk, it is <u>at</u> risk)

MEASURING RISKS

- Financial risks: Turner: Mis-placed reliance on sophisticated maths: inherent or fixable?
  - Models ok for ‘ordinary’ risks? but what about 2008? And for Solvency II?
  - Aviva: six 1-in-200 events in last 100 years?
- Natural risks: Tohuku earthquake 2011: official hazard map max 7.7; magnitude 9.1
- Operational risks: Challenger shuttle failure: probability 0.001% (mgt); 1% (engineers)

Convert probabilities to stresses
FSA risk capital margin for with-profits

Indicator	Stress test for RCM*		
Share prices	20%		
Property prices	12.5%		
Interest rates	17.5%		

*Also credit spreads and persistency

Convert probabilities to stresses
FSA risk capital margin for with-profits

Indicator	Stress test for RCM*	Measure	Change in measure in 2008
Share prices	20%	FT-All Share Index	-32.8%
Property prices	12.5%		
Interest rates	17.5%		

Convert probabilities to stresses
FSA risk capital margin for with-profits

Indicator	Stress test for RCM*	Measure	Change in measure in 2008
Share prices	20%	FT-All Share Index	-32.8%
Property prices	12.5%	IPD UK Index	-26.3%
Interest rates	17.5%		

Convert probabilities to stresses
FSA risk capital margin for with-profits

Indicator	Stress test for RCM*	Measure	Change in measure in 2008
Share prices	20%	FT-All Share Index	-32.8%
Property prices	12.5%	IPD UK Index	-26.3%
Interest rates	17.5%	15-year UK government bond yield	-17.6%

Stresses

- Haldane, Bank of England (2009): No incentive for banks to run severe stress tests:
  - With such a severe shock, the bankers would lose their bonus and possibly their job
  - The authorities would step in to save the bank
- How stressful should stress tests be?

But stress tests can help

- More transparent, understandable
- Freed from the probability dilemma

- Include non-standard stresses, such as threats to business model
- Include risks where probabilities difficult
- Can incorporate management actions
- Scenarios over time; second-round effects

Measurement holistically
An example from pensions (1)

Sensitivity	Liabilities
Actual	1000
Discount rate down by 0.5%	1095
Price inflation up by 0.5%	1055
Salary growth up by 0.5%	1020
Expectation of life up by 1 yr	1030

Measurement holistically
An example from pensions (2)

Sensitivity	Assets	Liabilities
Actual	1000	1000
Interest rates down by 0.5%	1070	1095
Price inflation up by 0.5%	1040	1055
Salary growth up by 0.5%	1000	1020
Expectation of life up by 1 yr	1020	1030

DECIDING WHAT TO DO
The problem of risk appetite

- I have an appetite for all risks that increase shareholder value (SHV)
- Can you have a ‘prudent’ risk appetite if that means you reduce SHV?
- Need to understand the risk/SHV link
  - Difficult, especially if models focus on solvency and embedded value not SHV
- Risk appetite is about types as well as amounts of risk: can help focus on what you are good at

When adverse events occur…
…not easy

- Easyjet 2010: Processes in place to adapt to widespread disruption. A business continuity programme is in place
- Just Retirement Holdings 2012: The Board keeps a close watch on regulatory developments and trends in order to be able to respond quickly to any change in the regulatory environment

ORGANISING RISK MANAGEMENT
Risk governance

- Walker (2009) recommended, for FTSE100 banks and life insurers:
  - Board Risk Committee for forward-looking risks, focussing on main prudential risks, chaired by a NED and with NED majority
  - High-level CRO independent of BUs, for all risks
  - Advise on risk weightings for performance objectives
- Similar PRA rule extended to general insurers
- There already were BRCs (e.g. Northern Rock)

Organising risk management
What Walker did at Barclays…

- Financial Risk Committee
- Conduct, Reputation and Operational Risk Committee: a key focus has been on monitoring the cultural change underway in the organisation
- Enterprise Wide Risk Committee: provides a useful opportunity for a more wide-ranging and freethinking debate about possible risks that might emerge
- All members of these committees were NEDs

In practice… 21 UK listed insurers (research in progress: 2014 accounts)

- 20 have a CRO (10 are actuaries)
- 17 have a Board Risk Committee (and 2 have a Board Audit & Risk Committee): typically cover all risks
- Some review <u>all</u> risk/remuneration issues
- Some risk functions focus on compliance
- 83 Risk Committee members: only 1 executive director: audit focus? Maybe whole Board for strategic discussion on risks?

Mikes' survey of investment banks

Compliance

CRO is compliance champion

Build risk framework to comply with rules

Quantitative techniques

Sophisticated risk modelling on a firm-wide basis

Strategy

Strategic advisers: Quantitative sceptics; use models but build in commercial experience

OR Strategic controllers: Quantitative enthusiasts; big role for models in allocating capital using risk-adjusted rate of return

Concluding thoughts

- The theory of ERM is hard to apply in practice
- But the discipline of ERM can be beneficial: better to try and understand risks and work out management strategy than not to try
- Could we do better?
  - Understand the link between risk and value
  - Risk incl ‘demand’ & opportunities not just audit
- ERM has limitations and needs judgment, but can help the judgments that managers have to make