Financial Condition Reporting
GIRO / CAS Convention 2001

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The FSA’s & EU Supervisors view
The FCR Paper
Areas for further research
Methods of modeling risk
Modeling operational risk
Bringing it all together including tail dependency
Relevance of risk measures
Overlaying hard to quantify risks with a DFA model
Use of insurance to reduce capital requirements

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FSA view

Adequate resources
What are adequate resources?
Test resources (as part of business plan)
Document process
How will FSA monitor?
Guidance
Adequate resources

- Meet customer liabilities even if things go wrong
- Resources include: capital, reinsurance, procedures, guarantees (if enforceable), contingent capital, qualified staff
- Firm (insurers, banks, etc) must (as part of business plan) test ability to cope with reasonable adverse scenarios
- Well-run firms doing this anyway
- Process documented - so available to FSA (Prin 11)

FSA monitoring

- Yet to be determined how FSA will monitor
- Consultation (March 2002?)
- Directors’ certificate?
- Brief description of tests?
- Vulnerability?
- Public / private?
- Information useful to company itself

Guidance

- Stress and scenario testing
- Guidance on all things that can affect companies - reinsurance, disasters etc
- Operational risk
- Combination of events
- Common causes
Institute of Actuaries paper on FCA

- Provides a framework for evaluating a company’s financial position in relation to the risk it covers both from a solvency & a shareholder perspective
- Concentrates on non-life insurance but covers the principles for all companies.
- It covers both readily quantifiable risks and those not so readily quantifiable e.g. management succession
- The Profession’s response to the FSA proposal.
- Corley Report also calls for FCR reports for Life Co’s

Risk Management Circle

Identify

Administer

Control

Finance

Effective control requires quantification

Methods of Modelling Risk

Financial Risk - investment models
Financial Liabilities - actuarial models
In many cases other disciplines will be required
Some consultancy firms specialize in people risk
Can the firm survive adverse scenarios?
Operational Risk

- ASSESSMENT OF OPERATIONAL RISK

Management and Business Risk

- Some can be modelled using econometric or causal modelling techniques
- Some are really risks for shareholders rather than capital issues
- Stress testing can be a useful quantification technique
- Insurance often cannot be used for this type of risk

Quantification of Operational Risk

- It is more complex than pricing conventional insurance risk
- The risks are more under control of the institution than many insured perils
- Changes in practice can have a material impact
- Organisations do not like to admit to Operational Risk losses
- Some are not readily amenable to statistical analysis e.g. management succession risk
Scenarios

- Distributions may not be the best approach to evaluating certain types of operational risk
- Test the survival of the organisation to adverse scenarios
- Especially suitable for “people risks” e.g. succession planning

Quantification of Operational Risk

Operational Risk

Delphi Techniques
Produce a Model
Quantify Risk
Corroborate Results
Collect Data
Industry
Specific
Model
Quantify

Development of loss curves

- Probability of Loss
- Expected Level of Loss
- Budgeted Loss
- Amount of Loss

Based on data
Including interviews
Questions

- The difficulty is the need to estimate the right tail in a skew distribution
- How good is the left of the curve at predicting the right tail
- Use of Bayesian statistics or credibility theory
- What distributions fit the data
- What techniques are best at supplementing the data for "missing large claims"

What are the other methods?

- Delphi techniques
- Decision trees and causal modelling
- Fuzzy Logic
- Others
- Use data bases for left side and other techniques for right side

Adding the efficient frontiers will overstate the costs for a given risk as no adjustment is made for diversification credits

Tail dependency is key to getting this right & is a key actuarial competitive advantage.
Risk Measures

- Var works well for symmetrical risks
- ECOR is better for skew risks such as most insurance risks
- A coherent measure needs to be used across the group as a whole
- Beware of tail dependency
- Other constraints are also needed such as a requirement to maintain a credit rating

Why Does This Matter?

The RBC's are very different for different approaches
Coherent Risk Measures

To be coherent a risk measure \((p)\) must satisfy four conditions:

(i) Translation Invariance \(p(x + \alpha r) = p(x) - \alpha\)

(ii) Sub additivity \(p(x_1 + x_2) \leq p(x_1) + p(x_2)\)

(iii) Positive homogeneity for \(\lambda \geq 0\) \(p(\lambda x) = \lambda p(x)\)

(iv) Monotonicity If \(x \leq y\) \(p(y) \leq p(x)\)

Var fails the sub additivity property

Developing adverse scenarios for soft risks

- Not readily quantifiable
- Develop control processes & assess impact on whole organization under different DFA scenarios
- It is the Board’s responsibility to assess risk. The report provides a regular & systematic framework
- It adds value to the company in reducing & controlling risk
- In many cases holding capital is not necessarily the best approach
- Can we develop some case studies?

Insurance to cover Operational Risk

- This is a non-trivial subject.
- Basel has many doubts.
Coverage Gaps

- If complete cover is not available then capital will need to be held against remaining risk
- Insurance should mitigate operational risk cost and so should be allowable
- Operational Risk models would need to be run with and without insurance
- Contracts with material exclusions may not mitigate overall capital requirements much
- All Risks Cover is preferable
- Much operational risk violates an underwriting rule that the insured should not be able to manipulate his loss experience
- Some risks may not be insurable e.g. management succession risk

Claims Disputes

- Some financial impact as a dispute creates coverage gap
- Change insurance practice of conducting investigations at point of claim to investigating at point of sale
- Financial Enhancement Ratings (FER)
- Different in conditions (DIC) coverage