Enterprise Risk Management

ERM Seminar
3 July 2006
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Managing Director

Agenda

Why do ERM?
What is S&P’s view of ERM?
What are our findings so far?
What is the potential impact on our capital analysis?

Winds of Change for Insurers

Why are insurers doing ERM? Why is S&P focused on it?
- Poor profitability
- Catastrophes and capital market crisis
- Risk analysis in silos
- In Europe, Solvency II

Need to re-examine old assumptions about
- risks
- cost of risks
- risk adjusted capital allocation

“Enterprise Risk Management” is the answer
What is Good Risk Management?

1) Identifying and monitoring significant risks
2) Setting risk limits for each risk
3) Maintain the level of risk retained within the risk limits
4) Establish tolerances for losses based on events and/or in the aggregate
5) Limit losses to within these tolerances

The product of Good Risk Management is

a controlled risk taking environment

Good ERM Programmes

- Practicing Good Risk Management across **ALL** of the significant risks of the Enterprise
- **Consistently** across the risks
- Consistently with the fundamental objectives of the enterprise
  - Expressed as a tolerance for:
    - Risk of default
    - Risk of capital loss
    - Risk of earnings loss

Excellent ERM Programmes

All of the characteristics of Good ERM Programmes plus...

- Systems to periodically measure the capital needed to support the retained risks
- Capital measures used for:
  - strategic decision making
  - policy design and pricing
  - catastrophe risk aggregates
  - reinsurance programme design
  - investment selection
  - financial performance evaluation

The product of excellent ERM is the optimization of enterprise risk adjusted return
ERM within the S&P Rating Profile

- Competitive Position
- Management & Corporate Strategy
- Operating Performance
- Capitalization
- Liquidity
- Investments
- Financial Flexibility
- Stronger ERM

Evaluation of ERM

- Strategic Risk Management
  - Risk Control Processes
  - Emerging Risk Management
  - Risk & Economic Capital Models
- Risk Management Culture
**Risk Management Culture**

- The degree of awareness of risk and importance of risk management at all levels of the insurer
- If it's healthy:
  - Results in embedding risk management concepts into every business decision
  - Risk Management is integral to Corporate Management

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### What will we look for?

1. Corporate commitment to Risk Management
2. Highly qualified risk management staff
3. Regular communication with board on risk positions and risk management programs
4. Clear and widely-known risk management policies, procedures and objectives
5. Manager's compensation is linked to the achievement of risk management objectives
6. Insurer’s governance structure supports effective risk management
7. Risk management is independent from risk taking

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**Risk Control Process**

<table>
<thead>
<tr>
<th>Risk Control</th>
<th>Credit Risk</th>
<th>Market Risk</th>
<th>Insurance Risk</th>
<th>Operational Risk</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Default Risk</td>
<td>Interest Rate</td>
<td>Pricing &amp; Underwriting</td>
<td>Distribution</td>
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<td></td>
<td>Mortgage</td>
<td>Equity</td>
<td>Reserving</td>
<td>Process &amp; People</td>
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<tr>
<td></td>
<td>Insurance</td>
<td>Derivatives</td>
<td>Catastrophe</td>
<td>Internal Controls</td>
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<td></td>
<td>Reinsurance</td>
<td>HEDG</td>
<td>Marketing</td>
<td>Fraud &amp; Internal Control</td>
</tr>
<tr>
<td></td>
<td>Risk Management</td>
<td>Risk Management</td>
<td>New Product</td>
<td>Reputational</td>
</tr>
</tbody>
</table>

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Emerging Risks Management

Terrorism, Natural Disasters, Pandemic, Man-made Disasters, IT Failures, Power Failures, Stock Market Crash, Banking Crisis, Interest Rate Spike, Systemic Liquidity Crisis, Hyperinflation, Negative Real Interest Rates, Significant Negative Economic Growth, Stagflation, Price Deflation, Currency Exchange Rate Crash

- To the extent these are not considered under operational risk management.
- To the extent that the risk are not core (catastrophe risk coverage)

What will we look for?

- Process for Anticipating Extreme Risks
- Process for Envisioning Significance
- Process for Preparing Response - Contingency Planning
- Past Events
- Learning from History - Post Mortem
- Environmental Scanning

Risk Models & Economic Capital Models

1. Risk Metrics
   - (Ultimately) Appropriateness of Assumptions, Methods and Models
   - Comprehensiveness of Models - risks not covered by models
   - Effective Usage – acting on information – timing & magnitude of response
   - Evaluation of risk at alternate time horizons & probabilities
   - Determination & usage of sensitivity metrics

2. Adequacy of Modeling Infrastructure
   - Timeframe
   - Timely process for updating data and assumptions

3. Aggregation of Risks
   - Benefits of diversification
Strategic Risk Management

*Periodic strategic risk decision making*

**What will we look for?**

- Policy Design and Pricing
- Balancing risk and reward
- Treatment of risk capital in product profit analysis
- Treatment of Aggregation effects in developing risk capital allocation to product
- Asset Allocation Process – risk and reward
- Capital Budgeting Process
- Risk Adjusted Performance Measures

Assessments of ERM Quality

We will assess and publish opinion of ERM:

- Excellent
- Strong
- Adequate
- Weak

Implementation

Phase 1:

Phase 2:
Detailed analysis including model evaluation: new criteria in 2006
Overall Findings

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Weak</td>
<td>Lacking basic controls for important risk(s)</td>
<td>6%</td>
</tr>
<tr>
<td>Adequate</td>
<td>Basic risk controls in place for all major risks</td>
<td>62%</td>
</tr>
<tr>
<td>Strong</td>
<td>Basic risk controls in place for all major risks PLUS:</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>1) Process to make strategic choices among risks based on risk &amp; reward</td>
<td></td>
</tr>
<tr>
<td></td>
<td>framework</td>
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<tr>
<td></td>
<td>2) Process to prepare for Emerging Risks</td>
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</tr>
<tr>
<td>Excellent</td>
<td>Mastery of Controls, Emerging Risk preparations &amp; strategic risk applications</td>
<td>8%</td>
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Potential Impact on Capital Analysis

Current capital adequacy analysis gives no quantitative credit for interline diversification.

Qualitative credit given in analysis of:
- Capital
- Competitive position
- Earnings

Ultimately quantitative credit will be given for an insurer with excellent/strong ERM with credible economic capital models.

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