ENTERPRISE PERSPECTIVE OF CORPORATE RISK

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Cambridge Centre for Risk Studies
Corporate Risk Profiling

- Overview and concepts of an enterprise view of risk
- Trends in corporate risk management
- Corporate Viability
  - Opportunities to address regulatory and reporting requirements
- Applications of Corporate Risk Profiling
  - Example of a top risk to an enterprise
  - Enterprise view of a company
Risk management practices of major companies - determine how they are adapting to meet future challenges and opportunities

- Interviews/workshops with Corporate RM Directors
- Cambridge CRO Council Roundtables
- Focus groups with Corporate ERM Directors
- Wide survey to RM professionals
- Publication of selected sector specific case studies
Defining a Company from a Risk Perspective

Company – Entity or group of people authorized to act as a single body and recognized as such by law.

Taxonomy of a Company

- Strategy
- Culture
- Talent
- Systems
- Settings
Concept: Corporate Risk Profiling

- Geographical dispersion of functions, operations, customers
- Perform large range of business activities
- Exposure to range of threats
- Legal and regulatory jurisdictions
- Counterparties and secondary supply chains
Challenges in Corporate Risk Management

Examples of Risk Management Practices:

<table>
<thead>
<tr>
<th></th>
<th>Incomprehensive</th>
<th>Inconsistent</th>
<th>Not Quantified</th>
<th>Not Holistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Risk Register</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Scenario Planning</td>
<td>X</td>
<td>X</td>
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<td>Insurance</td>
<td>X</td>
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Holistic and quantified framework: Lacking consistent or comprehensive model for identifying risks to the corporation, for comparing threats, for defining potential exposure and likelihood

- **External threats:** Internal view may be too narrow, short-term, or biased toward the probable
- **Methods and Metrics:** Lacking consistent methodologies for determining metrics for normalized view across enterprise
- **Geography:** Lacking model for evaluating risks to the corporation in relation to geography. E.g. Assets, counterparties, secondary supply chains, legal and regulatory jurisdictions
Catastrophe Modeling in Complex Systems

- The Centre for Risk Studies explores the intersection between
  - Catastrophe modeling and extreme risk analytics
  - Complex systems and network failures

- Advance the scientific understanding of how systems can be made more resilient to the threat of catastrophic failures

To answer questions such as:
‘What would be the impact of a [War in China] on [Trade Networks] and how would this impact the [Global Economy]?”

Regional Conflict  Air Travel Network  Global Economy
Geographical Mapping of All the Threats
Explore by city

Explore by threat

Please use the map and charts below to explore the Lloyd's City Risk Index in more detail. You can make single or multiple selections in the filters. The map is interactive, meaning you can move around, zoom and select cities. When multiple cities are selected the charts show comparable or combined data. The scenario cost chart only appears (beneath the other charts) when a single city is selected.

Your selections:

City GDP (bn) | GDP@Risk (bn) | % of GDP@Risk
--- | --- | ---
$35,404.22 | $546.50 | 1.54%

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Mapping Threat Taxonomy to Business

**Threats to Business Output**
(Supply shock)

A. Site-specific threats to key facilities & assets
- Earthquake
- Tropical Windstorm
- Flood
- Tsunami
- Volcanic Eruption
- Fire & Explosion
- Terrorism
- Power Outage
- Water Shortage
- Nuclear Accident
- Heatwave
- Freeze

B. Risks that affect the whole company
Idiosyncratic – i.e. unlikely to affect other businesses at the same time
- Cyber Attack
- Reputational Risk
- Liability Issues
- Competition Risk
- Regulatory Risk
- Company Specific

C. Systemic risks for sectors or all businesses
Will this business be affected more than average for sector?
- Market Crash
- Commodity Prices
- Sovereign Crisis
- Human Pandemic
- Solar Storm

**Threats to a Company’s Market**
(Demand shock)

D. Threats to demand in a national market
- Sovereign Crisis
- Interstate Conflict
- Separatism Conflict
- Social Unrest
- Terrorism
- Human Epidemic
- Heatwave
- Freeze
- Solar Storm
- Plant Epidemic

E. Threats to demand in regional or global markets
- Market Crash
- Commodity Prices
- Human Pandemic
- Regional Conflict

F. Trend risks that affect the company business model
- Climate Change
- Artificial Intelligence
Corporate Viability Risk

- Viability risk is a growing focus for corporations
- Recognition of viability risk - growing trend for international corporates to improve their risk reporting
  - Internal recognition: Corporate risk registers
  - External requirements: SEC 10-K in US, and Long Term Viability Statements in UK
  - Accountability to shareholders is becoming an increasing driver of executive concern

Current movements

- Move towards “1-in-100” risk reporting initiative for corporations

Regulation S-K, Item 503(c), SEC 2005
Where appropriate, provide under the caption “Risk Factors” a discussion of the most significant factors that make the offering speculative or risky. This discussion must be concise and organized logically. Do not present risks that could apply to any issuer or any offering ...

The risk factors may include, among other things, the following:
1. Your lack of an operating history;
2. Your lack of profitable operations in recent periods;
3. Your financial position;
4. Your business or proposed business;
5. The lack of a market for your common equity securities or securities convertible into or exercisable for common equity securities
Assessing Corporate Health: Industry Financial Ratios

- **Capitalization**: measures the debt component of a firm’s total capital structure, e.g.: Capitalization Ratio, Total Debt-to-Invested Capital Ratio;

- **Efficiency**: captures the effectiveness of firm’s usage of assets and liability, e.g.: Asset Turnover, Inventory Turnover;

- **Financial Soundness/Solvency**: captures the firm’s ability to meet long-term obligations, e.g.: Total Debt to Equity Ratio, Interest Coverage Ratio;

- **Liquidity**: measures a firm’s ability to meet its short-term obligations, e.g.: Current Ratio, Quick Ratio;

- **Profitability**: measures the ability of a firm to generate profit, e.g.: ROA, Gross Profit Margin;

- **Valuation**: estimates the attractiveness of a firm’s stock (overpriced or underpriced), e.g.: P/E ratio, Shiller’s CAPE ratio;

- **Others**: Miscellaneous ratios, e.g.: R&D-to-Sales, Labor Expenses-to-Sales
Example: Financial Soundness/Solvency

- Aggregate picture of financial soundness of companies to inform broader health of economy
- Analyse sector specific attributes and trends
- Benchmark companies within sector

Source: Compustat Quarterly Filings/CRSP/IBES/WRDS Industry Financial Ratio
Top Risks Concerning Companies in the Next 12 Months

Data Source: Cambridge Centre for Risk Studies

Other Risks include: Fraud, Business ethics and anti-corruption, Anti-bribery, Third party oversight, Digital transformations. Note: Data from subset of survey respondents; final index subject to change
Short Term vs Long Term Top Risks

Data Source: Cambridge Centre for Risk Studies
Note: Data from subset of survey respondents; subject to change
Top Mitigations from Cambridge Survey

Please rank the top 10 most important risk mitigation strategies that are currently being planned at your company.

Risk Mitigation Strategies Currently Being Planned at Companies

- Increasing training around critical operations
- Balancing staffing
- Adjusting product offerings
- Strengthening risk culture
- Emphasis on health and safety
- Changing geographical footprint
- Divesting business units
- Modifying supply chains
- Hiring external advisors
- Acquiring business units
- Rewriting HR policies
- Purchasing additional insurance
- Increasing ERM budgets
- Capital Markets; e.g. swaps, future contracts
- Alternative financial instruments; e.g. Insurance-linked Securities (ILS), catastrophe...
- Other

Data Source: Cambridge Centre for Risk Studies
Note: Data from subset of survey respondents; final index subject to change
**Top Risk by ERM Surveys: Reputation Risk**

- Reputation risk is often reported as a top risk in ERM surveys vs 10-K filings.
- Reputation is not reported on a company’s balance sheet; e.g. intangible assets, goodwill.
- A company’s reputation factors into its current value of its intangible assets and its ability to create/destroy its future value.
- A growing percentage of a company’s market value is determined by intangible assets. Reputation is reported to be an important element of a company’s intangible assets.
  - It represents a proportion of the difference between market value and book value. [Gaultier-Gaillard, “Managing reputational risk – From theory to practice”, Reputation Capital, 2009]
Top Risk: Reputation Risk
Proxies for Reputation Exposure

S&P 500 Median Market/Book Value Ratio

Source: Compustat Quarterly Filings/CRSP/IBES/WRDS Industry Financial Ratio
Comparative Reputation Assessments

Self Scored Reputation vs Externally Scored Reputation

Data Source: Cambridge Centre for Risk Studies
Note: Data from subset of survey respondents; final index subject to change
### Table 1
Discipline-Based Conceptualizations of Reputation (see Fombrun and van Riel, 1997)

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Reputation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Either traits or signals</td>
<td>Perceptions of firms held by external observers</td>
</tr>
<tr>
<td>Strategic</td>
<td>Assets and mobility barriers</td>
<td>Derive from unique internal features of firms</td>
</tr>
<tr>
<td>Marketing</td>
<td>Cognitive and affective meaning given to cues received about an “object” that is usually a product</td>
<td>Nature of information processing, resulting in “pictures in the heads” of external subjects</td>
</tr>
<tr>
<td>Organizational</td>
<td>Derives from an organization’s culture and identify, which shape a firm’s business practices and the kinds of relationships managers establish with key stakeholders</td>
<td>Rooted in the sense-making experiences of employees</td>
</tr>
<tr>
<td>Sociological</td>
<td>Aggregated assessments of firms’ institutional prestige and describe the stratification of the social system surrounding firms and industries</td>
<td>Social constructions that come into being through the relationships that a focal firm has with its stakeholders</td>
</tr>
<tr>
<td>Accounting</td>
<td>The value of intangible assets</td>
<td>Investments in branding, training, and research build important stocks of intangible assets</td>
</tr>
</tbody>
</table>

Example: Market Offering for Reputation Risk

Brand Assurance - Brand restoration expenses

- Aggregate limit of $100M
- Protection for crisis management and related costs.
- Crisis event must occur defined as one of 19 named perils
- Event leads to adverse publicity within 60 days; i.e. at least two high impact media outlets report crisis
- Results in financial loss in 1 of 4 ways
  - Drop in revenues by at least 20%
  - Reduction in price per share of at least 20%
  - Lost of customers who represent at least 20% of insured’s gross annual revenues
  - Loss of suppliers whose input is critical in the production/provision of at least 20% of insured’s gross revenues

Example: Market Offering for Reputation Risk

Reputation Risk Insurance

- Aggregate limit of 50M – 150M Eur
- Indemnifies for lost profits that result from crisis event
- Provides option to insure spill over
- Provides short-term liquidity to companies in case their products brands experience negative reputation events
- Allows organisation to continue functioning so they don’t suffer further reputation damage.
- Financial loss is determined by an independent loss adjuster who determines revenue drop associated with crisis event

Corporation’s EP

Probability of Occurrence in the next 12 months

Impact

- All
- NatCat Events
- FinCat Events
- PolitiCat Events
- Pandemics
- CyberCats
Concluding Thoughts on Furthering the Resilient Corporation

- **Challenges to the Corporations**
  - Changing global strategies and subsequent risk management plans
  - Understanding its enterprise risks and communicating them via the balance sheet and overall value

- **Value of an enterprise risk picture**
  - EP curve can allow a corporation to optimise their “insurance” purchasing framework
  - Identify the most cost-effective ways of improving its resilience
  - Apply Risk Accounting to its processes
  - Reflect risk savings on balance sheet

- **Increase transparency for corporations, risk transfer agents and capital markets**
Cambridge Centre for Risk Studies

Shortlisted for

LONDON MARKET AWARDS

Risk Modeller of the Year 2018
Social Media during the Risk Summit

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