Project Description:
ERM Analysis of Property-Casualty Insurance Companies

Introduction

A number of enterprise risk management frameworks have been proposed by various organizations, including the COSO and the CAS ERM Committee, among others. However, for the insurance industry, what is still lacking is an actionable, specific guide of ERM implementation. It is the goal of this research proposal to address this need.

We believe that an actionable, specific ERM guide has to come from a balanced approach that combines a fresh theory of risk with practical experience of the risk issues and business dynamics. We recognize that the insurance industry is an enormous complex system, with all parts being connected—similar to for example the system to supply electricity. This research report is intended to usher in coordinated efforts among insurance executives, regulators, and rating agencies. The overall goal is improved system stability, reliability and performance.

We are assembling a research team consisting of ERM scholars, senior insurance executives, underwriters and actuaries to undertake this research. Our initial focus of study is on property-casualty companies, although the general principles are applicable to other industry sectors.

Objectives of the Project:

- Identify and analyze the inherent risks associated with various aspects of the business operations for P&C insurance companies.
- Assess whether the current practices sufficiently address the identified issues.
- Identify and prioritize steps to promote better ERM practice.
- Recommend a conceptual ERM framework for P&C insurance companies with concrete guidance for risk assessment and measurement.
- Propose a set of enterprise risk valuation engines from various perspectives, for various risk types or business units. The interactions and co-working of these risk valuations can help insurance executives to guide their business operations. If the same approach is applied at the industry level, these risk valuations can guide

regulators and rating agencies to better manage the business cycle, with the overall goal of improved system performance.

Sponsoring Organizations: Casualty Actuarial Society, ERM Institute International Ltd., and the Risk Management Section of SOA/CAS.

The Research Team/Authors who will devote considerable time to conduct the research, data analysis and writing of the report**:**

- Dr. Shaun Wang (ERM Institute International, Ltd)
- Robert Faber (Risk Lighthouse, Inc.)

The Research Steering Committee who will oversee the project development and use of funding

- John Kollar (the CAS)
- W. James MacGinnitie (ERM-II)
- Barry Franklin (RMS)
- James Rech

Working Party: Several experienced practitioners (in addition to members of the Steering Committee) have volunteered to form a working party to assist in reviewing and commenting the research work. Individuals who make contributions to the work product will be acknowledged.

The Research Process:

1. Identifying the Issues & Gathering Insights

- Research team will write an initial draft report outlining the theoretical framework, the initial analysis of the inherent risks and business dynamics, and proposed solutions and actions.
- In addition, the research team will invite leading insurance executives representing various segments or lines of business to provide input.
- Research team will edit and collate input, and integrate into final report.
- If deemed necessary, the research team may arrange a face-to-face meeting.

2. **Verify Through Data Analysis**

- While much of the risk analysis will be guided by expert insights of the inherent risks and business dynamics of the property-casualty industry, research team will look for data to verify their initial findings. The research team (and their research assistants) will conduct data analysis (using NAIC database) by lines of business, by company type. For instance, the data analysis will show year-to-year variations and company-to-company variations in loss ratio.

3. **Complete A Concrete ERM Guide**
    - Propose an ERM guide to address the main issues and to facilitate an integrated approach to underwriting, risk control, actuarial valuation and risk management.

Final Research Product (Deliverables): A documentation of the major findings.

- The final report shall be published on the websites of the main sponsors.
- Copyrights of the final research report will be shared by sponsoring organizations and individuals on the Research Team.

Significance:

- This is a joint effort among academia, and professionals from actuarial, underwriting, as well as industry executives.
- The group is going a level further than many preceding attempts, addressing big-picture, business risk issues for property-casualty companies.
- The collaboration among the CAS, ERM-II, and the Risk Management Section can signal the market that the academic community, the actuarial organizations, and the business community are collaborating in ERM research.

Time Frame: Start on February 10, 2006, and complete by October 31, 2006

Milestones:

1. By February 15, 2006: A Major Simultaneous Press Release by all co-sponsoring organizations at the beginning of the project.
2. By April 15, 2006: Completion of initial risk valuation, data analysis, and draft writing. First report is due to the Steering Committee.

3. By June 15, 2006: Completed interview of identified insurance executives. Have incorporated feedbacks from the steering committee and the working party. Second report is due to the Steering Committee.
4. By August 31, 2006: Final Report to be submitted to the Steering Committee. Exposure Draft Report will be posted online to seek comments and feedbacks.
5. By October 31, 2006: The research team will incorporate additional comments and feedbacks after the draft exposure. Project completed.

Project Oversight Committee: Composed of a representative of each of the involved organizations. The project oversight committee shall decide specific uses and allocations of the research fund.

The Following Draft Essay Serves As A Starting Point For The Project Work.

An ERM Analysis for Property Casualty Insurance Companies

By The Research Team

Problems with Traditional Approaches:

1. Traditionally property-casualty insurance companies looked at reserve (the single largest liability item on the balance-sheet) valuations as the focus of their risk analysis, followed by analysis of investment portfolios. Interestingly, annual statements make no comment as to current pricing adequacy, while spending pages on reserves. Although reserves appear to be the largest "uncertain" item, the pricing and underwriting of current book is the only place that you can do something about the future.
2. About 15 years ago, some researcher made a bold prediction that small companies could not survive in 10 year's time. To the contrary, small regional companies have traditionally outperformed large companies in gross loss ratio. The tremendous growth of captives and risk retention groups is essentially small insurance companies in a slightly different form, and similar to the growth of mutual companies over 100 years ago.
3. If one needs evidence of the weakness of some large multiple-line insurers, consider the following list of disappearing independent names: Aetna, INA, General Accident, Continental, Reliance, Commercial Union, Royal Globe,

USF&G, Maryland Casualty, Transamerica, Kemper. Who will be the casualties to join the list above after the next soft market?

4. During the past twenty years senior management attention has focused on growth, acquisition, and expense reduction (efficiencies). What was missing in the late 1990s from lessons learned in the early 1980s?

Identified Major Pitfalls:

5. One major cause of financial difficulties is that large multiple-line insurance companies have failed to recognize the entire underwriting risk, especially in instituting pricing policy and controls. This failure has shown up in such diverse lines as "financial guarantee" written as surety, and the wide swings in commercial liability rates and loss ratios.
6. The first order of business for insurance companies is to get the price right for risk and class characteristics including volatility and the unknown exposure. Volatilities in large risk commercial pricing are due less to market pressure than to the insurance companies fundamentally not understanding what the risk is worth in premium. In lines such as personal auto, where loss characteristics are well understood and limits low, rate variations are small and move slowly over time to reflect frequencies and severities.
7. Primary underwriters have been becoming less and less educated in true underwriting risk characteristics over time. Frequency has become a crutch for experience rating that ignores differences in severity characteristics.
8. For data quality, in many liability classes, the type of data captured is inadequate for evaluating risk characteristics, and therefore establishing adequate prices. In many cases, for large risks, because of rating methodology applied, or the existence of self-insured retention, data is not captured at industry-wide level.
9. Loss ratio, including expense ratio, should be the dominant concern. For heavy commercial business, underwriting selection and pricing discipline have been the major determinants for companies' financial performance. However, for personal line writers where there is relatively little loss ratio variation, expense differential can become a major issue especially in the long run.
10. Rating agencies' risk capital models do not promptly reflect changes in rate level. Instead, they tend to react to reserve increases which are the later manifestation of inadequate rates.

11. Some of the current theoretical models show misleading results especially in the overestimation of risk diversification benefit and in the underestimation of capital requirement for long-tail business.
12. The current insurance risk-based frameworks are inadequate for capital requirements and allocation. Basel II in Banking should serve as a guideline for better assessment of risk.

Our theoretical framework

In the current thinking, the theoretical foundation of ERM seems to be the portfolio theory which stresses the significant diversification benefits that are derived from pooling different types of risks, across geographic regions and across products. This is deeply entrenched in the property-casualty insurance sector given that the insurance business model has been based on risk pooling. However, blindly applying the principle of diversification has moved the industry away from an in-depth understanding of individual risks, not fulfilling the purpose of ERM.

Our theoretical framework shall be based on an analysis of the inherent risks. Unlike "pure volatility" risks, inherent risks cannot be easily diversified away. Dealing with inherent risks requires "extensive business expertise" and/or "careful restructuring". The notion of inherent risks leads us to a new path to risk valuation methodology.

What is needed for the insurance industry?

1. A better understanding of the true risk characteristics of certain lines and more appropriate underwriting and pricing of individual risks within these lines, considering the large levels of uncertainty. see Best Review: November 2005, "The Art of Underwriting"
2. Institute underwriting and pricing controls that mitigate the horrific unjustified cut-throat rate decreases.
3. A risk-based capital framework that *accurately* reflects premium adequacy and risk characteristics. Risk-based capital framework should better reflect the underlying risk (various aspects including frequency, severity, correlation, pricing adequacy, the length of development tail)
4. Future winners may be specialized companies with real understanding of the risk characteristics of business written, with data collection systems to support

the risk selection, and with pricing that is able to create differentiation based on real loss drivers.

5. For large diversified (especial commercial liability) writers, significant restructuring is almost certainly required in order to avoid wild market swings and big losses.
6. Restore primary underwriting as a knowledge-based practice focused on the actual risk characteristics.
7. Establish a fresh risk theory of insurance that addresses current misconceptions, and is understood by the practicing underwriters and actuaries. Risk-based capital framework belongs at the desk level, not just at the office of the CFOs and CROs.