Enterprise Risk Management Module (CERA/FSA)

SECTION 1: MODULE OVERVIEW

Introduction

Quick! Try to name a bankruptcy that was solely due to financial risks. It surely can be done, but it’s not easy. Think back over the past 20 years: Drexel Burnham’s concentration of risk and the resulting conflicts of interest, AIG’s overreliance on sophisticated models and home mortgages sold to people with no income. Each of these examples demonstrates how weak processes for controlling the risks have played a leading part in bad endings.

Warren Buffett demonstrated his commitment to a risk management culture during his testimony to the U.S. Congress after Salomon Brothers tried to corner the U.S. Treasury market in 1991. As the leading shareholder, he was brought in to try and save the company. Management statements like "I'd like to start by apologizing for the acts that brought us here" are much too rare. Later in the testimony he stated, "Lose money for the firm, and I will be understanding; lose a shred of reputation for this firm, and I will be ruthless." That was a very clear statement for employees and other stakeholders to hear. Few CEOs are willing to make such a comment out loud, and many show their true colors by accepting huge cash payouts even when the other stakeholders have done poorly through layoffs or poor financial performance.

During your module study, you’ll expand your knowledge of ERM. Specifically, you’ll learn how the discipline emerged from high-profile organizational failures to become more institutionalized through the development of formal regulations. You’ll also learn about a comprehensive risk management framework that covers risk controls, key risk indicators, data gathering, measurement and monitoring and reporting. Finally, you’ll learn in more detail about measurement of risk capital and about risk mitigation and financing. Ultimately, this module is intended to help you learn how to identify, measure and manage risk while understanding core regulatory requirements and implications.

Other Risk Resources

There are many risk resources not covered in this module. The Internet is a great resource. Look for initiatives from New Zealand, Australia, the Financial Services Authority in the United Kingdom and others. The European Chief Risk Officer Forum (CRO Forum) and the newly formed North American Chief Risk Officers Council (NACRO) provide a variety of good information from Europe and the U.S. The International Network of Actuarial Risk Managers (INARM) has a discussion list serve and a LinkedIn website. The former can be found at http://www.soa.org/news-and-publications/listservs/list-public-listservs.aspx.
Regulatory Regimes

Regulators continue to evolve their risk management requirements. Most regimes are moving from being rules-based where formulas are applied to current exposures, to principles-based approaches (PBA). PBA techniques borrow heavily from those used for ERM, so the practitioner is able to leverage tools developed for one purpose and apply them to another.

Module Objectives

After you complete this module, you will be able to:

- Explain what enterprise risk management (ERM) means.
- Describe an ERM framework.
- Identify regulatory requirements related to ERM.
- Define, identify and evaluate operational risks.
- Understand data issues in general, and special considerations with respect to ERM.
- Describe and apply quantitative and qualitative methods for assessing risk.
- Describe and apply the components of an effective economic capital model.

Module Sections

This module consists of nine sections:

- Section 1. Module Overview (You are here now).
- Section 2. Introduction to Enterprise Risk Management.
- Section 3. Developing an ERM Framework.
- Section 4. Regulatory Requirements.
- Section 5. Defining, Identifying and Evaluating Operational Risks.
- Section 6. Data Issues.
- Section 7. Risk Measurement Approaches.
- Section 8. Economic Capital.
- Section 9. Putting it all Together.

In addition, this module contains an End-of-Module Test and an End-of-Module Exercise.
SECTION 2: INTRODUCTION TO ENTERPRISE RISK MANAGEMENT

Introduction - Emergence of a New Discipline

Until relatively recently, risk management was not considered to be a separate discipline, even in the financial services industry. While companies had long managed operational risks in addition to credit and market risks, several high-profile failures prompted organizations to begin to approach all risk more formally and systematically.

There are a variety of ways to define risk categories. Later, this module focuses on alternative risk definitions, especially regarding operational risk. While the traditional definition of financial risk includes credit risk and market risk, categories such as strategic risk are not handled consistently by regulatory regimes.

Objectives

Upon completion of Section 2, you should be equipped with the basics to leverage single risk models to review risks consistently at the enterprise level.

After you complete this section, you will be able to:

- Understand the set of risk taxonomies and apply it to different frameworks.
- Explain the need for risk management in an operation-wide capacity.
- Describe the implications of tail events on a firm’s results.
- Explain how banks, insurers, pension plans (or financial intermediaries) and rating agencies define risk.
- Identify the drivers behind some well-publicized insolvencies.
SECTION 3: DEVELOPING AN ERM FRAMEWORK

Introduction
Risk management forces firms, and individuals, to think about what risks they are taking. It also encourages them to think about which risks they want to take because they expect to be paid adequately to accept the risk. Then they can act on the two.

Most people think about risk management as mitigation, how to reduce a risk that is already on the books. But, in addition, firms must determine whether to accept the risk in the first place, and whether to seek out a risk. This allows a firm to optimize its risk profile through strategic and tactical planning.

Objectives
After you complete Section 3, you will be able to:

- Evaluate an ERM framework.
- Use tools common to ERM practice.
- Use common sense to consider models and their results.
- Present a list of risks and prioritize them for a specific firm.
SECTION 4: REGULATORY REQUIREMENTS

Introduction
To provide a more formal and systematic approach for identifying and measuring risk, regulatory requirements have been established for financial institutions. Some of these regulations pertain to ERM. These include:

Global initiatives:
- Basel II and the proposed Basel III – A worldwide regulatory framework for any holding company that is the parent entity within a banking group.
- Solvency II - A European Union initiated project aimed at creating a more risk-related solvency model. Beyond imposing quantitative solvency requirements looking at a broad array of risks, Solvency II considers the overall management of risks and the governance of the insurance organization. The supervision encompasses every aspect of insurance operations.
- International Association of Insurance Supervisors’ ERM requirements.
- The International Actuarial Association’s ERM initiatives.
- New financial regulations that may affect ERM.

Specific regulatory initiatives:
- NAIC Solvency Modernization initiative and the development of the Own Risk and Solvency Assessment (ORSA). (U.S. based)
- Regulators’ systemic regulatory implementation as mandated by Dodd-Frank Act. (U.S. based)
- Rating Agencies’ ERM initiatives.
- Operational risk specific regulatory requirements.
- Other industries’ ERM initiatives.

Objectives
After you complete Section 4, you will be able to:

- Describe the global regulatory initiatives as they relate to ERM.
- Describe specific regulatory proposals for the financial sectors, including the insurance industry.
You will also be introduced to the role of operational risk in the context of ERM, which will be built upon in the next section.
SECTION 5: DEFINING, IDENTIFYING AND EVALUATING OPERATIONAL RISKS

Introduction
In section 5, you will review many aspects of operational risk and their link to the broader context of ERM.

Objectives
After you complete Section 5, you will be able to:

- Define and understand the traditional regulatory and broader operational risk approaches.
- Understand the use of qualitative approaches such as key risk indicators for risks that do not lend themselves easily to quantification.
- Compare and contrast different approaches to quantitatively evaluate operational risk; including the “actuarial method” approach.
- Describe major sources of operational risk in general and their link to other risks such as reputational risk from an ERM perspective.
- Describe at least two hedging strategies including control effectiveness and insurance.
SECTION 6: DATA ISSUES

Introduction

Understandably, actuaries spend a great deal of time thinking about models, their construction and evaluation, and their results. They often spend less time thinking about data requirements. When the project begins, it often turns out that collecting and validating the data takes far more time than anticipated. But “Garbage in, garbage out.”

Objectives

After you complete this section, you will be able to:

- Identify and describe the key general considerations related to data and data validation.
- Explain the guidance related to data issues provided by actuarial standards of practice in Canada and the U.S.
- Define categories of data relevant to ERM.
- Explain the uses and misuses of internal data.
- Explain the uses and misuses of external data.
- Identify examples of data types used for operational risk and reputational risk.
- Identify important considerations in communication of data issues.
SECTION 7: RISK MEASUREMENT APPROACHES

Introduction and Objectives

After you complete this section, you will be able to:

- Understand particular aspects related to the context of risk measurement and unexpected events.
- Understand Copula methods.
- Describe how unexpected events can be assessed using extreme value theory, predictive modeling and scenario generators.
- Explain how scenario analysis can be developed using the Delphi approach, scenario approach, emerging risks approach, risk surveys, and systems approach.
- Describe some relevant risk measures, their potential uses and their limitations.
- Integrate many aspects of ERM discussed to this point.
SECTION 8: ECONOMIC CAPITAL

Introduction

Economic capital is an important enterprise risk management tool that assists companies in evaluating and managing their existing and potential risks. As such, economic capital can make an important contribution to strategic decision making.

Objectives

After you complete Section 8, you will be able to:

- Define and use economic capital in enterprise risk management (ERM).
- Describe the value of economic capital in enterprise risk management (ERM).
- Describe the elements of an economic capital model.
- Describe a process for developing an economic capital model.
- Develop an economic capital model.
- Describe the advantages and disadvantages of various economic capital models.
SECTION 9: PUTTING IT ALL TOGETHER

Introduction
This section takes what you have learned earlier in the module about topics related to enterprise risk management, such as operational risk, and suggests ways to include them in the strategic planning process. Challenges and potential future developments are discussed. Reputational risk, which takes a long time to build and little time to destroy, provides an example where advance planning can be the best mitigation strategy.

ERM Framework Review
In this section we will discuss how strategic risk management optimizes the result after the other components of ERM have been considered.

The components we’ve considered in previous sections include:

- Risk management culture.
- Risk control processes.
- Extreme event management.
- Regulatory considerations.
- Rating agency assessments.
- Risk models and capital models.
- Strategic risk management.

Objectives
Optimization of the risk and reward relationship is the key to strategic planning. Prioritization of resources to address all types of risks, leveraging existing projects, will implement the SOA motto, “Risk is Opportunity.”

After you complete this section, you will be able to:

- Explain how various strategic planning alternatives would affect risks taken and results achieved.
- Propose solutions to exploit risk knowledge.
- Describe how company size can affect effective ERM strategies.
- Discuss the future of risk management theory and techniques.
- Leverage existing tools for use in ERM and strategic planning.
- Discuss the challenges facing someone setting up a risk unit.

END-OF-MODULE TEST

END-OF-MODULE EXERCISE