

Measurement and Management of Operational Risks

Instructor: Jerome Yen, Visiting Professor, Dept. of Finance

e-mail: jyen@ust.hk or risksolution@gmail.com

Tel: 2358-8204

Office: 4382B

Office Hours: TBD

Teaching Assistant:

Mr. Peter Xiang, e-mail: hkxy@ust.hk,

Introduction

In recent years, regulators and the financial institutions have recognized the importance of measurement and management operational risk, particularly in Asia countries like China and Hong Kong. According to a recent survey, in Asia about 90 percent of banks consider operational risk as important as market or credit risks. In China, operational risk and morale hazard have been considered the major sources of risks for banks. For one bank in Hong Kong, over the past five years, from the public sources, the operational risk related events have created over 10 billion RMB financial damages. However, this is just the tip of the big iceberg that many people believed only less than five (5) percent of operational risk related frauds or incidents had been caught or reported. Also the nature of the operational risks in the western countries and in China or some Asian countries are quite different that the losses from operational risks in western countries were mostly the expected losses, however, the losses of such risks in Asia were mostly unexpected losses that came from extreme events.

Developments on the use of highly automated technologies, such as, Straight Through Processing (STP), the growth of use of e-banking, e-finance, and ATM, the growth of complexity of financial services and products, the increase of globalization and overseas branches, the trend of large-scale mergers and acquisitions (M&A), as well as the increase of outsourcing all indicated that the operational risk exposures are substantial and growing. As a result, there is an increasing demand on sound operational risk management at financial institutions especially after the introduction of Basel II New Economy Accord, in which operational risk was the first time to be included in the calculation of capital adequacy requirement (CAR). The banking industry is currently undergoing a surge of innovation and development in such areas to develop sound operational risk management practices and systems. However, lack of experienced and knowledgeable operational risk managers is a challenge to the financial institutions. The major reason is that management of operational risks and auditing are quite different. Auditing is focused on understanding or tracing something already happened, or what defined - post-event or post-transaction. Also, it is more on the compliance of accounting rules or procedures. However, management of operational risks is more on the proactive prevention of frauds or business disruption of financial institutions that cover four areas: employees, process, systems, and external attacks. Therefore, the needed skill set is quite different and a course that covers such materials is needed.

Financial institutions also facing some challenges, such as, what is operational risks and what is its scope? Should financial institutions be concerned with operational risks? If so, how should they be assessed and intelligently integrated with other risks? What are the best practices for the measurement and management of operational risks? In this course, we will provide the first discussion and an up-to-date treatment of all these issues.

“Tentative” List of Topics to be covered:

Part 1: Evolution, Regulation and Control

1. Week 1 – Introduction and Famous Operational Risk cases
2. The rationale for regulation, corporate governance and responsibilities of management – monitoring, auditing, internal control, fraud prevention, and shareholder value improvement
3. The potential impacts of Basel II on the financial industry and a critique of operational risk regulation and control

Part 2: What is Operational Risk? How to separate operational risk from other risks?
Process, People, Systems, and External Environment

4. The Basel framework of operational risk: people, system, process, and external environment
5. Gap analysis and understanding the process
6. Event identification, reporting, and validation: building databases for internal and external frauds – Fighting Rouge Trading
7. System and security: disruption, systems failure, contingency plan, and damage control
8. Legal Risk and Prevention of Morale Hazard: training, education, business ethics, and employment practice

Part 3: Modeling and Measurement of Operational Risks

9. Understanding the models: mathematical background, normal distribution and EVT
10. Compare the BIA, Standardized, and AMA.
11. Implementing the internal measurement approach and the loss distribution approach
12. Data mining, Bayesian Network, and identification of key risk indicators (KRIs)

Textbook:

1. Operational Risk: Regulation, Analysis, and Management by Carol Alexander, 2003, Prentice Hall (Optional).

Grading:

1. Final Exam: 40 percent
2. Group Report (up to two members per team): 50 percent (divided into two parts: proposal (10 percent) as well as final report and presentation (40 percent) also there are two alternatives for students: Case study and quant analysis.
3. Participation: 10 percent