Understanding & Managing Risk

Developing Risk-Thinking

I. Objectives & Course Design

Business, investments, and personal decisions are all about taking calculated risks. There is rarely an important decision where uncertainty and risk are not a key determining factor. This course is about helping participants better understand, assess, and manage risk in a wide cross section of scenarios.

The class considers Risk Management more Art than Science. We start with a discussion of the different types of business risks senior managers face in today’s interconnected global environment and explore the effectiveness of different risk management tools. The course provides students with a framework to assess and manage risk in a variety of professional settings and generates a critical discussion of the present best practices.

By injecting a good dose of skepticism towards so-called perfect solutions and close-end systems, it will become clear that a major shift in the mindset of individuals and corporations is required to recalibrate the risk management functions in corporations and make Risk Management part of the established management processes.

The students will be asked to go beyond the statistical side of risk measures, understand the necessity to seamlessly integrate the judgment of risk and risk management into the business flow and will in the process explore the reasons behind some of the more spectacular failures of risk management in recent history.
II. Readings

**Required readings:**
Posted in the course website

Please note that reading the cases is not a proxy for preparation: you are advised to actively analyze the situation, work out tentative scenarios (using spreadsheets if appropriate), and eventually discuss the implications with your group members. This will maximize the learning benefits that you draw from this course.

**Optional readings:**
These readings will be made available on the course website ONLY. They provide additional perspectives on topics covered in the required readings. You are only accountable for the required readings, but those of you interested in becoming deeper involved in the subject should not be afraid to go the extra mile.

III. Grading

The following weights determine your final course grade:

- **40% are based on individual class participation**
- **60% are based on case memos**

**Individual class participation:** Active class participation is very important for this course. Both quantity and quality of your comments count. Because so much of the learning in this course occurs in the classroom, it is crucial that you attend every class. If you have to miss class, for one reason or another, please notify us in advance by e-mail. Because of the importance of individual participation, low class participation is likely to lead to a low final grade. Please note, in particular, that **2 (or more) absences (excused or unexcused) are a reason for a failing grade.**

Note that participation in session 1 is mandatory. No exceptions will be granted.

**Case memos:** Each group must hand in one **two-page memo for each case** (except for the case of Session 1, see details below). Memos are due at the beginning of class. Each memorandum should be in print and double-spaced. The two-page limit is for text only. You may attach as many numerical calculations as you wish. Memoranda will not be accepted after the class has met. A memorandum will be given credit if it is handed in and no credit if it is not. Memos will not be returned.

IV. Summary of Due Dates

Submission of **groups:** deadline before session 2, by email to Ansa Mohammad.
V. Administration and Office Hours

The best way to contact us is by e-mail. If you would like to schedule an appointment, please contact the course assistant, Ansa Mohammad at her extension 9296 or you can email her at ansa.mohammad.insead.edu. She will also be your main contact for administrative issues regarding submissions, course material, etc.

VI. CLASS SESSIONS

Below is the session plan for the course. All readings are either part of the course package, posted on the course website, or will be handed out during the course. Individual cases are subject to change with a minimum of 1 week’s notice.

NOTE: ALL optional readings will be available on the website only!

1. Decision Making with Risk and Uncertainty

(Enrico DIECIDUE)

Limits to predicting the future accurately is something that we all experience in most domains of our lives, be it business, investments, or even personal pursuits including happiness. We always look to develop “models” to accurately predict future outcomes. In doing so, however, we often go too far and often end up underestimating the role of chance and what we don’t control, hence falling prey to “illusion of control” with all its costs, especially in terms of risk management. On the other hand, there is much to gain by giving up the illusion of control and embracing uncertainty. A recently published book Dance with Chance co-authored by Sypros Makridakis, Robin Hogarth and Anil Gaba suggests that by accepting the role of chance and trying to take advantage of the opportunities it creates, it is possible to attain more beneficial outcomes. This is called the “paradox of control.”

Case: “Fashionnet Ltd.” (INSEAD case)

Please answer (individually, no written memo requested) the following questions:

1. From the perspective of Uropa’s CEO or senior partners, what are the key strategic challenges for Uropa Partners in 2008? What are the key drivers of their business? What is essential to guarantee a profitable future for Uropa as a firm?
2. From a deal team member’s perspective, what are the most important criteria when thinking about a potential investment in Fashionnet? What other factors could be considered?
3. What are the key attractions and key risks of a potential investment in Fashionnet?
4. Would you invest? Why/why not?
2. Nudges Towards Better Appreciation and Assessments of Uncertainty

(Enrico DIECIDUE)

This will be a follow up to the first session, in terms of some recent and ongoing research on how to better assess risk and uncertainty, at a general level. The point here is not to argue more or less of quantitative model, more or less of gut feel, but to present some easy-to-implement processes for improved judgments on risk and uncertainty.

No pre-readings, but further readings on the topic would be suggested for those interested after the session.

3. Risk Assessment & Identification - The Vital First Step

(Claudia ZEISBERGER)

Case: United Grain Growers Limited (A) (HBS case 9-201-015)

How do corporations assess & manage the risks they are exposed to? And how do they adapt on an ongoing basis to the changing market environment?

How do they ensure that their risk management processes and frameworks are up to date?

The session will provide a framework and an insight into best practices for:

- Risk identification
- Risk assessment
- Risk management
- Risk structuring: reduce – share – insure

Reading: “Why Manage Risk?” (HBS case 9-294-107)

Please address the following questions for your case:

1. Describe briefly the business model for UGG. Will internal resources be sufficient for their strategic plans over the next 2 years?

2. Like most firms, UGG faces a variety of risks. What elements of the business (revenues, costs, investment needs, ability to raise funding) might be affected by each risk? (particularly Weather risk) Which executives in the firm are responsible for handling the risks listed in Exhibit 5 & 6 and how can UGG modify its exposure?

3. Why should UGG (or any other firm) worry about these risks if investors can diversify them away? (Note: think about the imperfections in the commonly used models. Ask: How can firms change their cash flows & affect value in ways that investors cannot on their own? Might managers & investors judge the “acceptable” level of risk differently?

4. What does the “Earnings at Risk” (EaR) number capture? (page 7 of the case). Conceptually, what steps would you need to work through, to arrive at an EaR for Weather? Would the firm’s total EaR be the sum of the numbers in Exhibit 6, assuming these were the only risks faced by UGG?
4. & 5. Integrated Risk Management in Global Corporations
(Claudia ZEISBERGER)

After defining the concept of “Firm-wide risk management” and the importance of its integration into the day-to-day business of any organization, we will take a closer look at industry best practices as well as limitations of risk management with an eye on some of the Risk Management disasters in history. This will give us the right framework to move on to specific industries in later sessions.

Risk Management touches all parts of any business and attempts to give departments within institutions a high level of entrepreneurial freedom within clearly defined boundaries to ensure consistent parameters. It covers:

- Credit risk
- Market risk
- Operational risk
- Regulatory compliance and of course
- Reputational risk


(Claudia ZEISBERGER)

Case: How Long Term Capital became Short Term Debt or Value at Risk – Too much Faith in “One Number”?

The session will discuss the theoretical concept behind Value-at-Risk (VaR) and its practical implementation across the organization of an investment bank. VaR is a method to describe probabilistically the market risk of a trading portfolio across asset classes, an attempt to turn “risk” into “One Number”.

We will discuss the following questions:

- Why did VaR cause such a shift in risk management procedures in the mid-90s?
- What are the pros and cons of VaR?
- How reliable is VaR in normal market environments?
- Can it deal with “Black Swan” events?
Case Assignment:

1. Draw a time line and describe the milestones that triggered changes in overall risk taking behaviour starting in January 1998 leading up to September 1998. Explain the cause(s) and effect with regards to LTCM's position adjustments, by highlighting:
   - Market events & their probability
   - Respective price movements, showing the positioning & outlook of the market participants
   - Development of LTCM’s leverage

2. Why did VaR & VaR-limits not highlight the increasing risk exposure of a fund that had been consistently successful prior to 1998?

3. Any conclusions you would draw concerning statistical assumptions such as correlation, market volatility & historical data in general?

4. Now think about some of the most recent events that have made the headlines since October 2008. 11 years on, can you draw parallels concerning the behaviour of the different players in the market? Should the events in 2007/08 and their consequences have come as a surprise?

5. Assume you are in charge of the risk management at a large, globally active and well diversified fund manager. What would be your top-3 lessons learned from the LTCM debacle?

6. OPTIONAL:
   Take a stand and discuss the following quote:
   “LTCM became the victim of a classic squeeze by the arbitrageurs it competed with. The drama of Wall Street sharks eating one of their own is chronicled in Lewis’ Times article.”

To complete our discussions, we will review the major guidelines within the Basel I & II guidelines from the BIS (Bank for International Settlement), and of course the implications of the recently announced Basel III guidelines for the financial community as a whole.

Readings: “Big losses & what we can learn from them”; John C. Hull (Chapter 18 from “Risk Management & Financial Institutions”; Pearson Education 2007)

“The Paradox of Market Risk”; Richard Bookstaber; (Chapter 1 from: “A Demon of our own Design”; Wiley 2007)

Optional: The End; Michael Lewis; December 2008
http://www.mutualfundsbureau.com/docs/PortfolioMagazineArticle.pdf
6. Managing Strategic Risks

(Javier GIMENO)

Strategy is about searching and capturing opportunities. But, in an uncertain world, reaching for opportunities carry some associated risks. For most organizations, the largest sources of risks are based on the long-term fundamentals of their business model (demand and supply trends, technology, and competition). These are risks that cannot be insured, and typically cannot be effectively hedged through financial instruments. However, strategic choices determine the level and type of exposure of the firm to particular strategic opportunities and risks. The role of strategy is to determine (a) whether the company is exposed to the right opportunities and associated risks, and (b) how to explore and exploit the opportunities while reducing the associated risks.

In this session, we will discuss how to integrate strategic analysis and risk management. We will examine how particular strategic choices mitigate or amplify particular risks. We will also discuss what risks a company owns and manages, and which ones should be shared or outsourced. Although the discussion will focus on a context of long-term sourcing risks, we will explore a general framework about strategic flexibility and a tool for strategic risk exposure.

**Readings:**

“Owning the Right Risks”
(HBR article by Buehler, Freeman and Hulme; Sept 2008)

Optional:

“Managing Cyclicality in Chemicals”

**Case:**

“Generate or Buy? Nordeutsche Affinerie long-term sourcing strategy “ (INSEAD case)

Please answer the following questions:

1. Examine the strategy of Nordeutsche Affinerie in the copper smelting market. How exposed is the company to volatility of electricity prices in Germany? How could the company manage that risk exposure?

2. If you were Dr. Marnette, CEO of Nordeutsche Affinerie, which of the four proposed strategies would you favor (futures contracts, minority participation in Electrabel’s coal plant, joint venture for a waste plant, or 100% own coal plant)? Provide a qualitative and quantitative analysis of the long-term energy sourcing options considered by NA.
7. Disruption Risk in Supply Chains
(Enver Yücesan)

With a global footprint, disruption risk in supply chains has drastically increased. Risk, however, cannot be used as an excuse for lack of operational excellence. The objective of this session is to identify the key drivers of disruptions in global supply chains ranging from infrastructure failures to political developments. We will then discuss operational counter-measures to minimize such disruptions. Only then, we can talk about residual risk, which must be addressed within the context of an enterprise risk management framework.

Case  MD & VA Milk Producers Cooperative, INSEAD Case 01/2013-5921
(Optional) “Risk Management and Operational Hedging: An Overview”, Van Mieghem, Handbook of integrated risk management in global supply chains

Discussion Questions:
1. What are the key sources of risk for Maryland & Virginia?
2. What is the potential Maryland & Virginia impact of each of these risks from a financial, operational, and reputational perspective? Prioritize these sources of risk by putting them on a 'risk matrix' that reflects likelihood versus impact.
3. What mitigation strategies exist for the top five risk sources?
4. Assess Maryland & Virginia’s overall risk preparedness. What potential improvements do you suggest?

8. Hedging to Manage Procurement Risk
(Enver Yücesan)

Effective supply chain management necessitates the identification and management of various sources of residual risk. One such risk occurs in the procurement of commodities where it is not possible to establish close relationships with suppliers. Various hedging instruments can then be used to limit the downside risk, namely spend at risk. In this session, we will introduce a general framework for analyzing, assessing and mitigating procurement risk, review risk hedging approaches, introduce Monte Carlo simulation as an effective decision support tool, and discuss the organizational infrastructure necessary to implement a robust risk management strategy.

Case: Supply Risk Management at Unilever INSEAD Case Study
1. What are the key challenges in commodity buying?
2. What type of an organizational infrastructure must be in place before hedging tools can be used?