Financial Risk Management (TM5026)

Instructor: Jerry T. Yang

Fall Semester, 2004
Class Hours: Thursdays 3:20 ~ 6:10 p.m.
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Course Description:

Risk management is the process of making and carrying out decisions that minimize the adverse effects of accidental losses. It involves six steps: **(1) Identifying** exposures to loss; **(2) Measuring** risk factors; (3) Examining alternative techniques; (4) Selecting the best techniques; (5) Implementing the chosen techniques; and (6) Monitoring and improving the risk management program. **This course will focus on the first two steps.**

For instance, we will discuss how to measure <1> **Sensitivity** of each risk factor on associated assets and liabilities (A&L); <2> **Durations** of associated A&L; <3> **Interactions** among risk factors; and <4> **Value at risk** (**VaR**), which is a statistical measure of downside risk or the total portfolio risk. VaR estimates exposure to market risks by stating the worst loss at a specified confidence level. This course is intended to provide students with a comprehensive presentation of the measurement and applications of **Value at Risk.**

There are two basic categories of risks: **(1) Product market risks** -- relate to variations in the operating cash flows of the firm; and **(2) Capital market risks** -- relate to variations in value associated with different financing instruments and required rates of return in the economy. Despite the fact that the risks in both markets are interdependent, we can only emphasize, due to time limitation, the latter: capital market risks, which include (1) Interest rate risk; (2) Liquidity risk; (3) Currency risk; (4) Settlement risk; and (5) Basis risk.

Course Materials:

Required textbook:

Risk Management: Problems & Solutions edited by William Beaver and George Parker, Stanford University

Reference Books:

(1) *Measuring Market Risk*, by Kevin Dowd, 2002, John Wiley & Sons.

(2) *Financial Risk Manager Handbook (2nd edition)*, by Philippe Jorion, 2003, John Wiley & Sons.

(3) *Risk Management --- Approaches for Fixed Income Markets*, by Bennett W. Golub and Leo M. Tilman, 2000, John Wiley & Sons.

(4) *Financial Risk Manage --- A practitioner¡¦s guide to management market and credit risk*, by Steven Allen, 2003, John Wiley & Sons.

(5) *RiskMetrics*TM *--- Technical Document(4th edition)*,1996, J.P. Morgan/Reuters.

(6) *CreditMetrics*TM *--- Technical Document*,1997, J.P. Morgan.

(7) *When Genius Failed: The Rise and Fall of Long-Term Capital Management* by Roger Lowenstein, 2000, Random House.

Class notes and other readings are available through *http://qf.nthu.edu.tw/~jtyang*.

Grading:

Item	Final Exam	Written Reports	Matlab Assignments	Oral Presentation	Class Contribution
Weight	20%	30%	15%	25%	10%

Policies:

- Academic dishonesty will not be tolerated.
- There will be no make-up work for extra credit to improve your grade.
- Students are responsible for the grade they earn. It is not considered professional to beg for a grade which has not been earned.
- No late assignments will be accepted.