Prof. Allan Timmermann
UCSD

Fall 2003
Economics 174

Financial Insurance

Required Text

John C. Hull "Fundamentals of Futures & Options Markets". Prentice Hall (4th Edition 2001).

Topics and Readings

This is a course on financial risk management that addresses how firms and individuals can use financial instruments to insure against risk factors. The course starts out describing some of the main risk factors that corporations are faced with such as fluctuations in exchange rates, interest rates and oil prices. It then introduces financial assets such as credit, weather, energy and insurance derivatives that can be used to hedge against these types of risk. After an in-depth introduction to futures/forwards markets, we discuss which types of risk the firm should and shouldn't hedge against in relation to bankruptcy risk, taxes and managerial incentive effects. Finally, the course covers the pricing of options contracts and their use in investment and financial insurance strategies.

I. Introduction - Basic Concepts

1. Sources of risk: exchange rate, interest rate and oil price volatility. Examples of hedging strategies. Special report on insurance in The Economist, March 8, 2003.
2. Financial derivatives: futures, options, credit, weather, energy and insurance derivatives. Hull ch.20.
3. Risk Pooling and Risk Sharing. Hedgers and Speculators. Hull ch.1.

II. Futures/Forward and Swap Markets

1. Mechanics of Futures and Forward Markets. Hull ch.2.
2. Pricing of Futures and Forward Contracts. Arbitrage Pricing. Hull ch.3
3. Hedging Strategies with Futures. Hull ch.4.
4. Interest Rate Management. Orange County Bankruptcy case study. Hull ch.5.
5. Swaps. Hull ch.6.

III. Measurement and Management of Risk

1. Measuring risk. Value at Risk. Downside risk. Hull ch.16.
2. Evaluating risk: A review of some basic principles in finance. Diversifiable, systematic risk. Hedging irrelevance proposition.
3. Risk management in imperfect capital markets: bankruptcy risk, taxes, managerial incentive effects. Lisa K. Meulbroek, A Senior Manager's Guide to Integrated Risk Management. *Journal of Applied Corporate Finance*, 2002, 14 (Winter), 56-70.
4. Why do some insurance markets not exist? Moral Hazard, Asymmetric Information, Adverse Selection. George Akerlof, *Quarterly Journal of Economics*, 1970, 84, 488-500.

IV. Options Markets

1. Introduction to Options Markets. Hull ch.7.
2. Basic Principles of Stock Option Contracts. Hull ch.8.
3. Investment Strategies and Payoffs from Options Strategies. Hull ch.9.
4. Pricing Stock Options I: The Binomial Model. Hull ch.10.
5. Pricing Stock Options. II: Black-Scholes. Hull ch.11.
6. Risk management with options. Hull ch.15, pages 299-321.
7. Portfolio Insurance. Hull ch.15 pages 321-26.

Course Resources

Announcements regarding the course will be made on the course web page at

http://econ.ucsd.edu/~atimmerm/174

You can find course assignments, data and a copy of the course syllabus on this homepage.

Office Hours

Tuesdays, 2:-4pm in Econ 318. You can also reach me by e-mail at *atimmerm@ucsd.edu* or by setting up a personal appointment.

Grading

Course requirements and grading weights are as follows:

Problem sets: 20%

Midterm Exams: 15% each (scheduled for Tuesday October 21 and Thursday, November 13)

Final Exam: 50%