

Futures and Options (B40.3335)

Summer 2008

Professor Menachem Brenner

Course Description: This course consists of two parts. The first part of the course deals with the structure of futures markets, pricing of futures contracts and hedging with such contracts. The second and larger part of the course deals with options markets; strategies, pricing and position analysis. The course will consist of lectures, discussions, problem solving and market tracking.

Prerequisites: All core courses. This course requires a basic knowledge of futures and options. Remind yourself of the basic features of futures, calls, puts and payoff diagrams.

Exams and Grading: Due to the intensive nature of this course, there will only be a final exam (multiple-choice). Class participation may improve your grade. The grade distribution is: A (20%-25%), B (50%-60%); C (10%-15%); D, F (remainder if any).

Problem Sets: Posted on Blackboard. The answers will not be collected. Solutions to the problem sets will be provided after you have had a chance to solve them. Additional problems will be discussed in class.

Required Material: You are responsible for material covered in class, handed out in class and announced in class, and for material posted on Blackboard and sent by e-mail.

Required book: John Hull (H) Options, Futures and Other Derivatives, Prentice Hall, 2005. The book comes with a **futures/options software CD**. The book is not a substitute for the lecture notes. Some topics and details are not covered by the book.

Recommended books: Robert McDonald, Derivatives Markets, Addison Wesley, 2006.

Market Tracking: You are expected to follow the markets on a daily basis. In particular, you should pay attention to 'fair value' of Gold, SPX and NDX futures and implied volatility from index options (e.g. VIX, VXN). **A couple of market tracking questions may appear on the exams.** Your internet 'favorites' should include; NYMEX, CME, CBOE, **iseoptions, optionmetrics**. You are also expected to read the financial press. Pay special attention to the futures and options columns in the **WSJ**. You may also be interested in reading **RISK and the Economist**.

Class Attendance: Students are expected to attend all classes and be **on time**.

Class Schedule: July: **1, 3, 8, 10, 13 (all day), 15, 17, 20 (all day), 22, 24 (Review and Exam)**.

Office Hours: Tuesday 2:00-3:00, Wednesday 5:00-6:00 and by appointment. Rm. 9-55 KMEC.

Homepage: Other information appears on the Stern Web Site (stern.nyu.edu/~mbrenner).

Course Outline

Required Textbook: John Hull (H): Options, Futures and Other Derivatives, Prentice Hall, 2005, 6th edition.

I. Overview of Derivatives Markets (H: Ch.1)

II. Futures Markets

1. Forward and Futures: Overview/Comparison
2. The Structure of the Futures Markets (H: Ch. 2)
3. The Cost of Carry Model (H: pp. 99-119)
 - a) Arbitrage Pricing; **Gold Example**
 - b) **FX** forwards , **Stock Index** Futures
4. Hedging with Futures (H: pp. 47-62)

III. Options Markets

1. Options Strategies and Markets (H: Ch. 8, 10)
2. Options Valuation
 - a) Arbitrage Conditions (H: pp.205-212, 215-220)
 - b) Put-Call Parity (Extended) (H: pp. 212-215)
 - c) The Binomial Model (+ The American Put) (H: pp.241-252)
 - d) The Black-Scholes-Merton Model (H: pp.281-291, 293-298)
 - e) Sensitivity Analysis (the Greek letters) (H: pp. 341-362)
 - e) Volatility; “smiles” and “skews” (H: Ch.16)
3. Options on FX, Indices, Futures (H: pp. 313-322)
4. Risk Management (H: pp. 435-442)
5. Exotic Options (H: Ch.22)