Futures and Options (B40.3335)

Summer 2011

Professor Menachem Brenner

Course Description: This is a course in derivatives markets: structure, valuation and strategies. The main applications include the equities markets, foreign exchange and commodities. It has two parts: The first part deals with the structure of forward and futures markets, pricing and hedging. The second and larger part deals with options markets; strategies, pricing and position analysis. It includes topics like: Value at Risk, Exotic Options and Volatility Derivatives. 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 (closed book, multiple-choice). Class participation may improve your grade. The grade distribution is: A (25%-30%), B (50%-60%); C (5%-10%); D, F (remainder if any).

Problem Sets: Posted on Blackboard. Solutions to the problem sets will be provided after you have had a chance to solve them. Additional problems will be presented and 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: Hull John (H) Options, Futures and Other Derivatives, Prentice Hall, 2008. The book is not a substitute for the lecture notes and class discussions. Some topics and details are not covered by the book.


Market tracking, internet and the financial press: You are expected to follow the markets on a daily basis. In particular, you should pay attention to ‘fair value’ of Gold, Silver, Oil, SPX futures. ETFs like SPY, QQQQ 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; 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 and FT. You may also be interested in reading RISK and the Economist.

E-mail: Check your email regularly for additional material, announcements, assignments.

Class Schedule: July: 14, 19, 21, 24 (9-12, 1-4), 26, 28. August: 2, 4, 7(9-12, 1-4), 9 (Review and
Final Exam).
Office Hours: Wednesday 4:00-6:00 & by appointment. Rm. 9-55 KMEC.
Homepage: Other information appears on the Stern Web Site (stern.nyu.edu/~mbrenner)

Classroom Responsibilities:
Class Attendance: Students are expected to attend all classes and be ON TIME.
Cell phones: You should turn off your cell phone before you enter the class.
No Laptops, Blackberries, or any email/internet devices are allowed in class.
Honor Code: You are responsible for maintaining Stern's honor code.

Course Outline


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)

   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.201-208)
   b) Put-Call Parity (Extended) (H: pp. 208-216)
   e) Options on FX, Indices, Futures (H: pp. 330-335)
   f) Volatility; “smiles” and “skews” (H: pp. 389-397)
   g) Sensitivity Analysis (the Greek letters) (H: pp. 357-376)

3. Risk Management (H: pp. 451-453)

4. Exotic Options (H: Ch. 24, optional)

5. Applications: Structured Products, ESO