TOPICS IN INVESTMENTS
DERIVATIVES MARKETS: ANALYSES & APPLICATIONS (B40.3176)
Fall 2010

Professor Menachem Brenner

Course Description: In this advanced course we discuss various aspects of derivatives: markets, instruments, strategies, applications, regulation. These will include: The role of derivatives, portfolio insurance, volatility derivatives (e.g. VIX), implied volatility "skews", trading volatility, hedging and speculation, designing derivative instruments and markets. The meetings will include presentations by prominent guest speakers.

Guest Speakers: Here is the list of speakers.

Gary Gastineau, ETF consultants
David Hait, President of optionmetrics.com.
David Krell, Chairman of the ISE.
Prafulla Nabar, Structured Products, Bloomberg

Prerequisites: Futures and Options (B40.3335) or the equivalent. You should know the basic models used in futures and options. The material covered in the Foundations of Finance (B01.2311) is not sufficient.

Exams and Grading: Students will have two options: 1. Take the final exam (weight 100%). 2. Take a final quiz and do a short project which will count for 70% of the final grade. Class participation may improve the student’s grade. The grade distribution is: A (25% - 30%), B (50% - 60%), C (10%), D, F (remainder).

Required Material: You are responsible for the material covered in class, handouts provided in class and for e-mail messages.

Recommended books: 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. A futures/options software CD is attached.


Office Hours: Tuesday: 4:00-6:00 and by appointment. Room KMC 9-55.

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Course Topics

I. REVIEW OF DERIVATIVES; THEORY AND PRACTICE

A. Futures Markets and ETFs; Structure, Cost of Carry Model, Index Arbitrage. Discuss Amranth, LTCM, MG

B. Options markets; Models: P-C-P, Binomial, B-S-M, Other (CEV), Greeks, VAR

II. ANALYSIS AND APPLICATIONS

PORTFOLIO INSURANCE
Dynamic hedging vs. Static hedging

INNOVATIONS; Structured Products
Plain Vanilla/Exotic (SPINS)
Strategies/Products

DESIGNING MARKETS AND INSTRUMENTS
Electronic/Pit Trading (Market Making)
Design issues; Contract Specifications

DERIVATIVES REGULATION
OTC Derivatives and Clearing
Position Limits
Circuit Breakers

VOLATILITY (Estimation and Trading Vol.)
Volatility Indices: VIX, VXN, Variance swaps
Realized and Implied Volatility (“Skews”, term structure)
Trading Volatility (VIX Futures and Options, Straddle Options)
The V-lab