

B40.3176 Topics in Investments—Commodity Derivatives

New York University Stern School of Business

Course Syllabus Fall 2008

Title: Topics in Investments – Commodity Derivatives

Time and Location: Class will start on Thursday, November 6th (6:00-9:00 p.m.) and end December 18, 2008. The class will meet in the Kaufman Management Center Building located at 44 West Fourth Street, Room 2-80.

Professor: Dr. Michael S. Haigh
Email: mhaigh@stern.nyu.edu
Office hours: After class – please contact TA.

Course Objective: The purpose of this course is to extend the student's knowledge of commodity derivatives. While we will focus mainly on energy markets but we may use examples from other commodities, such as agriculture or metals. Selected topics include a review of futures, options and swaps, tests for market efficiency, risk premia, cash and futures price behavior, brief review of the principles of options pricing (Binomial models and Black Scholes), commodity option trading strategies, swaps, speculation and arbitrage. Some attention will be given to the use of commodity futures and options contracts for risk management, by rigorously exploring the theory and practice of hedging. Speculative trading in commodity derivative will be highlighted and current derivative contract issues and controversies will be highlighted and discussed. The use of commodities as a diversification tool and commodity price relationships to equities and inflation will be explored. Applications of basic time-series analysis to futures and options will be explored. Several guest speakers from the energy trading world will hopefully come to class.

Prerequisites: It will be assumed that you have a basic understanding of elementary calculus, and some basic graduate level econometrics and a basic understanding of futures and options markets

Required Readings:

1) Hull, J.C., *Options, Futures, and Other Derivatives*. 7th Edition, Prentice Hall 2009

The text is meant to provide a background on materials that will be covered in more detail in the classroom. Although the text tends to focus more on financial derivatives, the student should be able to apply the principles from the text to any type of derivative contract. The text is designed to provide an 'anchor' for the course. I will not follow the book directly but you should supplement lecture notes with the material in the book. We may refer to certain parts of the book throughout the course.

2) Marthinsen, J., *Risk Takers: Uses and Abuses of Financial Derivatives*. Pearson Addison-Wesley 2005. This text provides several cases studies, some we may discuss throughout the semester. This book will be on reserve in the library

Evaluation: Exam 100%

Two assignments will be distributed (but not graded) throughout the semester and answers will be posted on blackboard. These assignments are extremely important in helping you prepare for the exam – Exam is similar in format. Do the assignments and DO NOT look at the answers before trying the questions. There is no make up exam! Don't miss the final!!

Examination Schedule:

Final Exam

Dec 18 2008

Subject Matter of the Course and Tentative Schedule:

	<i>Date</i>	<i>Subject Material</i>	<i>Readings</i>		
Lecture 1	Nov 6th	Brief Review of Futures and Options OTC v Exchange Traded Commodities – Price Discovery Energy Market Manipulations – Case Study Design of Commodity Derivatives Contracts Commodities as a Diversification/Inflation Hedging Tool Regulation of Commodity Futures Markets Potential changes in the Commodity Trading Landscape Trader Participation and Price Discovery In Energy Trading Price Patterns – Cost of Carry Models Convenience Yield Commodity Supply and Storage Characteristics Contango/Backwardation	Chapters 1 & 2 (H) and Lecture notes and materials: ChickenandEgg.pdf Spud is a Dud.pdf CFTC Staff report on swap dealers. pdf Chapter 2 & 3 & 5 (H) Chapter 4 (M) Lecture notes and materials: GasStationsHedging.pdf Metallgesellschaft_Crisis.ppt		
Lecture 2	Nov 13th	Efficiency/Unbiasedness Risk Premia in Commodity Futures Prices Overview of Hedging – Effect of Basis Rolling Over Futures Contracts Case Study: Metallgesellschaft Determination of the Optimal Hedge Ratio Minimum Variance v Risk Return			
Lecture 3	Nov 20th	Hedging cont. Static v Dynamic Methods Hedging The Crack Spreads and Speculation Bull & Bear Spread, Crush Trading Commodity Options	Chapter 3 (H) Chapter 21 (H) Lecture notes and materials: See all documents in Lecture 3 folder Chapter 8 (H)	Assign. distributed	1
	Nov 27 th (no class)				
Lecture 4	Dec 4th	Profit and Loss Diagrams used in Options Trading Hedging with Options Put Call Parity Black Scholes & The Greeks,	Chapter 9 (H) Chapter 10 (H) Chapter 12 (H) Chapter 13 (H) Chapter 14 (H) Chapter 15 (H) Chapter 17 (H)		
Lecture 5	Dec 11th	The Greeks cont. Binomial Trees (if we have time) Efficiency of Options Pricing, Volatility Smiles, Implied Volatility, Relaxing Black Scholes Assumptions Applications used in Industry	Chapter 11 (H) Chapter 16 (H)	Assign. distributed	2
Lecture 6	Dec 18th	Final Exam			

About the Instructor

Michael S. Haigh is Managing Director Head of US Commodities Research, at Societe Generale Corporate & Investment Banking in New York City. In this role, Haigh manages a team that conducts analysis of supply and demand commodity fundamentals; forecasting prices using time series & structural modeling techniques, develops speculative and other strategies for commodity markets, oversees the development and employment of probabilistic forecasting models and interacts with traders and the structured products team in developing speculative and index strategies.

Immediately prior to Societe Generale, Haigh was the Associate Chief Economist for the U.S. Commodity Futures Trading Commission. While at the CFTC he authored several key reports on commodity markets including seminal reports on the role of hedge funds in energy markets and the effect of index trading on the pricing of commodity contracts. While at the CFTC Haigh was part of the Presidents Working Group that discussed oversight of hedge funds and derivative markets.

Haigh has held a tenured faculty position at the University of Maryland as Professor of Commodity Markets and has served on the faculty at Texas A&M. He has also taught at Johns Hopkins University, George Washington University and the University of Sydney. Prior to this he worked at the Economist Group in London. He has consulted with numerous financial and commodity corporations on optimal hedging and speculative strategies.

In addition to spearheading research, Haigh devotes a significant amount of his time speaking to the media about the commodity markets. He has appeared on CNBC and Bloomberg television and his reports have been cited in the Wall Street Journal, the Financial Times, the International Herald Tribune, Fortune magazine and Business week. His research on commodity and futures markets has been published in journals including Journal of Finance, Journal of Business, Journal of Futures Markets, Journal of Applied Econometrics and the Journal of Forecasting among many others. Haigh also has been a frequent spokesman on the commodities futures markets at the industry's leading conferences and roundtables. Dr. Haigh is the recent winner of the competitive research paper award in Market Microstructure at the U.S. Financial Management Association meetings and his research has been nominated for the Smith Breeden prize for outstanding article in the Journal of Finance.