2013

621 Options and Futures Markets

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COURSE OBJECTIVES AND STUDENT OUTCOME

The purpose of this course is to provide MBA students with an understanding of the evaluation, selection, and uses of derivatives.

Students should be able to discuss and understand with some depth the options market, option strategies, option boundary conditions, the Binomial and Black-Scholes Option Pricing Models, the futures market, using futures for hedging and speculation, the carrying-cost model, futures options, pricing futures options, the uses of derivatives in managing equity, fixed-income, and currency positions, the markets and uses of interest rate, currency, credit default, and derivative swaps, embedded options, and the other topics indicated below.

Williams College of Business Mission: “We educate students of business, enabling them to improve organizations and society, consistent with the Jesuit tradition.”

Office Hours: Monday and Tuesday: 5:00-6:00

Text:

Supplemental Material:
- Excel Programs, Solutions to Select End-of-the-Chapter Problems, and Bloomberg Guides are included in the disc accompanying the text.
- Assignments, Chapter PPTs, Solutions Manual, Excel Programs, External Links, and Bloomberg Information can be found on Blackboard.

Assignments:
- Assigned End-of-the-Chapter Problems. Problems will be assigned after a topic has been covered and posted in the “Assignment and Schedule” folder on Blackboards.
- Bloomberg Exercise: Exercises will be assigned after a topic has been covered and will be posted in the “Assignment and Schedule” folder on Blackboard. The exercise can be found in the “Assignment and Schedule” folder and the “Bloomberg Information” folder on Blackboard.
TOPICS

PART I: OPTION STRATEGIES AND MARKETS
  Chapter 1: Option Concepts and Fundamental Strategies
  Chapter 2: The Option Market
  Chapter 3: Option Strategies

PART II: OPTION PRICING
  Chapter 4: Fundamental Option Pricing Relations
  Chapter 5: The Binomial Option Pricing Model
  Chapter 6: The Binomial Pricing of Options on Dividend-Paying Stocks and Stock Indices
  Chapter 7: The Binomial Pricing of Options on Currencies and Bonds
  Chapter 8: The Black-Scholes Option Pricing Model
  Chapter 9: Applications of the Option Pricing Model, The Greeks, and Exotic Options

PART III: FUTURES AND FUTURES OPTION CONTRACTS
  Chapter 10: Futures and Forward Contracts
  Chapter 11: Pricing Futures and Forward Contracts
  Chapter 12: Options on Futures Contracts

PART IV: MANAGING EQUITY, CURRENCY, AND DEBT POSITIONS WITH DERIVATIVES
  Chapter 13: Managing Equity Positions with Stock Index Derivatives
  Chapter 14: Managing Foreign Currency Positions with Derivatives
  Chapter 15: Managing Fixed-Income Positions with Interest-Rate Derivatives
  Chapter 16: Managing Fixed-Income Positions with OTC Derivatives

PART V: SWAPS
  Chapter 17: Interest Rate Swaps
  Chapter 18: Swap Derivatives: Forward Swaps and Swaptions
  Chapter 19: Swap Valuation
  Chapter 20: Currency and Credit Swaps

PART VI: EMBEDDED OPTIONS AND ASSET-BACKED SECURITIES
  Chapter 21: Embedded Options
  Chapter 22: Mortgage- and Asset-Backed Securities and Their Derivatives
TESTS, GRADING, AND SCHEDULE

1. Tentative Test Dates:
   1) February 19: Test 1
   2) April 9: Test 2
   3) April 30: Final

2. Grading
   1st Test 30%
   2nd Test 25%
   Final: 35%
   Problems 5%
   Bloomberg Exercise 5%

3. Grading Scale
   93-100: A
   89-92: A-
   85-88: B+
   80-84: B
   77-79: B-
   74-76: C+
   65-73: C
   50-64: C-
   0-49: F

- Make-up tests will be given only to students who receive permission from me in advance of the test date.
- Modifications: The course outline, tests, schedule, and grading are subject to modifications during the semester.
SCHEDULE OF ASSIGNMENTS AND TESTS (TENTATIVE)

January 15: Chapters 1 and 2 Problems Due
- Chapter 1: Problems: 1 (do 4), 3, 4, 5, 6, and 7
- Chapter 2: Problems 3, 4, and 10

January 22: Chapter 3 Problems Due
- Chapter 3, Problems: 1 (do 3 by hand and 3 with the Excel program), 14, 15, and 16.
  Note: For the Excel part of the problem 3, hand in a copy of your tables and graphs. To copy and paste your graphs and tables of your strategies from the Excel worksheet, you will have to unprotect the sheet. The password for unlocking protection is opmopm. Don't forget to reset protection.

January 29: Chapter 4 Problems and Bloomberg Exercise 1 (1, 2, 3 & 10) Due
- Problems: 1: b, d, e, f, g, h, i, k, and l (Note: Include matrix proof that there are no liabilities at expiration), 8, 11, and 13.
- Bloomberg Exercise 1: Exercises 1, 2, 3, and 10

February 5: Chapter 5 Problems Due
- Chapter 5 Problems: 1, 2, 3, 6, 8, 11 (you may want to use Excel), 12 (a and b)

February 12: Chapters 6, 7, 8, and 9 and Bloomberg Exercises 1 (4-9) Due
  Do Problems using the Excel Programs:
- Chapter 6: 3 and 5 (use Excel program for 3-period cases)
- Chapter 7: 4 (use program for 3-period cases)
- Chapter 8: 1 (a and b; use B-S program), 4 (use B-S program), 5 (use B-S program), 15, 16, 19, and 20
- Chapter 9: Problem 6, a-d
- Bloomberg Exercises 1: Exercises 4-9

February 12: Test 1 Review

February 19: Test 1

March 19: Chapters 10, 11, and 12 Problems, Bloomberg Exercise 2 (1-5) and Bloomberg Exercise 3 (1, 2, 6, & 7) due
- Chapter 10: 4, 7, and 8
- Chapter 11: 3, 6, and 8
- Chapter 12: 6, 7, 9 (use BOPM Excel program), and 11 (use BS Excel program)
- Bloomberg Exercises 2: Exercises 1-5
- Bloomberg Exercise 3: Exercises 1, 2, 6, and 7
March 26: Chapters 13 and 14 and Bloomberg Exercise 2 (2 from 6-9) Due
- Chapter 13: Problems 4 (Note: Portfolio Value = $2,600,000, Beta = 1.1135), 5, 6, 7, and 8 (Note: Portfolio Value = $4,300,000; Dividends = $52,000), 11, and 12.
- Chapter 14: 3, 4 (you may assume a one-year period instead of 90 days for questions 3 and 4), 5, 10, and 11.

April 2: Test 2 Review

April 9: Test 2

April 16: Chapters 15-16 Problems and Bloomberg Exercises 4 Due
- Chapter 15: 1, 3(a), and 8(a)
- Chapter 16: 8, 9, 10, and 11
- Bloomberg Exercises 4

April 23: Chapter 17, 18, and 20 and Bloomberg Exercises 5 Due
- Chapter 17: 1, 2, 5, 9, 10, and 11
- Chapter 18: 2, 5, 8, and 9
- Chapter 20: 3, 10, 11, and 16
- Bloomberg Exercises 5

April 23: Final Review
- Review Chapter 15-20 Problems and Solutions
- Review Tests 1 and 2

April 30: Final