THE UNIVERSITY OF TEXAS AT AUSTIN
McCOMBS Texas MBA

Financial Risk Management
FIN 397.4 (section 03585)
Spring 2014

Instructor: Fernando Anjos

Location: CBA 4.304

Time: TTH 12:30PM- 2:00PM

Contact Info: CBA 6.318, fernando.anjos@mccombs.utexas.edu, 232-6825

Office hours: Fridays 2:00PM-4:00PM

TA: Adam Winegar, CBA 5.334N, adam.winegar@phd.mccombs.utexas.edu

---

I. Overview

This class presents the fundamental concepts and techniques of risk management. We mostly adopt the perspective of a non-financial corporation and we focus on financial risks; with some emphasis on applications (for example, managing risk associated with fluctuating oil prices). A key mechanism through which companies manage financial risk explicitly is through the use of derivatives (for example, forward contracts or options);[1] and so much of the course will focus on understanding how derivatives are used to manage risk. An integral part of this exercise is to understand how derivatives are valued.

At the end of the course, students should: (i) have a clear understanding of the economic rationale for risk management, and specifically the rationale for managing risk using derivatives; (ii) master the basic techniques for the valuation of forwards, futures, swaps, and vanilla options (calls and puts); (iii) master the basic techniques for engineering hedges using forwards, futures, swaps, and options; (iv) know how to compare different risk-management approaches (for example, deciding between the use of forwards vs. options), based on a clear risk-management output (for example, Value-at-Risk).

Finally, please note that the syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change due to unforeseen contingencies and/or to enhance the class learning opportunity. These changes will be communicated clearly.

[1] Many managerial decisions have consequences for the ultimate level of risk a company is exposed to (for example, capital structure or operational leverage). However, in order to study risk management as a separate discipline this is not a very useful approach (too broad).

Prerequisite: Graduate standing and Business Administration 285T or 385T. Additional prerequisite: Finance 286 and 397 (Topic 1), and credit or registration for Finance 394 (Topic 1: Advanced Corporate Finance).

II. Lecture guide

The table below describes the material to be covered in each class (with some references when appropriate—also see point V below). Lecture slides will be posted online on Blackboard and distributed in class.

Class no.	Date	Content
1	Jan-20, Tues	Class objectives and policies Basic notions of futures and options (1/2) • Hull, 2008, ch.1
2	Jan-22, Thurs	Basic notions of futures and options (2/2) Risk measures and the impact of derivatives
3	Jan-27, Tues	The economics of risk management (1/3) • Mainly based on: Froot, Scharfstein, and Stein, (1994); Stulz (1996); Adam, Dasgupta, and Titman (2007)
4	Jan-29, Thurs	The economics of risk management (2/3)
5	Feb-3, Tues	The economics of risk management (3/3)
6	Feb-5, Thurs	CASE 1: Hedging Currency Risks at AIFS
7	Feb-10, Tues	Mechanics of futures' markets • Hull, 2008, ch.2
8	Feb-12, Thurs	Hedging strategies using futures • Hull, 2008, ch.3
9	Feb-17, Tues	Review session
10	Feb-19, Thurs	EXAM 1
11	Feb-24, Tues	Determination of futures and forwards prices (1/2) • Hull, 2008, ch.5
12	Feb-26, Thurs	Determination of futures and forwards prices (2/2)
13	Mar-3, Tues	CASE 2: Hedging gone wrong – Metallgesellschaft • Based on Edwards and Canter (1995)

14	Mar-5, Thurs	Interest-rate futures, forwards, and swaps (1/3) • Hull, 2008 (selected parts of chapters 4, 6, 7)
15	Mar-24, Tues	Interest-rate futures, forwards, and swaps (2/3)
16	Mar-26, Thurs	Interest-rate futures, forwards, and swaps (3/3)
17	Mar-31, Tues	Review session
18	Apr-2, Thurs	EXAM 2
19	Apr-7, Tues	Option markets, properties of stock options, and option trading strategies (1/2) • Hull, 2008 (selected parts of chapters 8, 9, 10)
20	Apr-9, Thurs	Option markets, properties of stock options, and option trading strategies (2/2)
21	Apr-14, Tues	Valuation of options using binomial trees (1/3) • Hull, 2008 (selected parts of different chapters)
22	Apr-16, Thurs	Valuation of options using binomial trees (2/3)
23	Apr-21, Tues	Valuation of options using binomial trees (3/3) The Black-Scholes-Merton model (1/3) • Hull, 2008 (selected parts of different chapters)
24	Apr-23, Thurs	The Black-Scholes-Merton model (2/3)
25	Apr-28, Tues	The Black-Scholes-Merton model (3/3)
26	Apr-30, Thurs	Credit risk and credit derivatives • Hull, 2008, chs. 22 and 23
27	May-5, Tues	Review session
28	May-7, Thurs	EXAM 3

III. Homework assignments

The table below describes the content of homework assignments and posted/due dates. These dates may change depending on how fast we cover the material and/or due to weather-related class cancellations (any changes will be communicated via email/Blackboard). Case preparation can be conducted in groups of up to 4 students; the remaining homework assignments are to be completed individually.

HW no.	Date posted / Date due	Description
1	Jan-22 / Jan-29	Problem set on basic notions of derivatives and risk measures.
2	Jan-29/ Feb-5 (before class)	Read case and write answers to CASE 1.
3	Feb-12/ Feb-16	First problem set on futures and forwards.
4	Feb-26/ Mar-3 (before class)	Read case and write answers to CASE 2.
5	Feb-26/ Mar-5	Second problem set on futures and forwards.
6	Mar-26/ Mar-30	Problem set on interest rate futures, forwards, and swaps.
7	Apr-9/ Apr-16	First problem set on options.
8	Apr-21/ Apr-28	Second problem set on options.
9	Apr-28/ May-4	Third problem set on options.

IV. Grading

There will be three 100-point exams, each covering a subsection of the material; and each counting 20% towards the final grade. Failure to attend an exam will result in a grade of zero.

Homework assignments count 30% towards the final grade and are graded on a discrete 0-2 scale, where 0 is assigned if the homework is not handed in or is almost totally incomplete, 1 if it is visible that the student made an effort but the assignment is mostly incorrect, and 2 if most of the assignment is correct.

Class participation, also graded on a discrete 0-2 scale, counts 10% of the final grade and will depend on the effort you put into class discussions. A grade of 2 is reserved for students who consistently contribute to class discussion throughout the semester.

Your final point grade (out of 100 points) is then calculated as follows: 0.6 x Average Exam Grade + 0.3 x Average Homework Grade * 100 / 2 + 0.1 * Participation Grade * 100 / 2. Students will have a letter grade based on the following breakpoints:

- >90 pts → A.
- <=90 pts and >80 pts → A-.
- <=80 pts and >70 pts → B+.
- <=70 pts and >60 pts → B.
- <=60 pts → B- or below.

V. Materials

This course has no required textbook and the material in the slides plus attending classes is enough to be able to complete the homework assignments and do the exams. I will distribute slides and other handouts at the beginning of the class. A significant portion of the course is based on the following book, which you may you want to buy if you plan a career path that makes heavy use of derivative securities:

Hull, John C., 2008, "Options, Futures, and Other Derivatives", 7th edition, Pearson

- Other material (*I will provide all except the HBS case, which can be bought online*):
  - HBS case #9-205-026 – "Hedging Currency Risks at AIFS".
  - "A Framework for Risk Management", Kenneth Froot, David Scharfstein, and Jeremy Stein, *Journal of Applied Corporate Finance*, vol. 7, no. 3, Fall 1994
  - "The Collapse of Metallgesellschaft: Unhedgeable Risks, Poor Hedging Strategy, or Just Bad Luck?", Franklin R. Edwards and Michael S. Canter, *Journal of Futures Markets*, vol. 15, no. 3, 1994
  - "Rethinking Risk Management", Rene Stulz, *Journal of Applied Corporate Finance*, vol. 9, no. 3, 1996
  - "Financial Constraints, Competition, and Hedging in Industry Equilibrium", Tim Adam, Sudipto Dasgupta, and Sheridan Titman, *Journal of Finance*, vol 62, no. 5, October 2007

Students are expected to have a calculator that allows for log/exp functions at all classes; and use of the calculator will be helpful for class participation.

VI. Students with disabilities

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Faculty are not required to provide accommodations without an official accommodation letter from SSD.

- Please notify me as quickly as possible if the material being presented in class is not accessible (e.g., instructional videos need captioning, course packets are not readable for proper alternative text conversion, etc.).

- Contact Services for Students with Disabilities at 471-6259 (voice) or 1-866-329-3986 (video phone) or reference SSD's website for more disability-related information: http://www.utexas.edu/diversity/ddce/ssd/for_cstudents.php