

INGEST

DERIVATIVES

GEST-S-502 – COURSE OUTLINE 2015

COURSE SUMMARY

Course Objectives

This course is an introduction to derivatives (forwards, futures, swaps and options), their valuation and their uses. It will combine theory and cases.

Material

The material comprises:

- **The slides**, available on my website: www.solvay.edu/cours/pirotte. Slides are uploaded with notes after each course. They can also be more directly obtained through our shared dropbox.
- **The readings**. These can be academic articles, semi-academic articles or press articles. They will be uploaded to the website temporarily or sometimes distributed individually. They are compulsory.
- **The Excel complementary files** (website+dropbox).
- Case studies.
- Exercise sessions (“TPs”).

Reference

- Hull, John (2012), **Options, Futures and Other Derivatives**, Prentice Hall; 8th edition (JH).
- Hull, John (2014), **Options, Futures and Other Derivatives**, Prentice Hall; 9th edition (JH).

Prerequisites

The only prerequisite is a basic finance course including an introduction to options (you should know what options are and be familiar with binomial trees- this material is covered by JH) plus an adequate training in mathematics and statistics. For those of you who own a corporate finance textbook (such as Brealey & Myers or Berk & DeMarzo), I strongly

recommend reading the chapters on futures and options as an introduction to the topics that we will cover in class.

Assistant

Teaching assistant: Benjamin Lorent (blorent@ulb.ac.be).

Exams and Grading

- Register here: <http://tinyurl.com/deriv2015>
- Final grade = Final exam (60%) & several cases/exercises to hand in the week after (40%)
- The final exam is a closed-book exam but a summary of 5p recto-verso can be taken with you. Questions, problem sets and cases are available on my website to help you prepare this unpleasant moment.
- Grades are carried forward to the second session according to the rules set by the Solvay Business School.

Cases/Exercises to submit

Cases/exercises have to be submitted in groups of 3 members.

Please:

1. Create a dropbox with your three (3) names separated by a “-“ and invite me to it.
2. Make sure to register you and your teammates on: <http://tinyurl.com/deriv2015> (keep the link to your google form for further editing in the future)

The cases/exercises will consist in a series of questions to be answered/covered and implemented in a master Excel file that will be presented to you during the first two sessions.

Outline

Week	Date	Topic	JH 8 th ed	JH 9 th ed
1	2/02	Introduction and linear derivatives		
		Introduction & History	1,2	
		Forwards & Futures (Pricing)	4,5	
		Forwards & Futures (Using)	3	
2	9/02	Currency & Interest-rate sensitive linear derivatives		
		Interest-rate Futures, Bond Futures	6	
		Pricing FRAs and IRS	7	
		Currency linear derivatives	7	
		Using Swaps	5&7	
3	23/02	Options		
		Pricing Options: binomial trees, Black & Scholes, Monte Carlo simulations	9, 10, 12, 13, 14	
4	2/03	Using options		
		On stocks		
		On stock indices	16	
		On currencies	16	
		On futures	17	
		On commodities	33	
		Greek letters	18	
		Volatility smiles	19	
		Using options: on stocks, indices, currencies, futures,	11, 16, 17, 18	
5	9/03	Extensions		
		Exotic options	25	
		Structured products		
		More on numerical procedures	26	
		Other methods	27	
		Adjustments	29	
6	16/03	Interest-rate optional products	28,29,30,31	
		Interest-rate modelling		
		Interest-rate options		
		Other products revisited	32	