



**UNIVERSITÉ  
DE GENÈVE**

**FACULTÉ DES SCIENCES  
ÉCONOMIQUES ET SOCIALES**

**Master of Arts in International Trading, Commodity Finance and Shipping**

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## **HEDGING TOOLS AND TECHNIQUES USING COMMODITY FUTURES, FORWARDS, AND SWAPS**

### **SYLLABUS**

#### **I. COURSE OBJECTIVES**

We will explore in this module the fundamentals of commodity futures, forwards, and swaps – how they work, how they are priced, and how to use them for hedging and commodity finance. We will not cover options, which you will cover in a later dedicated module. No prior background is presumed in these financial instruments.

#### **II. GRADES AND WORK OUTSIDE OF CLASS**

Your final course grade will be based on the following formula:

$$\text{Max}(0.45X_1 + 0.55X_2, 0.55X_1 + 0.45X_2)$$

where  $X_1$  is your percentage score on a take-home assignment following the first half of the course module and where  $X_2$  is your percentage score on an in-class exam from 12h00 to 13h00 CET on June 30, 2012.

The take-home assignment is due at 09h00 CET on February 27, 2012. You may work alone or in groups of two or three people this assignment. Groups should submit a single solution set with the names of all members clearly marked.

You can bring a calculator, an English dictionary, and an A4 “cheat sheet” to the final examination. The cheat sheet can be used to note formulae and other information. Microcopies of lecture notes and readings are not allowed, but you are welcome to write or print on both sides of the piece of paper.

The course also includes some required readings, which are intended as a complement to the lectures. There is some overlap, but the lectures do not mimic the readings. In general, the readings are intended to help you understand more clearly the material we discuss in class.

In keeping with University requirements, lecture attendance is compulsory. Please let me know if you have to miss a lecture.

### III. COURSE MATERIALS AND WEB SITE

Lectures and sample exam questions (both in PDF format) are available on the course web site, accessible through <http://rmcsinc.com/hecGeneve.html>. A review of the lecture notes before class is neither required nor recommended, but you should print them and bring them to class.

If you have a question during class, the best thing is to ask it in class. Alternatively, you may email me at [christopher.culp@unige.ch](mailto:christopher.culp@unige.ch).

### IX. AGENDA & READINGS

The agenda and lecture topics for the course are listed below along with the corresponding required and suggested readings.

Required readings come from selected chapters (available on the web site) from C. L. Culp, *Risk Transfer: Derivatives in Theory and Practice* (Wiley, 2005) (hereinafter “RT”), and a few articles that also can be downloaded from my web site. I also recommend but do not require that you order J. W. Labuszewski, et. al., *The CME Group Risk Management Handbook* (Wiley, 2010) (hereinafter “CME”). References to the CME book are indicated with a \* as optional.

## **FEBRUARY 3, 2012**

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|----------------------|--|
| <b>14:00 – 15:30</b> | <b><i>Lecture 1–Introduction to Commodity Futures &amp; Forwards</i></b> <ul style="list-style-type: none"><li>• RT, Chapters 5 &amp; 6</li><li>• C. L. Culp, “OTC-Cleared Derivatives: Benefits, Costs, and Implications of the “Dodd-Frank Wall Street Reform and Consumer Protection Act.” <i>Journal of Applied Finance</i> No. 2 (2010)</li><li>• *CME, Chapters 1-3 &amp; Chapter 8, pp. 279-293 &amp; 347-350</li></ul> |
| 15:30 – 15:50        | Break  |
| <b>15:50 – 17:00</b> | <b><i>Lecture 1 (cont’d)</i></b>   |
| <b>17:00 – 18:00</b> | <b><i>Guest Speaker: Alessandro Mauro, Litasco</i></b>   |
| 18:00 – 18:20        | Break  |

**18:20 – 19:45**      ***Lecture 2– The Basis & the Forward Curve***  
• RT: Chapters 8-9 & 11  
• \*CME, Chapter 8, pp. 331-347

19:45 – 20:00      Break

**20:00 – 21:00**      ***Lecture 2 (cont'd)***

## **FEBRUARY 4, 2012**

**08:15 – 09:50**      ***Lecture 3– Basis Relations in the U.S. Crude Oil Market***  
• \*CME: Chapter 8, pp. 315-327

09:50 – 10:10      Break

**10:10 – 12:00**      ***Lecture 4–Sources of Returns in Commodity Derivatives***  
• RT: Chapters 7 & 12  
• C. B. Erb and C. R. Harvey, “The Strategic and Tactical Value of Commodity Futures,” *Financial Analysts Journal* Vol. 62, No. 2 (2006).

## **JUNE 29, 2012**

**14:00 – 15:30**      ***Lecture 5–Hedge Ratios***  
• RT: Chapter 14  
• C. L. Culp, *Hedge Ratios Lecture Note*

15:30 – 15:50      Break

**15:50 – 17:00**      ***Lecture 5 (cont'd)***  
***Lecture 6–Commodity Swaps and Commodity Futures Strips***  
• C. L. Culp and M. H. Miller, “Metallgesellschaft and the Economics of Synthetic Storage,” *Journal of Applied Corporate Finance* 7(4) (Winter 1995).  
• C. L. Culp and M. H. Miller, “Hedging in the Theory of Corporate Finance: A Reply to Our Critics,” *Journal of Applied Corporate Finance* 8(1) (Spring 1995).

17:00 – 17:30      Break

**17:30 – 19:00**      ***Lecture 6 (cont'd)***

19:00 – 19:30      Break

- 19:30 – 21:00**      **Lecture 7–Gold**
- \*CME: Chapter 8, pp. 327-331.

**JUNE 30, 2012**

- 08:15 – 09:45**      **Lecture 8– Structured Commodity Finance**
- C. L. Culp and J. P. Forrester, “Structured Financing Techniques in Oil & Gas Project Finance: Future Flow Securitizations, Prepaids, Volumetric Production Payments, and Project Finance Collateralized Debt Obligations,” in *Energy & Environmental Project Finance Law & Taxation: New Investment Techniques*, A. S. Kramer and P. C. Fusaro, eds. (London: Oxford University Press, 2010).
- 09:45 – 10:15      Break
- 10:15 – 11:45**      **Lecture 8 (cont’d)**
- 11:45 – 12:00      Break
- 12:00 – 13:00**      **Final Examination**