

COURSE INFORMATION

FRE 501 Commodity Markets and Price Analysis

Instructor: James (Jim) Vercaemmen

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Office hours: After lectures in classroom; M 10 – 11:30 & W 10:30 – 12:00 in HA 268

Lectures: MW 3:00 - 4:30 pm (MCML 154)

Simulated Futures Trading: Friday 1–2:30 (Sept. 7, 14, 21; Oct 12 or 19) FSC 103

The course website can be access through <http://canvas.ubc.ca>

Course Support: Xiao Han (MFRE Alumni), xiao.han@ubc.ca

Office hours: See course website

Piazza Discussion Forum: You should have received an email invitation to sign up.

COURSE DESCRIPTION

FRE 501 examines food prices using various perspectives. The first third of the course theoretically examines the determination of agricultural commodity futures and spot prices (e.g., corn, wheat and soybeans). Interested students can learn speculative trading strategies by trading commodities in a simulated futures market. The middle third of the course uses an industrial organization framework to examine strategic elements of pricing in wholesale and retail food markets. The final third of the course is devoted to empirical analysis: pricing trends, volatility, co-movement and options on futures for agricultural commodities.

LEARNING OBJECTIVES

By the end of the course, students will be able to:

-) Describe the institutional rules and mechanics of trading agricultural commodity futures;
-) Explain important structural features of commodity markets such as the law-of-one price and pricing spreads, and also explain important theories such as convenience yield and Keynesian backwardation;
-) Identify key industrial organization concepts that influence wholesale and retail food prices including double marginalization, spatial price discrimination and the role of franchises;
-) Describe the determinants of commodity price volatility and co-movement, and implement methods of measurement in Stata.

ACADEMIC INTEGRITY AND MISCONDUCT

All UBC students are expected to behave as honest and responsible members of an academic community. **See details below.**

In addition, all students are expected to attend class regularly and to arrive on time.

ASSESSMENT

Assignments

#1 Distributed Sept. 12, due September 19	– 7.5%
#2 Distributed Nov. 7, due Nov. 18	– 7.5%
On-line Quizzes (Sept. 10, 12, 26; Oct. 31)	– 15%
Midterm Exam	
Oct. 3.	– 30%
Final Exam	– 40%
Total	100%

SIMULATED FUTURES TRADING

FRE 501 includes optional participation in simulated commodity futures trading, which will run for roughly the first half of this semester. You are encouraged to participate in this important and interesting activity but it is important that your participation is meaningful: (i) attend the four Friday afternoon sessions that are designed to provide you with trading knowledge and skills; (ii) actively trade (e.g., at least two trades each week); and (iii) actively participate in the FRE 501 Piazza class discussion forum.

Simulated futures trading will be led by Nishant Kalia who is a current UBC MBA student in the Sauder School of Business. Nishant has considerable real world experience trading commodity futures both as a commodity research manager with a small boutique investment firm in India and as an analyst with a multinational futures trading firm. Nishant will not hold office hours but he can be contacted through the Piazza discussion forum (preferred) or directly at nishantkalia8@gmail.com.

Trading within the simulated trading platform (Stocktrak) and discussions on Piazza discussion forum for FRE 501 can take place 24/7. Face-to-face sessions with Nishant in **Forest Sciences Centre 1003** are as follows:

- Class 1: September 7, 1:00 to 1:50 pm, 50 minutes
- Class 2: September 14, 1:00 to 2:30 pm, 80 minutes with a 10-minute break
- Class 3: September 21, 1:00 to 2:30 pm, 80 minutes with a 10-minute break
- Class 4, October 12 or 19, 1:00 to 2:30 pm, 80 minutes with a 10-minute break

SCHEDULE and READINGS

Week 1 (Sept. 3 – 7)

-) *Wednesday* – Guest Speaker: MFRE Alumni Nathan Ruff (Class of 2018) to speak about his summer project & current job with Agriculture and Agri-Food Canada, which involves using Stata to analyze large-scale survey data.
-) *Friday*: Simulated futures trading interactive discussion (led by Nishant)

Part A: Agricultural Commodity Prices

Week 2 (Sept. 10 – 14)

-) *Monday*: Multimedia overview of trading commodity futures; testing of students' understanding of concepts with multiple choice and T/F questions (3% of final grade) (link to resource material posted after session).
-) *Wednesday*: Interactive testing of material on Pages 7 – 20 and 39 – 55 of 2012 Oxfam reading; (3% of final grade plus a bonus of 2% if class average grade exceeds 80%).

CEREAL SECRETS The world's largest grain traders and global agriculture (2012); Oxfam Research Report. <https://www.oxfam.org/sites/www.oxfam.org/files/rr-cereal-secrets-grain-traders-agriculture-30082012-en.pdf>

-) *Wednesday*: Assign 1 Distributed
-) *Friday*: Simulated futures trading interactive discussion (led by Nishant)

Week 3 (Sept. 17 – 21)

-) *Monday and Wednesday*: A model of speculation in a commodity futures market.
Christopher R. Knittel & Robert S. Pindyck, 2016. "The Simple Economics of Commodity Price Speculation," *American Economic Journal: Macroeconomics*, American Economic Association, vol. 8(2), pages 85-110, April. (download from UBC library)
 - o Students should bring a laptop with Excel to class (or work with a partner) because they will be expected to build a simple version of the Knittel and Pindyck model
-) *Wednesday*: Assignment 1 Due (upload in Canvas by 11:59 pm)
-) *Friday*: Simulated futures trading interactive discussion (led by Nishant)

Week 4 (Sept. 24 – 28)

-) *Monday*: Prices over space – a spatial equilibrium analysis of soybean prices
 - o Students will be presented with scenarios and be asked to predict how soybean prices in different regions will respond to each scenario (e.g., drought in Argentina).
 - o Students will use the model to assess the correctness of their predictions and provide intuition regarding the outcome
 - o Background Reading: Chapter 2, Vercammen, J. (2011) *Agricultural Marketing: Structural Models for Price Analysis*, Routledge (download from Canvas)
-) *Wednesday*: Basis and Hedging
 - o CME - Self-Study Guide to Hedging with Grain and Oilseed Futures and Options (pages 9 – 20)
 - o <https://www.cmegroup.com/trading/agricultural/files/grain-oilseed-hedgers-guide.pdf>
 - o Open book quiz – questions will be very similar to those in Quizzes 2, 3 and 4 of the CME Self-Study Guide (4% of final grade)

Week 5 (Oct. 1 – 5)

-) *Monday*: Theoretical concepts (inverted market, backwardation, contango, convenience yield)
 - o Class notes only
-) *Wednesday*: Midterm Exam

Part B: Industrial Organization and Retail Food Prices

(based on the lecture notes of MIT Professor Robert Pindyck)

<http://web.mit.edu/rpindyck/www/courses.htm>

Week 6 (Oct. 8 – 12)

-) Monday: Thanksgiving – no class.
-) Wednesday: Market Definition and Concentration
<http://web.mit.edu/rpindyck/www/Courses/MMDA17.pdf> (pages 1 - 10)
-) Friday (possibly Oct 19): Simulated futures trading interactive discussion (led by Nishant)

Week 7 (Oct. 15 – 19)

-) Monday: Market Definition and Concentration Case Study: Beer
 - o Rojas, C. and E.B. Peterson (2008) “Demand for differentiated products: Price and advertising evidence from the U.S. beer market” *International Journal of Industrial Organization*, 26, Issue 1: 288 – 307 (download from UBC library)
 - o http://www.economicsonline.co.uk/Business_economics/Brewing.html
-) Wednesday: Pricing in Vertical Markets, Part A
 - o http://web.mit.edu/rpindyck/www/Courses/VS_11.pdf (pages 1 - 6, 10 – 16)
-) Friday (possibly Oct 12): Simulated futures trading interactive discussion (led by Nishant)

Week 8 (Oct. 22 – 26)

-) Monday: Pricing in Vertical Markets, Part B
 - o http://web.mit.edu/rpindyck/www/Courses/VS_11.pdf (pages 17 - 27)
-) Wednesday: Competition in Attribute Space and Brand Proliferation
 - o http://web.mit.edu/rpindyck/www/Courses/Pricing_15.pdf (pages 12 – 23)

Week 9 (Oct. 29 – Nov. 2)

-) Monday: Pricing Strategies
 - o http://web.mit.edu/rpindyck/www/Courses/BBP_18.pdf (pages 12 – 23)
-) Wednesday: On-line quiz based on prepared study questions that relate to Pindyck lecture notes (5% of final grade)

Part C: Time Series Properties of Agricultural Commodity Prices

Week 10 (Nov. 5 – 9)

-) Monday: Stationarity as a Condition for Measuring Realized Volatility (class notes)
 - o Trend stationary versus difference stationary
 - o ADF testing procedure
 - o Returns (difference in log prices)
-) Wednesday: Pricing Pass Through → Coffee Markets

Dick Durevall; Cost pass-through in the Swedish coffee market, *European Review of Agricultural Economics*, Volume 45, Issue 4, 1 September 2018, Pages 505–529 (download from UBC Library)

-) Wednesday: Assignment 2 distributed

Week 11 (Nov. 12 – 16)

-) Monday: Remembrance Day – no class
-) Wednesday: Commodity price co-movement
(<http://documents.worldbank.org/curated/en/335771468328510968/pdf/WPS6845.pdf>)

Week 12 (Nov. 18 – 23)

-) Sunday (Nov 18): Assignment 2 Due (upload in Canvas by 11:59 pm)
-) Monday: Introduction to Options on Commodity Futures (class notes)
-) Wednesday: Black Scholes Pricing Model and Implied Volatility

Week 13 (Nov. 26 – Nov 30)

-) Catch up and Review

Academic Misconduct – please read carefully!

Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Breach of those expectations or failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

Academic misconduct that is subject to disciplinary measures includes, but is not limited, to the following:

- **Plagiarism**, which is intellectual theft, occurs where an individual submits or presents the oral or written work of another person as his or her own. In many UBC courses, you will be required to submit material in electronic form. The electronic material will be submitted to a service which UBC subscribes, called TurnItIn. This service checks textual material for originality. It is increasingly used in North American universities. For more information, review TurnItIn website online.
- **Cheating**, which may include, but is not limited to falsification of any material subject to academic evaluation, unauthorized collaborative work; or use of unauthorized means to complete an examination.
- **Submitting others work as your own**, may include but not limited to i. using, or attempting to use, another student's answers; ii. providing answers to other students; iii. failing to take reasonable measures to protect answers from use by other students; or iv. in the case of students who study together, submitting identical or virtually identical assignments for evaluation unless permitted by the course instructor.
- **Resubmission of Material**, submitting the same, or substantially the same, essay, presentation, or assignment more than once (whether the earlier submission was at this or another institution) unless prior approval has been obtained from the instructor(s) to whom the assignment is to be submitted.
- **Use of academic ghostwriting services**, including hiring of writing or research services and submitting papers or assignments as his or her own.

Student Responsibility: Students are responsible for informing themselves of the guidelines of acceptable and non-acceptable conduct for examinations and graded assignments as presented via FRE code of conduct guidelines; course syllabus and instructors; and UBC academic misconduct policies, Review the following web sites for details:

<http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=3,54,111,0>

<http://learningcommons.ubc.ca/academic-integrity/>

Penalties for Academic Dishonesty: Academic misconduct is treated as a serious offence at UBC and within the MFRE program. Penalties for academic dishonesty are applied at the discretion of the course instructor. Incidences of academic misconduct may result in a reduction of grade or a mark of zero on the assignment or examination with more serious consequences being applied if the matter is referred to the Dean's office and/or President's Advisory Committee on Student Discipline. Careful records are kept to ensure monitoring and prevent recurrences