DEPARTAMENT .... : **Accounting and Finance (CFC)**
PROGRAM .... : **CMCD**
COURSE .... : **Econometrics for Finance**
PROFESSOR .... : **Rafael F. Schiozer**
DAY/HOUR .... : **Wednesdays, 9:00-11:50 AM**

2nd semester / 2017

SYLLABUS

OBJECTIVES AND CONTENTS

This course provides students with working knowledge of cross-sectional and panel data econometrical methods for finance research. This is accomplished by covering several methods commonly employed in empirical research in finance. Although some econometric theory is covered, the course is more directed to end users of econometric tools, teaching students how to properly use the tools, and less focused on deriving econometric properties. **The course does not cover time series econometrics.**

I expect that students will be better prepared to do (especially empirical) research in corporate finance and banking topics after taking this course. I also expect students to develop their critical thinking and learn to make academic presentations in a professional manner, which is fundamental to researchers.

Limitations: Time limitations impose certain restrictions on what we can accomplish in this course. For example, we will not cover all of the methods you might need or should know. We also will not cover each method in excruciating detail. Arguably, you could build an entire course around each method.

FORMAT

We will conduct the whole course in English. Even if you are not fluent in the language, I encourage you to participate and ask questions, without much consideration to eventual mistakes (and absolutely no consideration to accent).
The course is designed to help you learn econometric methods via a three-pronged approached.

(1) Lectures and econometric readings will help you with the econometric intuition behind each method. This is not a theory course; this is a course for end users of econometric tools..

(2) Course readings will expose you to examples of the methods being used in published and working papers. Seeing how the tools are actually used by other researchers is often far more useful in helping students understand the tools. I will rely on examples from corporate finance and banking when possible, though I may also reference examples from other fields in economics.

(3) Course assignments will require you to use the methods analyzed in the course. There will be 3 exercises that will have you manipulate and analyze data using the various econometric techniques, and there will be assignments where you analyze and criticize other researchers' use of these tools. Since this is a finance course, the applications will typically be corporate finance related.

ASSESSMENT CRITERIA

Presentation / discussion of papers:	15%
Half-page handouts:	10%
Stata exercises:	20%
Quizzes:	25%
Final Exam:	30%

REQUIRED BACKGROUND

The course does not have any formal pre-requisites. However, I expect you to have good knowledge of Statistics and undergraduate-level Econometrics. I will assume that you have a good working knowledge on:
- Probability and probability distributions;
- Discrete and continuous random variables;
- Sampling and sampling distributions;
- Hypothesis testing;
- Basics notions of single and multiple regression analysis;
- ANOVA;

If you are not familiar with these concepts, **I highly recommend that you study on your own and/or take an online course in Statistics** previously to taking this course. A very good one is a course by Prof. Philip Stark, available here: http://www.stat.berkeley.edu/~stark/SticiGui/index.htm

Your knowledge in Corporate Finance is of course also helpful. Most of the papers you are required to read will be testing hypotheses supported by Corporate Finance Theory.

COURSE SCHEDULE AND READING LIST

I will teach from slides, which I will make available to you before each class on Eclass, and my own course notes. I will be drawing from a variety of sources including various textbooks, journal articles, working papers, and other professors' lecture notes.

There is no single required "textbook," but I will mostly follow the sequence of Wooldridge's book for the first third of the course, and Angrist & Pischke's for the remaining part. I make note of the appropriate references for each lecture on the exhibit below, where I show the relevant methodology readings for each lecture. Students are expected to read these prior to the lecture.

Additionally, most lectures will contain student presentations of papers related to the previous week's lecture topic. A list of papers to be presented is given below.

Each session will cover 2 or 3 papers. **All the students must read all the papers for each session**. I will form the groups *, and assign each group their paper in the week ahead. One student will present the discussions prepared by his/her group**. Each group will make a 12-15 minute PowerPoint presentation that discusses the paper, and each presentation will be followed by in-class discussion. The purpose of the assignment is twofold: (1) Presentations are one key way people in academia will come to know (and assess) you. So, it's a good idea to get some practice now. And (2), this will help you think critically about the papers. To ensure participation following each presentation, each group must also type up one concern they had about each of the papers their group did NOT present and **hand these in at the start of class** (I call these half-page handouts). Your group will state this concern at the start of the discussion. The comments should be very short [2-3 sentences] and designed to do one of two things: (a) isolate what your group thought the biggest problem of the paper was, or (b) identify a concern you think the presenting group might overlook.

* The number of students per group will depend on the number of students enrolled for the course.

** I may cold call students to answer a specific question about the paper. If the answer is poor, this will damage the grade for the whole group. This is done to reduce moral hazard and avoid someone from the group to free-ride.

Guidelines for a good discussion (you do not have to strictly follow this order, but it may help you in preparing your presentation):
- Briefly describe what the paper does and what it finds;
- Make your point about the assumptions and/or identification strategy;
- Suggest improvements;
- Identify eventual gaps or defects. Be critical. You may use your own judgement or the literature that followed in the subject. In this case, make explicit mention to the papers you are referring to.
- Try not to be too picky about minor defects. Try to find fundamental flaws in the identification strategy and/or in the interpretation of the results.

The first two meetings will be lecture-only. From the 3rd meeting on, we will have approximately 2h-2h30min of lecture followed by a 20 minute break and around 40-60 minutes of presentations and discussion.Three of our sessions will start with 20-30 minute quizzes.

Course schedule (tentative and subject to change)

Session	Date	Topics	Papers / Readings	Presentations	Exercise due
1	2/Aug	Course presentation and organization; A **quick** overview on related background: Random variables; hypothesis testing;	NCT – Chapters 4 to 11		
2	9/Aug	Conditional expectations. The basics of asymptotic theory;	W – Chapters 2 and 3		
3	16/Aug	Simple and multiple regressions: Statistical Properties of Regressions; OLS Estimation and Inference;	AP – 3.1. W – 4.1; 4.2.		
4	23/Aug	Linear regression (continued); QUIZ #1	AP – 3.4; 3.5. W – 4.3; 4.4.	Classics #1	Stata Mechanics
5	30/Aug	Causality	AP – 3.2 R&W paper, section 2	Classics #2	
6	6/Sep	Panel Data	AP – 5.1 W – 10.1; 10.2; 10.3	Causality	
7	13/Sep	Panel Data and other uses of fixed effects	AP – 5.3 W – 10.5; 10.6; 10.7	Panel data #1	
8	20/Sep	Instrumental variables	AP – 4.1; 4.4; 4.6. W – Chapter 5. R&W paper, section 3	Panel data #2	
9	27/Sep	Natural Experiments QUIZ #2	AP – 5.2	Instrumental Variables	
10	28/Sep (Thu)*	(make-up for 14/Oct) Natural Experiments (cont.)	B,D&M Paper R&W paper, section 4	Natural Experiments #1	
11	4/Oct	Natural Experiments (cont.)	B,D&M Paper R&W paper, section 4	Natural Experiments #2	Exerc #1
-	11/Oct				
-	18/Oct*				
12	25/Oct	Common mistakes and errors	G&M paper	Natural Experiments #3	
13	1/Nov	Non-linear regression models; QUIZ #3	W – 13.1; 13.2; 13.3; 15.1-15.6; 15-8	Common mistakes	
14	8/Nov	Miscellaneous (a brief introduction to RDD and matching); Tricks of the trade.	AP – 3.4.2; Chapter 8.	Non-linear models	
-	9/Nov**	Make-up class (if necessary)	-	-	
15	14/Nov (Tue)***	FINAL EXAM	-	-	
	19/Nov				Exerc #2

* Please note that class on October 14 has been anticipated to September 28 (Thursday).
** If for any reason (illness, etc) I have to cancel any class, there will be a make-up class on November 9.
*** Note that the final exam is on a Tuesday, because Nov/15 is a holiday.

Books and methodological papers

Newbold, Paul, Carlson, W., Thorne, B., *Statistics for Business and Economics*, Pearson, 8th Ed., 2013. **[NCT].** (*You may use any good alternative book on basic Statistics*).

Wooldridge, Jeffrey M., 2010, *Econometric Analysis of Cross-Section and Panel Data*, MIT Press, Massachusetts, Second Edition **[W]**

Angrist, Joshua D., and Jorn-Steffen Pischke, 2009, *Mostly Harmless Econometrics*, Princeton University Press, New Jersey. **[A&P]**

Roberts, Michael R., and Toni M. Whited, 2011, "Endogeneity in Empirical Corporate Finance," *Handbook of the Economics of Finance*, vol. 2, http://ssrn.com/abstract=1748604 **[R&W]**

Bertrand, M., E. Duflo, and S. Mullainathan. 2004. How Much Should We Trust Differences-in Differences Estimates? Quarterly Journal of Economics 119:249–75. **[B,D&M]**

Gormley, Todd A., and David A. Matsa, 2014, "Common Errors: How to (and Not to) Control for Unobserved Heterogeneity," Review of Financial Studies, 2014.

Papers that use the methodology we will be covering in the course

Classics #1

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, "Law and finance," *Journal of Political Economy* 106, 1113-1155.

Berger, P., and Eli Ofek, 1995, "Diversification's Effect on Firm Value," *Journal of Financial Economics* 37, 39−65.

Classics #2

Fazzari, Steven M., R. Glenn Hubbard and Bruce C. Petersen, 1988, "Financing Constraints and Corporate Investment," *Brookings Papers on Economic Activity*, 141–195.

Opler, Timothy, Larry Pinkowitz, and Rene Stulz, 1999, "The determinants and implications of corporate cash holdings," *Journal of Financial Economics* 14, 1059-1082.

Causality

Rajan, Raghuram G., and Luigi Zingales, 1998, "Financial dependence and growth,"*American Economic Review*, 88(3), 559-586.

Agarwal, Ashwini, and David A. Matsa, 2013, "Labor unemployment risk and corporate financing decision," *Journal of Financial Economics*, 108, 449-470.

Panel Data #1

Lemmon, Michael, Michael R. Roberts, and Jaime F. Zender, 2008, Back to the beginning: Persistence and the cross-section of corporate capital structure, *Journal of Finance* 63, 1575-1608.

Paravisini, Daniel, Veronica Rappoport, Philipp Schnabl, and Daniel Wolfenzon, 2014, "Dissecting the effect of credit supply on trade: Evidence from matched credit-export data," Review of Economic Studies, 1-26.

Panel Data #2

Khwaja, Asim Ijaz, and Atif Mian, 2008, "Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market," *American Economic Review*, 98(4), 1413-1442.

Becker, Bo, Zoran Ivkovic, and Scott Weisbenner, 2011, "Local dividend clienteles," *Journal of Finance*, 66(2), 655-683.

Instrumental Variables

Gormley, Todd A., 2010, "The impact of foreign bank entry in emerging markets: evidence from India," *Journal of Financial Intermediation*, 19(1), 26-51.

Bennedsen, M., K Nielsen, F. Perez-Gonzalez, and D. Wolfenzon, 2007, Inside the family firm: The role of families in succession decisions and performance, *QuarterlyJournal of Economics*, 122, 647-691.

Giroud, Xavier, Holger M. Mueller, Alex Stomper, and Arne Westerkamp, 2012, "Snow and leverage," *Review of Financial Studies*, 25, 680-710.

Natural Experiments #1

Gormley, Todd A., and David Matsa, 2011, "Growing Out of Trouble? Corporate Responses to Liability Risk," *Review of Financial Studies*, 24(8), 2781-2821.

Jayaratne, Jith, and Philip Strahan, 1996, "The finance-growth nexus evidence from bank branch deregulation," *Quarterly Journal of Economics*, 111(3), 639-670.

Campello, Murillo; Graham, John R.. "Do Stock Prices Influence Corporate Decisions? Evidence from the Technology Bubble", *Journal of Financial Economics* 107.1 (2013): 89-110.

Natural Experiments #2

Agrawal, Ashwini, 2013, "The impact of investor protection law on corporate policy and performance: evidence from the blue sky laws," *Journal of Financial Economics*, 107, 417-35.

Bertrand, Marianne, and Sendhil Mullainathan, 2003 "Enjoying the quiet life? Corporate governance and managerial preferences," *Journal of Political Economy*, 111(5), 1043-75.

Qian, Jun, Strahan, P., and Zhishu Yang, The impact of incentives and communication costs on information production and use: evidence from bank lending, Journal of Finance, 2015.

Natural Experiments #2

Papers TBD

Matching & Common Limitations & Errors

Giroud, Xavier, and Holger Mueller, 2010, "Does corporate governance matter in competitive industries?" *Journal of Financial Economics*, 95, 312-331.

Ljungqvist, Alexander, Christopher Malloy, and Felicia Marston, 2009, "Rewriting history," *Journal of Finance*, 64(4), 1935-1960.

Bennedsen, Morten, Francisco Perez-Gonzalez, and Daniel Wolfenzon, 2012, "Evaluating the Impact of the Boss: Evidence from CEO Hospitalization Events", working paper, http://www.stanford.edu/~fperezg/valueboss.pdf

Non-linear models

Papers TBD