Financial Econometrics
FINN 6219, Fall 2018

Location: Center City, Room 904, Wednesday 5:30pm - 8:15pm
Instructor: Professor Chris Kirby
Phone: 687-0845
Email: ckirby10@uncc.edu
Office: Friday 349A
Office hours: By appointment

Course Description
The field of financial econometrics is at the forefront of modern empirical research on the inner workings of stock, bond, futures, and options markets. It is a young and rapidly evolving discipline that emphasizes the use of advanced statistical techniques for analyzing price and return data. This course provides a “hands on” introduction to these techniques. Students will be required to develop programming skills in Stata, a high-level statistical analysis package. The emphasis will be on understanding and applying a set of econometric tools that are widely used by academics and practitioners who work in quantitative areas such as risk management, investment management, and financial engineering.

Course Requirements
Attendance: Encouraged but not required.

Problem Sets (15%): The problem sets will typically consist of programming exercises. They are to be completed in groups of 2 or 3 students. Submit a single set of solutions that has each group member’s name on the cover page. Include the Stata code used to generate solutions and a written interpretation of the results. Late submissions are not permitted and will earn a score of zero. I will not extend due dates so plan accordingly.

Problem set solutions must be coded in Stata. There are no exceptions. The first lecture is an introduction to Stata. I expect you to learn to write Stata code on your own. Although I will provide examples to build on, but I will not debug your code.

Exam 1 (25%): Consists of problems that test your understanding of the econometric techniques covered in the lectures. You will have 2.5 hours to complete the exam.

Exam 2 (25%): Consists of problems that test your understanding of the econometric techniques covered in the lectures. You will have 2.5 hours to complete the exam.

Final Exam (35%): Cumulative and similar in format to the midterm. It will be held on Wednesday, December 12 from 5:30 pm to 8:00 pm in our usual Center City classroom.

Please note that the standards and requirements set forth in this syllabus may be modified at any time. Notice of such changes will be by announcement in class.

Textbooks and Software
The course does not have a required text. The lecture notes are designed to be both comprehensive and self-contained. However, you may find Financial Econometrics Using Stata by Boffelli and Urga (ISBN 9781597182140) to be a useful supplement. It spans a relatively narrow range of topics, but it does a good job covering those that are included.
As noted earlier, the required software for the course is Stata. It is available in the Belk College computer labs (Friday 216 & 338), and it can be accessed remotely via Citrix. If you want to use Citrix and you do not have access to H drive storage (it is no longer assigned to new students), then you should request access. Please see the following web page to do so: https://servicecatalog.uncc.edu/service/file-sharing/network-storage-h-j-s-drives.

Another option if you want to run STATA on your own computer is to purchase a student license directly at www.stata.com. You might consider “small STATA”. A six-month license is $35 and a one-year license is $49. It restricts you to 1200 observations and 99 variables, which is sufficient for most of what we do in the course.

**Prerequisites**

This course is intended for graduate students in finance and economics. I will therefore assume knowledge of introductory-level finance, macroeconomics and econometrics. The formal prerequisite for the course is ECON 6218 or MATH 6201.

**Academic Integrity**

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or online.

**Accommodations for Disabilities**

Students who wish to seek accommodations for disabilities must first consult with the Office of Disability Services and follow the instructions of that office to obtain accommodations.

**Tentative Course Outline**

A list of topics for the course is shown below.

Lecture 1: Introduction to Stata  
Lecture 2: Review of Classical Linear Regression Analysis  
Lecture 3: Regression for Time Series  
Lecture 4: Autoregressive Moving Average (ARMA) Models  
Test 1: Covers lectures 1, 2, 3, and 4  
Lecture 5: Unit Roots and Autoregressive Integrated Moving Average (ARIMA) Models  
Lecture 6: Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models  
Lecture 7: Risk Management Applications of Volatility Models  
Lecture 8: High-Frequency Data and Realized Volatility  
Test 2: Covers lectures 5, 6, 7, and 8  
Lecture 9: Vector Autoregressive (VAR) Models  
Lecture 10: Cointegration and Related Analysis  
Lecture 11: Panel Data Methods  
Lecture 12: Multivariate GARCH Models