Econ 9477

Advanced Topics in Econometrics III

Spring 2018

Instructor	J. Isaac (Zack) Miller	millerjisaac@missouri.edu
Course	MW 3:30-4:45PM	Middlebush 212
Office Hours	Mon 10:00AM-12:00PM	Professional 221
Website	courses.missouri.edu	

Objectives

The objective of this course is to familiarize the student with some popular time series tools not covered in Econometric Methods III/Advanced Topics in Econometrics I (Econ 9474). The main emphasis will be on analysis in the frequency and continuous time domains, with applications to topics in finance, international finance, and macroeconomics. The main goal will be to write a paper on an empirical time series topic.

Prerequisite

Econ 9474 or instructor's consent.

Grade Composition

Project on an Empirical Time Series Topic ..... *66% of the course grade*

Of which…

- *Project Proposal*..... *10% of the course grade*
- *Literature Analysis* ..... *10% of the course grade*
- *Paper, Rough Draft* ..... *25% of the course grade*
- *In-Class Presentation(s)*..... *11% of the course grade*
- *Paper, Final Draft*..... *10% of the course grade*

Homework Assignments ..... *34% of the course grade*

I expect you to complete HW assignments ***on your own*** with only ***limited*** collaboration.

All grades will be assessed using a +/- scale.

Topics Covered:

- Review of Stationary Series in the Time Domain

I. Long Memory and Fractional Integration

- Spectral Representation and the Periodogram
- Long Memory and Fractional Integration

II. Introduction to Stochastic Calculus

- Brownian Motion and Continuous Martingales
- Stochastic Calculus and Diffusions

III. Topics in Time Series

- Financial Engineering

Recommended Texts (*available* in the bookstore):

- Mikosch, T. (1998). *Elementary Stochastic Calculus with Finance in View*.
- Robinson, P.M. (2003). *Time Series with Long Memory*.

Some Additional Texts (*not available* in the bookstore):

- Brockwell, P.J. and R.A. Davis (1987). *Time Series: Theory and Methods*.
- Fuller, W.A. (1976). *Introduction to Statistical Time Series Analysis*.
- Hamilton, J.D. (1994). *Time Series Analysis*.
- Hull, J.C. (2002). *Options, Futures, and Other Derivatives.*
- Hunt, P.J. and J.E. Kennedy (2004). *Financial Derivatives in Theory and Practice*.

Statement on Academic Dishonesty:

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Statement on Disabilities:

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Disability Center, S5 Memorial Union, 882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Statement on Intellectual Pluralism:

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructor at the end of the course.

Statement on Academic Inquiry, Course Discussion and Privacy

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters. Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.