

Macroeconometrics -- Online

Contact Information

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Course Description

The objective of this course is to study econometrics as it is applied in modern macroeconomics. The focus is on *time-series* econometrics. Although there is some discussion of econometric theory, most of the emphasis is on *applied* time-series econometrics. The text book contains a large number of solved problems. The lectures discuss many of those examples in more detail, as well as present additional examples.

The course will address the following topics:

1. Difference equations – the cornerstone of time-series econometrics,
2. Stationary models (autoregressive and moving-average models),
3. Models with trends (deterministic and stochastic),
4. Multi-equation models (reduced-form and structural VARs),
5. Cointegration and error-correction models, and
6. Models with time-varying coefficients.

Textbook: *Applied Econometric Time Series*, Walter Enders, John Wiley and Sons, Inc, 4th edition, 2015.

Software: You are free to use the software of your choice. The textbook illustrates examples using RATS. However, a more common choice for students is *Eviews*, which is available to students at a substantial discount. It is also the software package that I will use to illustrate various examples and present questions for homework assignments.

Course Requirements

Students are expected to complete a reading assignment each “period”, and listen to a narrated PowerPoint presentation that supplements the reading (see below for more information).

There is an assignment due at the end of each “period”, which is either 1 or 2 weeks in length. Each “period” of the course begins on a Monday and ends on a Sunday. ***All home work assignments are due on Sundays at 11:59pm (Eastern Time Zone).***

There are a total of eleven (11) homework assignments, and each assignment will receive a somewhat different weight toward the final grade. I will provide feedback after each assignment on where you are in terms of your course grade.

Course Outline and Assignments

Period #	Start and End Date	Topic for Discussion & Assignment
1	Jan. 9-15	Introduction to Difference Equations <i>Reading:</i> Chapter 1.1 - 1.3 <i>Lecture #1</i> (In Lessons Folder) <i>Homework #1</i> (In Lessons Folder)
2	Jan. 16-29	Solving Difference Equations <i>Reading:</i> Chapter 1.4 - 1.8 <i>Lecture #2</i> (In Lessons Folder) <i>Homework #2</i> (In Lessons Folder)
3	Jan. 30-Feb. 5	Introduction to ARMA Models <i>Reading:</i> Chapter 2.1 - 2.7 <i>Lecture #3</i> (In Lessons Folder) <i>Eviews Handout A</i> (In Lessons Folder) <i>Homework #3</i> (In Lessons Folder)
4	Feb. 6-12	Identifying and Estimating ARMA Models <i>Reading:</i> Chapter 2.8 - 2.10 <i>Lecture #4</i> (In Lessons Folder) <i>Homework #4</i> (In Lessons Folder)
5	Feb. 13-19	Stochastic and Deterministic Trends <i>Reading:</i> Chapter 4.1 - 4.5 <i>Lecture #5</i> (In Lessons Folder) <i>Homework #5</i> (In Lessons Folder)
6	Feb. 20-26	Testing for Unit Roots <i>Reading:</i> Chapter 4.6 - 4.10 Appendix 4.2 <i>Lecture #6</i> (In Lessons Folder) <i>Homework #6</i> (In Lessons Folder)

<u>Period #</u>	<u>Start and End Date</u>	<u>Topic for Discussion & Assignment</u>
7	Feb. 27-Mar. 5	Vector Autoregression (VAR) Models <i>Reading:</i> Chapter 5.4 - 5.10 <i>Lecture #7</i> (In Lessons Folder) <i>Homework #7</i> (In Lessons Folder)
8	Mar. 6-19	Reduced-form and Structural VARs <i>Reading:</i> Chapter 5.11 - 5.14 <i>Lecture #8</i> (In Lessons Folder) <i>Homework #8</i> (In Lessons Folder) <i>Eviews Handout B</i> (In Lessons Folder)
9	Mar. 27-Apr. 2	Cointegration and Error-Correction Models <i>Reading:</i> Chapter 6.1 - 6.6 <i>Lecture #9</i> (In Lessons Folder) <i>Homework #9</i> (In Lessons Folder)
10	Apr. 3-16	A Systems Approach to Cointegration <i>Reading:</i> Chapter 6.7 - 6.11 <i>Lecture #10</i> (In Lessons Folder) <i>Homework #10</i> (In Lessons Folder) <i>Eviews Handout C</i> (In Lessons Folder)
11	Apr. 17-23	Models with Time-Varying Coefficients <i>Reading:</i> Chapter 3 <i>Lecture #11</i> (In Lessons Folder) <i>Homework #11</i> (In Lessons Folder) <i>Eviews Handout D</i> (In Lessons Folder)

Additional Information

The narrated PowerPoint lectures have been pre-recorded and are available on the course website. To listen to the lecture, you need to download the PowerPoint files (there are 3-5 files for each lecture). Then, open a PowerPoint file, and start the slide presentation. You will need speakers or headphones to hear the lecture.

There are several data sets that will be used in the lecture and in the homework assignments. They are also posted on the course website under the Lessons tab.

Please submit your homework assignments in Word format, so that I can insert comments and suggestions. You can cut and paste materials from other sources into Word (even handwritten equations or notes). Your Word documents should have the following form:

HW#X_LASTNAME.docx

where X is the period number associated with that homework assignment, and LASTNAME is your last name.

Please try to keep your answers focused and concise. In most cases, I am not interested in seeing detailed regression results, but rather your ***interpretation*** of the regression results. Therefore, presenting your answer using a small table of results will be sufficient and preferred! You can present more information in an appendix, if you are concerned about whether you are providing sufficient detail.

You should submit your answers by clicking on the assignment (which will open a window for submission of the assignment) and uploading your Word document. I will also send back the assignment to you in the same way.

University Policies

General

This course adheres to all University policies described in the academic catalog. A few policies to pay close attention to are noted below.

Students with Disabilities

Johns Hopkins University is committed to providing reasonable and appropriate accommodations to students with disabilities. Students with documented disabilities should contact the coordinator listed on the [Disability Accommodations](#) page. Further information and a link to the Student Request for Accommodation form can also be found on the [Disability Accommodations](#) page.

Ethics & Plagiarism

JHU Ethics Statement: The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Ethical violations include cheating on exams, plagiarism, reuse of assignments, improper use of the Internet and electronic devices, unauthorized collaboration, alteration of graded assignments, forgery and falsification, lying, facilitating academic dishonesty, and unfair competition. Report any violations you witness to the instructor. Read and adhere to JHU's [Notice on Plagiarism](#).

Dropping the Course

You are responsible for understanding the university's policies and procedures regarding withdrawing from courses found in the current catalog. You should be aware of the current deadlines according to the [Academic Calendar](#).

Getting Help

You have a variety of methods to get help on Blackboard. Please consult the help listed in the "Blackboard Help" link for important information. **If you encounter technical difficulty in completing or submitting any online assessment, please immediately contact the designated help desk listed on the [AAP online support page](#).** Also, contact your instructor at the email address listed atop this syllabus.