Course Outline for Economic Forecasting

Department of Economics
Rutgers University
Spring Semester, 2008

Course Information

Title: Economic Forecasting
Code: 220:421:01
Lecture Times: MW 4.30-5.50pm
Location: 213 Murray Hall, CAC

Final Exam: Friday, May 9, 4pm-7pm.

Contact Information

Professor: John Landon-Lane
Office: Room 424 New Jersey Hall, CAC.
Telephone: (732) 932-7691
E-mail: lane@econ.rutgers.edu
Office Hours: TTH 11am-12noon

Course Resources

All materials for this course can be found at the course site at sakai.rutgers.edu. All students who are enrolled in this course have access to this Sakai site automatically. Check this site periodically for class announcements and other information.

Text and Software

The text for this course is:

Francis X. Diebold, *Elements of Forecasting (4th ed.)*, Thomson, South-Western, ISBN 0-324-35904-7.

This is an excellent textbook and should be available in the bookstores.

The computer software that will be used in this course is *Eviews* which is available in the University computer labs and in the undergraduate computing lab in the basement of New Jersey Hall. Students can purchase a full version of this software at a reduced price by asking for an information sheet from the main office of the Economics Department.

Overview of Course

The course is aimed at the student who wishes to have a working knowledge of certain widely-used forecasting techniques. The emphasis of this course will be on techniques that enable the forecaster to come up with good forecasts in a short period of time and reporting those results to a client. This course will focus on the practical aspects of the whole economic forecasting process. That is,

1. understanding the needs of the client
2. decomposing the data into its various components
3. constructing forecasts and forecast confidence intervals for the various components
4. compiling and reporting your results to the client in a clear and concise way.

The course falls into three main parts. In Part I, simple data presentation techniques and analysis of forecast errors are considered. In particular, simple smoothing methods that can be done using standard spreadsheet software are taught. In Part II, formal regression methods are introduced with an emphasis on forecasting trend-stationary time series. In Part III, forecasting non-stationary times series is discussed. We will also discuss some non-linear problems.

Prerequisites

It is expected that all students will have taken principles of economics courses covering microeconomics and macroeconomics (e.g. 220:102 and 220:103 or 220:200), an introductory statistics class (e.g. 960:211 or 960:285), and an introductory regression class (e.g. 220:322). It will be assumed that all students have a good command of the material taught in these courses. It is strongly suggested that you review this material at the beginning of this course.

Lecture Outline

- Part I - Introduction to Forecasting and Simple Smoothing Methods
  - Introduction to Forecasting Problem (Chapters 1-3)
  - Decomposition of Time Series using smoothing methods
  - Evaluation of Forecasts (Chapters 3 and 12)
  - Simple Times Series Forecasting Methods (Chapter 13.4)
- Part II - Forecasting using Regression Methods
  - modeling and forecasting time-trends (Chapter 5)
  - modeling and forecasting seasonal patterns (Chapter 6)
  - modeling and forecasting cycles (Chapters 7, 8 and 9)
  - putting all the components together (Chapter 10)
  - forecasting with regression models (Chapter 11)
- Part III - Forecasting Non-stationary data and additional topics
  - unit roots, ARIMA models and forecasting (Chapter 13)
  - forecasting financial time series - ARCH and GARCH (Chapter 14)
  - forecasting new products using growth curves
  - combining forecasts (Chapter 12)

I reserve the right to add and/or subtract topics as the course progresses. Not all topics will be covered in the same detail. Time constraints may cause some topics to be omitted. Unless otherwise notified, students are responsible for all the topics noted in the lecture outline.

Course Assessment

Final grades will be based on your performance in two examinations and various problems sets and computer assignments set during the course. There will be 4 assignments, one mid-term exam and a final. The breakdown of the course assessment is as follows:

Problem Sets	40%
Mid-term exam	20%
Final exam	40%

If you do not attend an exam, you will receive a zero grade for that exam. Students who cannot attend an exam can, under certain circumstances, make alternative arrangements if they provide me with a note from the Dean's office. I do not give extra-credit assignments. Finally, I regard academic dishonesty as a very serious offence. Any cases of academic dishonesty by a student will be reported to the appropriate officer of the student's college.

Final Comments

1. It is expected that all students will attend lectures, be up to date with their readings and be prepared to participate fully in class. Please ask questions in class or in office hours if you have any problems or misunderstandings. Do not wait until just before an exam to ask questions.

2. The best way to learn is by doing. The problem sets are designed to get you to practice the material introduced in the lectures. I encourage you to form study groups and work together. However, you should write up the answers yourself. Remember to always acknowledge people that helped you in preparing your assignment.

3. If you miss a class I expect that you will catch up the missed notes from another student. I will not be giving out my notes to any student.

4. Please be respectful to your fellow classmates during class. That is, please turn off cell-phones before class, please do not use cell phones or computers to communicate with people during class and please refrain from talking during class.