This course will cover a range of topics in time series econometrics and empirical macroeconomics and finance that arise in current research. This course should be taken by people with an interest in either empirical macro or empirical finance and is likely to be helpful to a graduate student with time-series empirical interests, especially in searching for a dissertation topic.

There is no textbook for the course; instead there are readings from a number of books and journal articles.

The course will involve a number of assignments which will be long and difficult and will involve assembling and working with data. For standardization purposes, you should all do this empirical work in Matlab.

Everyone should turn in their own assignments, though you may work on them together. Doing these assignments carefully and on your own is an important learning experience and is for your own long-term good. The course grade will be based on the assignments.

Here is a list of topics that will be covered and readings on these topics.

1. Structural VARs and the identification of policy shocks. Vector autoregressions are a potentially powerful and widely-used method for identifying the effects of certain underlying shocks, including monetary policy and productivity shocks on macroeconomic aggregates. We will talk about the identifying assumptions that are crucial to this work.
2. The equity premium puzzle.


3. Instrumental variables and GMM. All estimators can be thought of as GMM estimators. This principle will be developed. Identification and problems of weak identification will be discussed. The main applications will be to the estimation of forward-looking macroeconomic models and the consumption CAPM.


4. The Kalman Filter and its Applications. Nonlinear filtering and Markov Chain Monte Carlo. A wide class of problems in applied macroeconometrics is characterized by a model in state-space form with observed data related to an underlying latent process.


5. Markov switching models

Engle, C. and J.D. Hamilton (1992): Long Swings in the Dollar: Are they in the data and do the markets know it, American Economic Review, 80, pp.689-713.

6. Effects of News Announcements. News announcements, in conjunction with high-frequency data, come as close as we get to a natural experiment in macroeconomics.


7. Macroeconomics and the Term Structure of Interest Rates. This topic will consider exercises on reverse-engineering macroeconomic expectations from benchmark fixed income markets. It considers work on the term structure of interest rates, but not getting into the more technical multi-factor models of the term structure. It will be concerned with such questions as the measurement of monetary policy expectations from
futures and options markets, the effects of inflation targeting, predictive relations and the term structure, stock-bond correlations and their interpretation.


8. Forecasting. Special attention will be given to new (and old) developments in forecasting with large datasets, including model averaging and factor methods and also to inference when the regressors are highly persistent. The role of surveys in forecasting will also be discussed.


9. Real-time data in macroeconomics. Data get constantly revised. Part of this is the effect of more complete information becoming available; some of it is definitional changes. Sometimes the effects of data revisions can be large and can alter the conclusions of empirical studies. The Philadelphia Fed has done an enormous public service in making a real-time dataset available to researchers.


Faust, J., J. Rogers and J.H. Wright (2005): News and Noise in G-7 GDP Announcements, Journal of Money, Credit and Banking, 37, pp.403-419


10. Unit Roots, Spurious Regressions, Near Unit Roots and Cointegration. This topic was all the rage in time series econometrics 20 years ago. It’s not generating anything like the same research interest now, but it’s still important to be familiar with some of the classic papers in this literature and what the implications are for inference.


12. Structural stability. Do economic relationships change over time? How do we tell, especially when the time of the possible break is not known a priori.


13. Estimation of the output-inflation tradeoff (if any). This applies a number of the methods for identification, handling structural change etc. that we cover in the course.


14. Empirical Work Related to the Financial Crisis. The current financial crisis and recession is going to be the subject of research in macroeconomics and finance for a generation, including applied econometric work. We’ll talk about a few of the papers related to the topic and to “quantitative easing” more generally


