

Johns Hopkins University
Part-Time Graduate Programs
Macroeconometrics
Spring 2008

Professor: Ed Gamber
Email: gambere@lafayette.edu

Tuesday 6:00 – 8:45 pm
Course Number: 440.614.51

Objectives

The twin objectives of this course are to 1) introduce students to macroeconomic theory and techniques and 2) provide students with practice applying those techniques. The topics covered in the course are: Solow Growth, consumption, the Phillips curve, monetary policy shocks and the New Keynesian Macro model. Techniques covered in this course include time series decomposition (ARMA), unit roots and cointegration, structural vector autoregressions, instrumental variables, and generalized method of moments. The course involves frequent use of econometric software to provide students with hands-on experience in applying the techniques discussed in class.

The course begins by examining the basic tools of time series analysis. Those tools are applied to the Solow model and the Phillips Curve. We next focus on issues that arise when data are non-stationary. Techniques for handling non-stationary data are then applied to the Phillips Curve and a model of labor productivity. We then move to multivariate time series models: vector autoregressions, cointegration and vector error-correction models. These techniques are applied to consumption, money demand and measurement of monetary policy shocks. We will then take a break from time-series issues and look at instrumental variable estimation as it relates to cross-country growth regressions. The final portion of the course is devoted to the generalized method of moments estimation technique applied to the new Keynesian macro model.

Prerequisites and Requirements

Students should have completed the core Econometrics course (440.606.51) before taking this class. In addition, some familiarity with basic linear algebra tools (matrix multiplication and inversion, for example) would be helpful. There will be a brief review of the necessary linear algebra concepts at the beginning of the course. There will be a final exam, scheduled during the final class meeting. In addition, there will be five homework assignments, which consist of analytical (problem solving) as well as computational problems (working with data and software). Because an important objective of this class is to enable students to do practical econometric work on their own, these homework assignments carry a large weight in the overall course grade. To offer students some flexibility, the course grade will be based on the five highest out of the six (five assignments plus the final) grades, with each grade accounting for 20%. Homework assignments will be handed out, and posted on the course website, two weeks prior to their due date.

Nature of the Material

Macroeconometrics is a technical field. Some of the assigned readings will be challenging. For those of you who want more challenging material, see the readings listing under the headings "Further Reading." The syllabus is also very ambitious. Do not get discouraged if we cover only 2/3 of the listed material. You can do the rest on your own during the summer.

Reading Materials and Software

Required text: Favaro, Carlo A. Applied Macroeconometrics, Oxford University Press, 2001. ISBN paperback: 0-19-829685-1 (the paperback edition is substantially less expensive). Available in the bookstore.

Required software: EViews 4.1 student edition. Available in the bookstore.

In addition to the required text we will also cover several articles and book chapters. I have placed these readings on electronic reserve. I will distribute the password to access these materials at our first class meeting.

Book Chapters on Reserve

Hayashi, Fumio, Econometrics, Princeton University Press, 2000, Chapters 3 and 4.

Diebold, Francis X., Elements of Forecasting, fourth edition, 2007, Chapters 7 and 8.

Enders, Walter, Applied Time Series, John Wiley & Sons, 1995, Chapter 5.

Stock, James H. and Mark W. Watson, Introduction to Econometrics, second edition. Pearson, Addison Wesley, 2007. Chapters 7, 12, 14, 15, 16 (I assume most of you have this book for your econometrics course).

The assigned readings from these books are listed below by author. Also listed below are the full citations for the articles on reserve.

Course Outline

Topic: Review of econometrics and linear algebra (1 week)

Stock and Watson, Chapter 7

Favero, Chapter 1

Application: The Solow Growth Model

Topic: Stationary Time Series (approximately 2 weeks)

Stock and Watson, Chapter 14 (sections 14.1 through 14.5)

Stock and Watson, Chapter 15

Deibold, Chapters 7 and 8

Favero, Chapter 2 (sections 2.1 through 2.4)

Application: Forecasting Inflation

Topic: Nonstationary Time Series (approximately 2 weeks)

Stock and Watson, chapters 14 (section 14.6)

Favero, Chapter 2 (sections 2.5 and 2.6)

Stock, J. and M. Watson, "Variable Trends in Economic Time Series," Journal of Economic Perspectives, vol. 2, no. 3, summer 1988, pp. 147-174.

Further Reading:

Nelson, C. and H. Kang, "Pitfalls in the Use of Time as an Explanatory Variable in Regression," Journal of Business & Economic Statistics, vol. 2, no. 1, January 1984, pp. 73-82.

Stock, J. and M. Watson, "Unit Roots, Structural Breaks, and Trends, Ch. 46 in Handbook of Econometrics, vol. IV, edited by Robert Engle and Daniel McFadden, Amsterdam: Elsevier, 1994.

Application: The Phillips Curve

Stock, J. and M. Watson, "Forecasting Inflation," Journal of Monetary Economics 44, no. 2, (1999), 293-335.

Topic: Structural breaks (approximately 1 week)

Stock and Watson, Chapter 14 (Section 14.7)

Hansen, B., "The New Econometrics of Structural Change: Dating Breaks in U.S. Labor Productivity," The Journal of Economic Perspectives, Vol. 15, No. 4. (Autumn, 2001), pp. 117-128.

Further Reading:

Atkeson, A. and L. Ohanian, "Are Phillips Curves Useful for Forecasting Inflation?" Quarterly Review, Federal Reserve Bank of Minneapolis, vol. 25, no. 1, Winter 2001.

Stock, J and M. Watson "Has Inflation Become Harder to Forecast," Journal of Money, Credit, and Banking vol. 39, 2007, 3-34

Applications: U.S. Labor Productivity, The Phillips Curve

Topic: Vector Autoregressions I (approximately 2 weeks)

Stock and Watson, Chapter 16

Enders, Chapter 5, sections 5-9

Favero, Chapter 2 (sections 2.7-2.9)

Applications: Consumption and Money Demand

Topic: Vector Autoregressions II (approximately 2 weeks)

Enders, Chapter 5, sections 10-13.

Favero, Chapters 4, 5 and 6

Bernanke, Ben S. and A. Blinder, "Credit, Money and Aggregate Demand," The American Economic Review, vol. 82, no. 4, 1992, pp. 901-921.

Blanchard, O. and D. Quah, "The Dynamic Effects of Aggregate Demand and Supply Disturbances," The American Economic Review, vol. 79, no. 4, September 1989, pp. 655-673.

Further Reading:

Christiano, L., M., Eichenbaum and C. Evans, "Monetary Policy Shocks: What Have We Learned and to What End? In the Handbook of Macroeconomics, John B. Taylor and Michael Woodford, eds., North-Holland, 1999.

Romer, C. and D. Romer "A New Measure of Monetary Shocks: Derivation and Implications" American Economic Review vol. 94, September 2004, pp. 1055-1084.

Applications: Monetary Policy Shocks, Aggregate Demand and Supply Shocks

Topic: Instrumental Variables Regression (approximately 1 week)

Stock and Watson, Chapter 12

Acemoglu, D., S. Johnson and J. Robinson “The Colonial Origins of Comparative Development: An Empirical Investigation,” American Economic Review, December, 2001, volume 91, pp. 1369-1401.

Topic: Generalized Method of Moments (approximately 2 weeks)

Hayashi, chapters 3 and 4.

Wooldridge, J. “Applications of Generalized Method of Moments Estimation, Journal of Economic Perspectives, vol. 15, no. 4, Fall 2001, pp. 87-100.

Favero, Chapter 7

Gali, J., Gertler, M., “Inflation dynamics: a structural econometric analysis” Journal of Monetary Economics, vol. 44, 1999, pp. 195–222.

Clarida, Richard, Jordi Gali and Mark Gertler. “Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory.” Quarterly Journal of Economics, February, 2000, 115:1, pp. 147–80.

Further Reading:

Gali, J., Gertler, M., “Macroeconomic Modeling for Monetary Policy Evaluation,” Journal of Economic Perspectives, vol. 21, no. 4, fall 2007, pp. 25-45.