

Econ 820
Advanced Macroeconomics
Fall 2018

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Course Goals

Students should reach an understanding of monetary theory, policy and RBC theory substantially deeper than they attained in Econ 720-721.

Text and Frequently Cited References

- (TSA) Hamilton, James, *Times Series Analysis*, Princeton University Press, 1994.
- (CW) Walsh, Carl E., *Monetary Theory and Policy, Second Edition*, The MIT Press, Cambridge, MA, 2003, Course text
- (TW) Taylor, John and Michael Woodford, eds., *Handbook of Macroeconomics*, Elsevier Science Publishers, New York, 1999
- (MW) Woodford, Michael, *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, Princeton, NJ, 2003.
- (FG) Froyen, Richard and Alfred Guender, *Monetary Policy in Open and Closed Economies*, book draft, 2005

Resources for Class

We will be doing some “real-time” programming, model simulation, and empirical estimation in class, so you should bring your laptop to class. (If you do not have a laptop, talk to me and we will arrange something.) You have access to the following programs.

1. Matlab
2. Dynare (available for free at <http://www.dynare.org>)
3. Software for empirical estimation (such as Matlab, Stata, Eviews, etc.)

Dates

Final Exam Date set by registrar

Project Due Students who wish to receive a letter grade by the end of the semester should turn in their project paper at the final exam date.

Examinations and Grades

Grades will be based on assignments (67%) and a course project (33%).

Course Project

Students who elect the standard course project will select, with the instructors’ help, several papers in an area of interest to them, write individual summary of each paper and write a ten page overview. The overview should explain the question(s) addressed by the readings, the answers they provide, and unanswered questions worthy of further work. Students may negotiate an alternative project with the instructors. In the past, some students have chosen to reproduce numerical research described in Walsh. Others have written term papers on an issue that they want to explore as a potential thesis topic.

Section 1: Econometric Overview

Difference equations and lag operators, TSA chapters 1 and 2

Stationary ARMA processes and Forecasting, TSA chapter 3

Linear Regression Models, TSA Chapter 8

Vector Time Series, TSA Chapter 10

Vector Autoregression

Atheoretical TSA Chapter 11, sections 11.1 – 11.5

Structural TSA, Chapter 11, section 11.6

Introduction to nonstationary time series, TSA Chapters 15 and 16

Cointegration, TSA Chapter 19

Section 2: Applications

Estimating Causal Effects in Macroeconomics: General Methods and Pitfalls

Ramey, Valerie, “Macroeconomic Shocks and Their Propagation,” *Handbook of Macroeconomics 2016*, sections 1 and 2

Stock, James and Mark Watson, “Factor Models and Structural Vector Autoregressions in Macroeconomics,” *Handbook of Macroeconomics 2016*

Monetary Policy

A. Theoretical Models

Christiano, Lawrence J, Martin Eichenbaum, Charles L. Evans, “Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy,” *Journal of Political Economy*, Vol. 113, No. 1, February 2005.

Smets, Frank and Raf Wouters, “An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area,” *Journal of the European Economics Association*, Volume 1, Issue 5, pages 1123–1175, September 2003.

Smets, Frank and Raf Wouters, "Shocks and Frictions in U.S. Business Cycles: A Bayesian DSGE Approach," *American Economic Review*, 97(3) June 2007: 586-606.

B. Monetary Policy SVAR and Short-Run Restrictions

Does Money Affect Output? A Look at Empirical Evidence

CW, Chapter 1

Christiano, Lawrence, Martin Eichenbaum, and Charles L. Evans, "Monetary Policy Shocks: What Have We Learned And To What End?" (TW) Chapter 2.

McCandless, G. T. and W. E. Weber, "Some Monetary Facts," *Federal Reserve Bank of Minneapolis Quarterly Review*, 19 (3), 1995, 2-11.

- * Sims, C., "Comparison of Interwar and Postwar Business Cycles: Monetarism Reconsidered," *American Economic Review*, 70 (2), 1980, 250-57.
- * Sims, C. A., "Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy," *European Economic Review*, 36 (5), 1992, 975-1000.

Why Does Money Affect Output?

Blanchard, Olivier, "Why Does Money Affect Output?" Friedman, Benjamin M. and F.H. Hahn (eds.) *Handbook of Monetary Economics*, Vol. II. Amsterdam: Elsevier Science Publishers B.V., 1990, Chapter 15.

Lucas, R. E. Jr., "Nobel Lecture: Monetary Neutrality," *Journal of Political Economy*, 104 (4), 1996, 661-82.

Sargent, T. J., "The Observational Equivalence of Natural and Unnatural Rate Theories of Macroeconomics," *Journal of Political Economy*, 84 (3), 1976, 631-40

- * Campbell, John Y., "Asset Prices, Consumption, and the Business Cycle," TW, Chapter 19.
- * Samuelson, P. A. , "What Classical and Neo-classical Monetary Theory Really Was," *Canadian Journal of Economics*, 1 (1), 1968, 1-15.

Empirical Effects of Monetary Policy

Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," *Handbook of Macroeconomics*, 2016, Sections 3.

Bernanke, Ben S. and Alan S. Blinder, "The Federal Funds Rate and the Channels of Monetary Transmission," *The American Economic Review* Vol. 82, No. 4 (Sep., 1992), pp. 901-921. 8

Bernanke, Ben S. and Ilian Mihov, "Measuring Monetary Policy," *The Quarterly Journal of Economics* Vol. 113, No. 3 (Aug., 1998), pp. 869-902.

Christiano, Lawrence J, Martin Eichenbaum, Charles L. Evans, "What Have We Learned and To What End?" in *Handbook of Macroeconomics*, ed. Michael Woodford and John D. Taylor, 1999.

Bernanke, Ben S., [Jean Boivin](#) and [Piotr Elias](#), "Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach," *Quarterly Journal of Economics* Volume 120, Issue 1, 2002, Pp. 387-422.

Romer, Christina D., and David H. Romer, "A New Measure of Monetary Policy Shocks: Derivation and Implications," *American Economic Review*, 94(4) (September 2004): 1055-84 .

Cochrane, John, "Comments on 'A new measure of monetary shocks: Derivation and implications' By Christina Romer and David Romer." July 17 2004, presented at NBER EFG meeting
http://faculty.chicagobooth.edu/john.cochrane/research/papers/talk_notes_new_measure_2.pdf

*Coibion, Olivier, "Are the Effects of Monetary Policy Shocks Big or Small?" *American Economic Journal: Macroeconomics*, Volume 4, Number 2, April 2012, pp. 1-32(32)

Barakchian, S. Mahdi and Christopher Crowe, "Monetary Policy Matters: Evidence from New Shocks," *Journal of Monetary Economics*, [Volume 60, Issue 8](#), November 2013, Pages 950–966

Boivin, Jean, Michael T. Kiley, and Frederick S. Mishkin, "How Has the Monetary Transmission Mechanism Evolved Over Time?" *Handbook of Monetary Economics*. 2010.

*Gertler, Mark and Peter Karadi, "Monetary Policy Surprises, Credit Costs, and Economic Activity," *American Economic Journal: Macroeconomics*, 7(1) (January 2015) 44–76.

Wu, Jing Cynthia, and Fan Dora Xia. "Measuring the macroeconomic impact of monetary policy at the zero lower bound." *Journal of Money, Credit and Banking* 48.2-3 (2016): 253-291.

Monetary Policy with High Frequency Data

Kuttner, Kenneth, "Monetary Policy Surprises and Interest Rates: Evidence from the Fed Funds Futures Market," *Journal of Monetary Economics* 47, (2001) 523-544

Cochrane, John and Monika Piazzesi, "Asset Prices and Monetary Policy: The Fed and Interest Rates – A High Identification," AER Papers and Proceedings, May 2002

Faust, John, Eric Swanson and Jonathan Wright, "Identifying VARs Based on High Frequency Futures Data," *Journal of Monetary Economics* 51 (2004) 1107-1131

Poole, William and Robert Rasche, "Perfecting the Market's Knowledge of Monetary Policy," *Journal of Financial Services Research* 18:2/3 (2000) 255-298

Piazzesi, Monika and Eric Swanson, "Futures Prices and Risk-Adjusted Forecasts of Monetary Policy," *Journal of Monetary Economics* 2008, 55, May issue, pp. 677-691.

Woodford, Michael, "Monetary Policy in the Information Economy," NBER Working Paper 8674

Hamilton, James, "Daily Changes in the Fed Funds Futures Prices," *Journal of Money, Credit, and Banking* June 2009, vol. 41, no. 4, pp. 567-582

Policy Analysis in New Keynesian Models

CW, Chapter 11

MW, Chapters 1 and 4-6

* _____, Firm-Specific Capital, Nominal Rigidities, and the Business Cycle, NBER Working Paper 11034, January 2005.

Christiano, Eichenbaum, and Evans, "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*, 113 (1), 2005, 1-45.

Eichenbaum, Martin and Jonas Fisher, "Evaluating Calvo-Style Sticky Price Models," Working Paper, March, 2005

* Fuhrer, Jeffrey C., "Inflation/output variance trade-offs and optimal monetary policy," *Journal of Money Credit and Banking* 29, 1997, 214-234.

* Fuhrer, Jeffrey C. and George R. Moore, "Monetary policy trade-offs and the correlation between nominal interest rates and real output," *American Economic Review* 85, 1995, 219-239.

* McCallum, Bennett T. and Edward Nelson, "An optimizing IS-LM Specification for Monetary Policy and Business Cycle Analysis," *JMCB*, 31 (3, Part 1), 1999, 277-431

* Rotemberg, Julio J. and Michael Woodford, "An optimization-based econometric framework for the evaluation of monetary policy," in Bernanke, Ben S. and Julio J. Rotemberg, eds., *NBER Macroeconomics Annual 1997*, MIT Press, Cambridge, MA, 1997, 297-346.

Salemi, Michael K., "Monetary Policy Evaluation and Inverse Control," July 2005, forthcoming in the *JMCB*

Measuring the Aggregate Effects of Government Spending

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," *Handbook of Macroeconomics*, 2016, Section 4.

Rotemberg, Julio, and Woodford, Michael, "Oligopolistic Pricing and the Effects of Aggregate Demand on Economic Activity," *Journal of Political Economy*, 100 (1992), 1153–1297.

Ramey, Valerie A. and Matthew Shapiro, "Costly Capital Reallocation and the Effects of Government Spending," *Carnegie Rochester Conference on Public Policy* (1998).

*Blanchard, Olivier, and Roberto Perotti, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, 117 (2002), 1329-1368.

Mountford, Andrew and Harald Uhlig, "What are the Effects of Fiscal Policy Shocks?" *Journal of Applied Econometrics* 24 (September/October 2009): 960-992.

Ramey, Valerie A., "Defense News Shocks, 1889-2015: An Analysis Based on News Sources," UCSD manuscript. http://econ.ucsd.edu/~vramey/research/Defense_News_Narrative.pdf .

Burnside, Craig, Martin Eichenbaum, and Jonas Fisher, "Fiscal Shocks and their Consequences," *Journal of Economic Theory*, 115 (2004), 89-117.

Fisher, Jonas D.M., and Ryan Peters, "Using Stock Returns to Identify Government Spending Shocks," *The Economic Journal*, 120 (May 2010): 414-436.

Ilzetski, Ethan, Enrique G. Mendoza, Carlos A. Végh, "How Big (Small?) are Fiscal Multipliers?" 2013. "How big (small?) are fiscal multipliers?," *Journal of Monetary Economics*, Elsevier, vol. 60(2), pages 239-254.

Blanchard, Olivier J., and Daniel Leigh. 2013. "Growth Forecast Errors and Fiscal Multipliers." *American Economic Review*, 103(3): 117-20.

*Auerbach, Alan and Yuriy Gorodnichenko. 2012a. "Measuring the Output Responses to Fiscal Policy." *American Economic Journal: Economic Policy* 4 (2): 1-27.

Auerbach, Alan and Yuriy Gorodnichenko. 2012b. "Fiscal Multipliers in Recession and Expansion" forthcoming in *Fiscal Policy After the Financial Crisis*, eds. Alberto Alesina and Francesco Giavazzi, University of Chicago Press.

Ramey, Valerie A. and Sarah Zubairy, "Government Spending Multipliers in Good Times and in Bad: Evidence from 20th Century Historical Data," forthcoming, *Journal of Political Economy*.

Miyamoto, Wataru, Thuy Lan Nguyen, and Dmitriy Sergeyev. "Government Spending Multipliers under the Zero Lower Bound: Evidence from Japan." (2016).

Measuring the Aggregate Effects of Taxes

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," *Handbook of Macroeconomics*, 2016, Section 4.

*Blanchard, Olivier, and Roberto Perotti, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, 117 (2002), 1329-1368.

*Romer, Christina D., and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review*, 100 (June 2010): 763-801 . 6

Leeper, Eric M., Todd B. Walker, Shu-Chun Susan Yang, "Fiscal Foresight and Information Flows," *Econometrica* 81 (3) May 2013: 1115-1145.

House, Christopher L., and Matthew D. Shapiro. 2006. "Phased-In Tax Cuts and Economic Activity." *American Economic Review*, 96(5): 1835-1849.

Mertens, Karel, and Morten O. Ravn. 2012. "Empirical Evidence on the Aggregate Effects of Anticipated and Unanticipated US Tax Policy Shocks." *American Economic Journal: Economic Policy*, 4(2): 145-81.

*Mertens, Karel, and Morten O. Ravn., "A Reconciliation of SVAR and Narrative Estimates of Tax Multipliers," *Journal of Monetary Economics* 2014.

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Technology Shock SVAR and Long-Run Restrictions

Gali, Jordi, "Technology, Employment, and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations?" *American Economic Review*, 249-271, March 1999

Shapiro, Matthew D. and Watson, Mark W. "Sources of Business Cycle Fluctuations," in Stanley Fischer, ed., NBER Macroeconomics Annual 1988, Volume 3. Cambridge, MA: MIT Press, 1988, pp. 111-48

Neville Francis and Valerie Ramey, "Measures of Hours Per Capita and their Implications for the Technology-Hours Debate". *Journal of Money Credit and Banking*, September 2009, Volume 41, Issue 6, pp 1071-1097

Neville Francis and Valerie Ramey, "Is the Technology-Driven Real Business Cycle Hypothesis Dead? Shocks and Aggregate Fluctuations Revisited", *Journal of Monetary Economics*, November 2005, volume 52, issue 8, pages 1379-1399.

Neville Francis, Michael Owyang and Athena Theodorou, "The Use of Long-Run Restrictions for the Identifying of Technology Shocks", Federal Reserve Bank of St. Louis *Review*, November/December 2003, 85(6), pp. 53-66.

Neville Francis, Michael Owyang, Jennifer Roush and Ricardo DiCecio, "A Flexible Finite-Horizon Alternative Identification of Technology Shocks", *Review of Economics and Statistics*, October 2014, 96(4): 638-647

Section 3: Solving Models: Dynare and Uhlig Codes

Strategies for Solving Linear Rational Expectations Models

Blanchard, Olivier J. and Charles M. Kahn, "The solution of linear difference models under rational expectations," *Econometrica*, 48 (5), 1980, 1305-12

Klein, Paul, "Using the generalized Schur form to solve a multivariate linear rational expectations model," *Journal of Economic Dynamics and Control*, 24, 2000, 1405-23

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- * Soderlind, Paul, "Lecture notes: Solving linear expectational difference equations," Stockholm School of Economics, 1999.
- * Uhlig, Harald, "A toolkit for analyzing nonlinear dynamic stochastic models easily," Discussion Paper 101, Federal Reserve Bank of Minneapolis, June, 1995.