

14.461 Advanced Macroeconomics I (1st half)
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Fall 2005

Part 1: Monetary Policy, Inflation, and the Business Cycle

The lectures will provide an overview of the recent literature on dynamic optimizing models with nominal rigidities and their implications for the design of monetary policy. Lecture notes will be handed out during the course. A list of topics to be covered and reading list with some of the key articles is provided below.

Motivation and Evidence

Beyond RBC Theory. Long Run Evidence. Reduced Form Evidence. The Effects of Monetary Policy Shocks.

Walsh, Carl E. (2003): *Monetary Theory and Policy*, Second Edition, MIT Press, chapter 1.

McCandless, George T., Warren Weber (1995): "Some Monetary Facts," Federal Reserve Bank of Minneapolis, *Quarterly Review*

Barro, Robert (1998): *The Determinants of Economic Growth*, MIT Press, chapter 3. (NBER WP #5698)

Bruno, Michael, and William Easterly (1998): "Inflation Crises and Long Run Growth," *Journal of Monetary Economics*, vol. 41, no. 1, 3-26

Cooley, Thomas F. and Gary D. Hansen (1995): "Money and the Business Cycle," in T. Cooley ed.: *Frontiers of Business Cycle Research* (Princeton University Press), section 7.2.

Stock, James, and Mark W. Watson (2000): "Business Cycle Fluctuations in U.S. Macroeconomic Time Series," in J.B. Taylor and M. Woodford eds., *Handbook of Macroeconomics*, volume 1A. (also NBER WP 6528))

Romer, Christina, and David Romer (1989): "Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwartz," *NBER Macroeconomics Annual*, 4, 121-170.

Christiano, Lawrence J., Martin Eichenbaum, and Charles L. Evans (1998): "Monetary Policy Shocks: What Have We Learned and to What End?," in J.B. Taylor and M. Woodford eds., *Handbook of Macroeconomics*, volume 1A, 65-148. (also NBER WP 6400).

Peersman, Gert and Frank Smets (2003): "The Monetary Transmission Mechanism in the Euro Area: More Evidence from VAR Analysis," in Angeloni et al. (eds.) *Monetary Policy Transmission in the Euro Area*, Cambridge University Press, (also ECB WP no. 91).

Galí, Jordi (1992): "How Well Does the IS-LM Model Fit Postwar U.S. Data?," *Quarterly Journal of Economics* 709-738.

Bernanke, Ben S., and Ilian Mihov (1997): "Measuring Monetary Policy," *Quarterly Journal of Economics*, vol. CXIII, no. 3, 869-902.

Eichenbaum, Martin and Charles E. Evans (1995): "Some Empirical Evidence on the Effects of Shocks to Monetary Policy on Exchange Rates," *Quarterly Journal of Economics*

110, no. 4, 975-1010.

Bils, Mark and Peter J. Klenow (2004): "Some Evidence on the Importance of Sticky Prices," *Journal of Political Economy*, vol 112 (5), 947-985.

Dhyne, Emmanuel et al. (2005): "Price Setting in the Euro Area: Some Stylised Facts from Individual Consumer Price Data," mimeo.

Alvarez, Luis et al. (2005): "Sticky Prices in the Euro Area: Evidence from Micro-Data," mimeo.

A Simple Framework for Monetary Policy Analysis

Households. Firms. Marginal costs and markups. Elements of equilibrium. Money demand. Capital accumulation.

Walsh, Carl E. (2003): *Monetary Theory and Policy*, Second Edition, MIT Press, chapter 2 (also related: chapter 3)

Woodford, Michael (2003): *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, chapter 1.

Flexible Prices

The classical monetary model. Optimal price setting. Neutrality. Monetary policy rules and price level determination. Sources of non-neutrality. Optimal monetary policy. Hyperinflations.

Walsh, Carl E. (2003): *Monetary Theory and Policy*, Second Edition, MIT Press, chapter 2.

Woodford, Michael (2003): *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, chapter 2.

Cooley, Thomas F. and Gary D. Hansen (1995): "Money and the Business Cycle," in in T. Cooley ed.: *Frontiers of Business Cycle Research* (Princeton University Press).

Cooley, Thomas F. and Gary D. Hansen (1989): "Inflation Tax in a Real Business Cycle Model," *American Economic Review* 79, 733-748.

King, Robert G., and Mark Watson (1996): "Money, Prices, Interest Rates, and the Business Cycle," *Review of Economics and Statistics*, vol 78, no 1, 35-53.

Chari, V.V., and Patrick J. Kehoe (1999): "Optimal Fiscal and Monetary Policy," in in J.B. Taylor and M. Woodford eds., *Handbook of Macroeconomics*, volume 1C, 1671-1745.

Correia, Isabel, and Pedro Teles (1999): "The Optimal Inflation Tax," *Review of Economic Dynamics*, vol. 2, no.2 325-346.

A Baseline Sticky Price Model

The Calvo model. The new Keynesian Phillips curve. The output gap and the natural rate of interest. The effects of monetary policy shocks. Evidence on inflation dynamics. Alternative time-dependent models: convex price adjustment costs, the Taylor model, the truncated Calvo model. State-dependent models.

Walsh, Carl E. (2003): *Monetary Theory and Policy*, Second Edition, MIT Press, chapter 5.

Woodford, Michael (2003): *Interest and Prices: Foundations of a Theory of Monetary*

Policy, Princeton University Press, chapter 4.

Calvo, Guillermo (1983): “Staggered Prices in a Utility Maximizing Framework,” *Journal of Monetary Economics*, 12, 383-398.

Yun, Tack (1996): “Nominal Price Rigidity, Money Supply Endogeneity, and Business Cycles,” *Journal of Monetary Economics* 37, 345-370.

King, Robert G., and Alexander L. Wolman (1996): “Inflation Targeting in a St. Louis Model of the 21st Century,” *Federal Reserve Bank of St. Louis Review*, vol. 78, no. 3. (NBER WP #5507).

Fuhrer, Jeffrey C. and George R. Moore (1995): “Inflation Persistence”, *Quarterly Journal of Economics*, Vol. 110, February, pp 127-159.

Galí, Jordi and Mark Gertler (1998): “Inflation Dynamics: A Structural Econometric Analysis,” *Journal of Monetary Economics*, vol 44, no. 2, 195-222.

Sbordone, Argia (2002): “Prices and Unit Labor Costs: A New Test of Price Stickiness,” *Journal of Monetary Economics*, vol. 49, no. 2, 265-292.

Galí, Jordi, Mark Gertler, David López-Salido (2001): “European Inflation Dynamics,” *European Economic Review* vol. 45, no. 7, 1237-1270.

Galí, Jordi, Mark Gertler, David López-Salido (2005): “Robustness of the Estimates of the Hybrid New Keynesian Phillips Curve,” *Journal of Monetary Economics*, forthcoming.

Eichenbaum, Martin and Jonas D.M. Fisher (2004): “Evaluating the Calvo Model of Sticky Prices,” NBER WP 10617.

Mankiw, N. Gregory and Ricardo Reis (2002): “Sticky Information vs. Sticky Prices: A Proposal to Replace the New Keynesian Phillips Curve,” *Quarterly Journal of Economics*, vol. CXVII, issue 4, 1295-1328.

Rotemberg, Julio (1996): “Prices, Output, and Hours: An Empirical Analysis Based on a Sticky Price Model,” *Journal of Monetary Economics* 37, 505-533.

Chari, V.V., Patrick J. Kehoe, Ellen R. McGrattan (2000): “Sticky Price Models of the Business Cycle: Can the Contract Multiplier Solve the Persistence Problem?,” *Econometrica*, vol. 68, no. 5, 1151-1180.

Wolman, Alexander (1999): “Sticky Prices, Marginal Cost, and the Behavior of Inflation,” *Economic Quarterly*, vol 85, no. 4, 29-48.

Dotsey, Michael, Robert G. King, and Alexander L. Wolman (1999): “State Dependent Pricing and the General Equilibrium Dynamics of Money and Output,” *Quarterly Journal of Economics*, vol. CXIV, issue 2, 655-690.

Dotsey, Michael, and Robert G. King (2005): “Implications of State Dependent Pricing for Dynamic Macroeconomic Models,” *Journal of Monetary Economics*, 52, 213-242.

Golosov, Mikhail, Robert E. Lucas (2005): “Menu Costs and Phillips Curves” mimeo.

Gertler, Mark and John Leahy (2005): “A Phillips Curve with an Ss Foundation,” mimeo.

Monetary Policy Design in the Baseline Model

A benchmark case. Optimal monetary policy and its implementation. The Taylor Principle. Simple Monetary Policy Rules. Second order approximation to welfare losses. Evidence on Monetary Policy rules. The effects of technology shocks: theory and evidence.

Galí, Jordi (2003): “New Perspectives on Monetary Policy, Inflation, and the Business

Cycle,” in *Advances in Economics and Econometrics*, volume III, edited by M. Dewatripont, L. Hansen, and S. Turnovsky, Cambridge University Press (also available as NBER WP #8767).

Woodford, Michael (2003): *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, chapter 6.

Yun, Tack (2005): “Optimal Monetary Policy with Relative Price Distortions” *American Economic Review*, vol. 95, no. 1, 89-109

Blanchard, Olivier and Charles Kahn (1980), “The Solution of Linear Difference Models under Rational Expectations”, *Econometrica*, 48, 1305-1311

Bullard, James, and Kaushik Mitra (2002): “Learning About Monetary Policy Rules,” *Journal of Monetary Economics*, vol. 49, no. 6, 1105-1130.

Woodford, Michael (2001): “The Taylor Rule and Optimal Monetary Policy,” *American Economic Review* 91(2): 232-237 (2001).

Rotemberg, Julio and Michael Woodford (1999): “Interest Rate Rules in an Estimated Sticky Price Model,” in J.B. Taylor ed., *Monetary Policy Rules*, University of Chicago Press.

Benhabib, Jess, Stephanie Schmitt-Grohe, and Martin Uribe (2001): “The Perils of Taylor Rules,” *Journal of Economic Theory* 96, 40-69.

Levin, Andrew, Volker Wieland, and John C. Williams (2003): “The Performance of Forecast-Based Monetary Policy Rules under Model Uncertainty,” *American Economic Review*, vol. 93, no. 3, 622-645.

Clarida, Richard, Jordi Galí, and Mark Gertler (2000): “Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory,” *Quarterly Journal of Economics*, vol. 115, issue 1, 147-180.

Taylor, John B. (1998): “An Historical Analysis of Monetary Policy Rules,” in J.B. Taylor ed., *Monetary Policy Rules*, University of Chicago Press.

Orphanides, Athanasios (2003): “The Quest for Prosperity Without Inflation,” *Journal of Monetary Economics* 50, 633-663

Galí, Jordi (1999): “Technology, Employment, and the Business Cycle: Do Technology Shocks Explain Aggregate Fluctuations?,” *American Economic Review*, vol. 89, no. 1, 249-271.

Basu, Susanto, John Fernald, and Miles Kimball (2004): “Are Technology Improvements Contractionary?,” *American Economic Review*, forthcoming (also NBER WP#10592).

Francis, Neville, and Valerie Ramey (2005): “Is the Technology-Driven Real Business Cycle Hypothesis Dead? Shocks and Aggregate FLuctuations Revisited,” *Journal of Monetary Economics*, forthcoming.

Galí, Jordi and Pau Rabanal (2004): “Technology Shocks and Aggregate Fluctuations: How Well Does the RBC Model Fit Postwar U.S. Data?,” *NBER Macroeconomics Annual 2004*, 225-288. (also as NBER WP#10636).

Christiano, Lawrence, Martin Eichenbaum, and Robert Vigfusson (2003): “What happens after a Technology Shock?,” NBER WP#9819.

Galí, Jordi, J. David López-Salido, and Javier Vallés (2003): “Technology Shocks and Monetary Policy: Assessing the Fed’s Performance,” *Journal of Monetary Economics*, vol. 50, no. 4., 723-743.

Extensions of the Baseline Model and their Implications for Monetary Policy

Cost-push shocks. Nominal wage rigidities. Monetary frictions. Inflation inertia. Real wage rigidities. Steady state distortions. Estimated medium-scale models.

Giannoni, Marc P., and Michael Woodford (2003): "Optimal Inflation Targeting Rules," in B. Bernanke and M. Woodford, eds. *The Inflation Targeting Debate*, Chicago, Chicago University Press. (also NBER WP# 9939).

Woodford, Michael (2003): *Interest and Prices: Foundations of a Theory of Monetary Policy*, Princeton University Press, chapters 6-8.

Clarida, Richard, Jordi Galí, and Mark Gertler (1999): "The Science of Monetary Policy: A New Keynesian Perspective," *Journal of Economic Literature*, vol. 37, no. 4, 1661-1707.

Erceg, Christopher J., Dale W. Henderson, and Andrew T. Levin (2000): "Optimal Monetary Policy with Staggered Wage and Price Contracts," *Journal of Monetary Economics* vol. 46, no. 2, 281-314.

Huang, Kevin X. D., and Zheng Liu. (2002): "Staggered Price-setting, staggered wage-setting and business cycle persistence," *Journal of Monetary Economics*, vol. 49, 405-433.

Woodford, Michael (2003): "Optimal Interest Rate Smoothing," *Review of Economic Studies*, vol. 70, no. 4, 861-886.

Steinsson, Jón (2003): "Optimal Monetary Policy in an Economy with Inflation Persistence," *Journal of Monetary Economics*, vol. 50, no. 7.

Blanchard, Olivier J. and Jordi Galí (2005): "Real Wage Rigidities and the New Keynesian Model" mimeo.

Benigno, Pierpaolo, and Michael Woodford (2005): "Inflation Stabilization and Welfare: the Case of a Distorted Steady State" *Journal of the European Economic Association*, forthcoming.

Khan, Aubhik, Robert G. King and Alexander L. Wolman (2003): "Optimal Monetary Policy," *Review of Economic Studies*, 825-860.

Christiano, Lawrence J., Martin Eichenbaum, and Charles L. Evans (2001): "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*

Smets, Frank, and Raf Wouters (2003): "An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area," *Journal of the European Economic Association*, vol 1, no. 5, 1123-1175.

Monetary Policy in the Open Economy

Empirical issues. Two country models. Small Open Economy. Monetary Unions. Local Currency Pricing.

Benigno, Gianluca, and Benigno, Pierpaolo (2003): "Price Stability in Open Economies," *Review of Economic Studies*, vol. 70, no. 4, 743-764.

Galí, Jordi, and Tommaso Monacelli (2005): "Monetary Policy and Exchange Rate Volatility in a Small Open Economy," *Review of Economic Studies*, vol. 72, issue 3, 2005,

707-734.

Clarida, Richard, Jordi Galí, and Mark Gertler (2002): "A Simple Framework for International Monetary Policy Analysis," *Journal of Monetary Economics*, vol. 49, no. 5, 879-904.

Benigno, Pierpaolo (2004): "Optimal Monetary Policy in a Currency Area," *Journal of International Economics*, vol. 63, issue 2, 293-320.

Monetary and Fiscal Policy Interactions

Fiscal policy rules and equilibrium determination. Distortionary taxes and optimal policy. Non-Ricardian economies and the effects of government spending. Optimal monetary and fiscal policy in currency unions.

Leeper, Eric (1991): "Equilibria under Active and Passive Monetary Policies," *Journal of Monetary Economics* 27, 129-147.

Sims, Christopher A. (1994): "A Simple Model for the Determination of the Price Level and the Interaction of Monetary and Fiscal Policy," *Economic Theory*, vol. 4, 381-399.

Woodford, Michael (1996): "Control of the Public Debt: A Requirement for Price Stability," NBER WP#5684.

Davig, Troy and Eric Leeper (2005): "Fluctuating Macro Policies and the Fiscal Theory," mimeo.

Schmitt-Grohé, Stephanie, and Martin Uribe (2004): "Optimal Fiscal and Monetary Policy under Sticky Prices," *Journal of Economic Theory* 114, 198-230

Schmitt-Grohé, Stephanie, and Martin Uribe (2003): "Optimal Simple and Implementable Monetary and Fiscal Rules," NBER WP# 10253.

Blanchard, Olivier and Roberto Perotti (2002), "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, vol CXVII, issue 4, 1329-1368.

Fatás, Antonio and Ilian Mihov (2001), "The Effects of Fiscal Policy on Consumption and Employment: Theory and Evidence," INSEAD, mimeo.

Galí, Jordi, J. David López-Salido and Javier Vallés (2005): "Understanding the Effects of Government Spending on Consumption," mimeo.

Galí, Jordi, and Tommaso Monacelli (2005): "Optimal Monetary and Fiscal Policy in a Currency Union: A New Keynesian Perspective," mimeo.