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Office hours: by appointment (crojas@upf.edu)
Mon-Tu, 16:30-18:30
Spring 2019

Advanced Macroeconomics III (second half)

This part of the course will provide an overview of recent developments in monetary economics, with a special emphasis on models with nominal rigidities and their implications for monetary policy. The list of topics covered, together with a basic reading list is provided below. Evaluation will be based on a final exam. Review sessions will be conducted by Cristina Manea (cristina.manea@upf.edu).

The main textbook for the course is:

Galí, Jordi (2015): *Monetary Policy, Inflation and the Business Cycle. An Introduction to the New Keynesian Framework*, Second edition, Princeton University Press (Princeton, NJ).

An excellent, but more advanced textbook is:

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

A third textbook covering a wider range of topics on monetary economics is:

Walsh, Carl E. (2017): *Monetary Theory and Policy*, Fourth Edition, MIT Press (Cambridge, MA)

1. A Classical Monetary Model

Households. Firms. Equilibrium. Neutrality. Monetary policy rules and price level determination. Sources of non-neutrality. Optimal monetary policy.

Galí, Jordi (2015), chapter 2.

Walsh, Carl E. (2017), chapters 2-4

Woodford, Michael (2003), chapters 1-2.

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.

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.

2. The Basic New Keynesian Model

Motivation and evidence. The basic New Keynesian model. The New Keynesian Phillips curve. Evidence on inflation dynamics. The output gap and the natural rate of interest. The effects of monetary policy shocks. The effects of technology shocks.

Galí, Jordi (2015), chapters 1 and 3.
Walsh, Carl E. (2017), chapters 1 and 8.
Woodford, Michael (2003), chapter 4.

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).

Ramey, Valerie (2016): “Macroeconomic Shocks and their Propagation,” in J.B. Taylor and H. Uhlig (eds.) *Handbook of Macroeconomics* vol.2, 71-162 (Amsterdam: Elsevier)

Romer, Christina D. and David H. Romer (2014): “A New Measure of Monetary Shocks: Derivation and Implications,” *American Economic Review* 94 (4), 1055-1084.

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. (2006): “Price Changes in the Euro Area and the United States: Some Facts from Individual Consumer Price Data,” *Journal of Economic Perspectives*, vol. 20, no. 2, 171-192.

Klenow, Peter J. and Benjamin A. Malin (2011): “Microeconomic Evidence on Price Setting,” in B. Friedman and M. Woodford (eds.) *Handbook of Monetary Economics* vol. 3A, 231-284, Elsevier B.V.

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

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

Special issue of the *Journal of Monetary Economics* on “The Econometrics of the Pricing Equation,” September 2005.

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 (2006): “Are Technology Improvements Contractionary?,” *American Economic Review*, vol. 96, no. 5, 1418-1448.

3. 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.

Galí, Jordi (2015), chapter 4.
Walsh, Carl E. (2017), chapter 8.
Woodford, Michael (2003), 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.

Clarida, Richard, Jordi Galí, and Mark Gertler (2000): “Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory,” *Quarterly Journal of Economics*, vol. 105, 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

4. Extensions

Cost-push shocks. Nominal wage rigidities. Open economy. The zero lower bound. The forward guidance puzzle. Optimal inflation. Heterogeneity.

Galí, Jordi (2015), chapters 5-8

Walsh, Carl E. (2017), chapters 8, 9 and 11.

Woodford, Michael (2003), chapters 6-8.

Galí, Jordi (2018): "The State of New Keynesian Economics: A Partial Assessment," *Journal of Economic Perspectives* 32(3), 87-112.

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.

Giannoni, Marc and Michael Woodford (2017): “Optimal Target Criteria for Stabilization Policy,” *Journal of Economic Theory* 168(1): 55-106, March 2017.

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.

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.

- Christiano, Lawrence J., Martin Eichenbaum, and Charles L. Evans (2005): "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*, vol. 113, no. 1, 1-45
- 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.
- Smets, Frank, and Raf Wouters (2007): "Shocks and Frictions in US Business Cycles: a Bayesian DSGE Approach," *American Economic Review*, vol. 97 (3), 586-606.
- Benhabib, Jess, Stephanie Schmitt-Grohe, and Martin Uribe (2001): "The Perils of Taylor Rules," *Journal of Economic Theory* 96, 40-69.
- Eggertson, Gauti, and Michael Woodford (2003): "The Zero Bound on Interest Rates and Optimal Monetary Policy," *Brookings Papers on Economic Activity*, vol. 1, 139-211.
- Jung, Taehun, Yuki Teranishi, and Tsutomu Watanabe, (2005): "Optimal Monetary Policy at the Zero Interest Rate Bound," *Journal of Money, Credit and Banking* 37 (5), 813-835.
- Del Negro, Marco, Marc P. Giannoni, and Christina Patterson (2012) "The Forward Guidance Puzzle," FRB of New York Staff Report no. 574.
- McKay, Alisdair, Emi Nakamura and Jon Steinsson (2016): "The Power of Forward Guidance Revisited," *American Economic Review*, 106(10), 3133-3158
- Cochrane, John H. (2011): "Determinacy and Identification with Taylor Rules," *Journal of Political Economy* 119(3), 565-615.
- Cochrane, John H. (2017): "Michelson-Morley, Fisher and Occam: The Radical Implications of Stable Inflation at the Zero Lower Bound," mimeo
- García-Schmidt, Mariana and Michael Woodford (2018): "Are Low Interest Rates Deflationary: A Paradox of Perfect Foresight Analysis," mimeo.
- Schmitt-Grohé, Stephanie, and Martin Uribe (2011): "The Optimal Rate of Inflation" in B. Friedman and M. Woodford eds. *Handbook of Monetary Economics*, vol. 3B, North-Holland, 653-722.
- Coibion, Olivier Yuriy Gorodnichenko, and Johannes Wieland (2012): "The Optimal Rate of Inflation in New Keynesian Models: Should Central Banks Raise their Inflation Target in Light of the Zero Lower Bound," *Review of Economic Studies*, vol 20, 1-36.
- Dordal-i-Carreras, Marc, Olivier Coibion, Yuriy Gorodnichenko, and Johannes Wieland (2016): "Infrequent but Long-Lived Zero-Bound Episodes and the Optimal Rate of Inflation," *Annual Review of Economics*, forthcoming.
- Andrade, Philippe, Jordi Galí, Hervé Le Bihan, and Julien Matheron (2017): "The Optimal Inflation Target and the Natural Rate of Interest," mimeo.
- Nakamura, Emi, Jón Steinsson, Patrick Sun and Daniel Villar (2018): "The Elusive Costs of Inflation: Price Dispersion during the U.S. Great Inflation," *Quarterly Journal of Economics*, forthcoming.
- Auclert, Adrien (2017): "Monetary Policy and the Redistribution Channel," NBER Working Paper no. 23451.
- Kaplan, Greg, Benjamin Moll, and Giovanni L. Violante (2018): "Monetary Policy according to HANK," *American Economic Review* 108(3), 697-743.

Ravn, Morten and Vincent Stark (2017): "Macroeconomic Fluctuations with HANK & SAM: An Analytical Approach," mimeo.

Debortoli, Davide and Jordi Galí (2017): "Monetary Policy with Heterogeneous Agents: Insights from TANK Models," mimeo