

City University of New York
Ph.D. Program in Economics
Fall 2019

Economics 81100 Monetary theory and policy
CRN 60953
Tuesdays 2:00-4:00
Office hours: Tuesday 4:00-5:00., or whenever you can find me
(email is a good way). Also other times by appointment.

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Comment: some of these topics below have been introduced in Macro I up through fall semester 2017. Where the monetary topics were introduced in Macro I they appear here at an advanced level.

The basic textbook for this class will be Walsh, C. E. (2017), *Monetary Theory and Policy, 4rd Edition*, the MIT Press. I also will be using some parts of Gali, J. (2015), *Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework*, Princeton Univ. Press. There will be class projects, which will include problems as well as derivations of expressions in the text. There will be a final examination which probably should not require much special preparation for students who have followed the class carefully up to the date of the examination. Finally, there is a semester term paper which will involve simulating a DSGE model. Details follow.

The Graduate Center no longer provides free, take-home copies of Mathematica. However, Maple 18 can be obtained free from the CUNY Portal. MATLAB is available from the Graduate Center, and Dynare is free-download. You will need to become at least moderately proficient in the use of one or the other in order to complete the projects. It is important to get this started early in order to avoid delays in completing the paper.

DSGE (or DGE) Projects

In classes September 10 and/or September 24 the preliminary instructions in Dynare/MATLAB will be issued.

The objective of the projects is to learn about the construction and interpretation of DSGE models. The assignment is to choose a paper from the literature, (a) analyze the parameterization/calibration used in the paper; (b) simulate the model; (c) analyze the sensitivity of the model to its calibrated values.

You can select paper you like, subject to the instructor's approval. If you are advanced, and with the instructor's approval, you do some original work. Some dates/deadlines:

Declaration of topic deadline – September 17
 Short presentations (10 minutes) of topics – October 15
 Class presentation of paper (30 minutes) – December 3, 10
 Deadline for submission of final paper – December 13

Here are some ideas of papers to look at:

Clarida, Richard, Jordi Gali, and Mark Gertler. (2000) “Monetary Policy Rules and Macroeconomic Stability,” Quarterly Journal of Economics 115(1), pp. 147-180.

Iacoviello, Matteo and Minetti, Raoul (2008) "The credit channel of monetary policy: Evidence from the housing market," Journal of Macroeconomics, Elsevier, vol. 30(1), pages 69-96, March.

Gilchrist, Simon, Alberto Oriz, and Egon Zakrajsek (2009) Credit Risk and the Macroeconomy: Evidence from an Estimated DSGE Model. Paper presented at the Financial Markets and Monetary Policy Conference, sponsored by the Federal Reserve Board and the Journal of Money, Credit, and Banking, June 4-5.

Gerali, Andrea, Stefano Neri, Luca Sessa, and Federico Signoretti (2009) Credit and Banking in a DSGE Model of the Euro Area (493 KB). Paper presented at the Financial Markets and Monetary Policy Conference, sponsored by the Federal Reserve Board and the Journal of Money, Credit, and Banking, June 4-5.

Edge, Rochelle M. Michael T. Kiley, and Jean-Philippe Laforte (2008) Natural rate measures in an estimated DSGE model of the U.S. economy. Journal of Economic Dynamics & Control 32:2512–2535.

Some papers I came across recently:

Stefan Laséen & Lars E.O. Svensson, 2011. "Anticipated Alternative policy Rate Paths in Policy Simulations," International Journal of Central Banking,” International Journal of Central Banking, vol. 7(3), pages 1-35, September.

Benes, Jaromir, Michael Kumhof, and Douglas Lax. “Financial Crises in DSGE Models: A Prototype Model,” IMF Working Paper Research Department, April 2014,

Frank Schorfheide. “Estimation and Evaluation of DSGE Models: Progress and Challenges, Working Paper No. 11-7, January 31, 2011,

Villa, Stefania and Jing Yang, “Financial intermediaries in an estimated DSGE model for the United Kingdom,” Bank of England Working Paper No. 431, July 2011.

Hendrickson, Joshua R. 2011. "Monetary Transmission in the New Keynesian Framework: Is the Interest Rate Enough?" Working paper.

Papers on "targeting":

Dittmar, R. and W. Gavin (2000), "What Do new Phillips Curve Imply for Price Level Targeting?" *Federal Reserve Bank of St. Louis Review*, January/February Issue.

Dittmar, R., Gavin, W., and F. Kydland. 1999. "The Inflation-Output Variability Trade-off and Price-level Targets." *Federal Reserve Bank of St. Louis Review*, January/February Issue.

Svensson, L., (1999). "Price Level Targeting vs. Inflation Targeting: A Free Lunch?" *Journal of Money, Credit and Banking*, pp. 277-295.

Vestin, D., (2006). "Price-level Targeting versus Inflation Targeting", *Journal of Monetary Economics*, Elsevier, vol. 53(7), 1361-1376, October.

Honkapohja, Seppo and Kaushik Mitra. 2015. "Comparing Inflation and Price-Level Targeting: The Role of Forward Guidance and Transparency." *The Manchester School*, 83 (S2), pp. 27-59.

Roisland, Oistein. 2006. "Inflation Inertia and the Optimal Hybrid Inflation / Price Level Targeting." *Journal of Money, Credit, and Banking*, 38 (8), 2247-2251.

Walsh, C., (1995). "Optimal Contracts for Central Bankers." *American Economic Review* 85 (March), 150-167

Walsh, C. 2003. "Speed Limit Policies: The Output Gap and Optimal Policy." *American Economic Review*, 93(1), (March), 265-278.

Learning goals and outcomes

This is a field course in the monetary side of macroeconomics. A field exam will be offered in this field in August 2020 to satisfy in part the requirements for the Second Examination.

- Students will learn a major part of the modern literature on monetary theory and policy at the Ph.D. level.
- The "standard" topics include basic instruments and rules, money in utility and variants, money in the New Keynesian model, money and public finance, and monetary transmission.
- Special emphasis will be put on inflation and price level targeting in the context of the NKM model.
- Students will initiate, complete, and present results of research projects involving DSGE models.

Assessment

Assessment will come in the form of a final examination, a DSGE project, assorted homework and assignments. The weights for the final grade will consist of (1) final examination – 50%; (2) DSGE project – 40%; (3) other homework and assignments – 10%.

Course Outline and Reading List

(Class dates are estimates.)

I. Monetary policy: indicators, instruments, target issues (Aug 27, Sep 3)

References:

Text pages: *Walsh*, Chapter 11, especially pp. 563-578; 581-590; 595-603.

FOMC Minutes, September 2007 and December 2013

FOMC Minutes, September 2007 and December 2013

Poole (1980)

Friedman (1990) *should be read over quickly as a general (and now historical) survey.*

Bernanke, Ben, and Illian Mihov (1998): *the econometrics are interesting, but the main purpose here is the specification of the reserve markets, also discussed in Walsh, 11.4 (pp. 563-578) and 11.5 (595-603).*

II. Updates on the demand for money, introduction to Dynare/MATLAB (Sep 10, Sep 17)

Note: declaration of paper topic by September 17.

We will review the “money in utility” model as expounded by Walsh.

References:

Text pages: *Walsh*, Chapter 2 (pp. 33-61), Chapter 3 (pp. 91-106).

Sidrauski (1967)

Brock (1974)

We will solve and discuss Problems 1 and 2 in Walsh pp. 87-88.

We will introduce Dynare/MATLAB for future use.

III. Time consistency in monetary and fiscal policy (Sep 24)

Note: October 15 start short (15 minutes) project presentations.

- a. Quick review of Barro and Gordon (1983)
References: Walsh, Chapter 7, pp. 271-283
 - b. Solutions to inflation bias
References: Walsh 7, pp. 283-323
Backus and Driffill (1985)
- IV. New Keynesian Model and money in NKM (Oct 15, Oct 22, Oct 29, Nov 5)
- Texts: Walsh Chapter 8, Gali Chapter 5.
The main emphasis in this section will be on simulating it and the following particular issues:
- a. Different levels of inflation commitment.

References:
Inter alia, an important (but only partial) reference will be Walsh (chapter 8), pp. 352-366.
Walsh (2003) – “*speed limit*” article
Clarida, Gali, Gertler (1999)
Marest and Thurston (2018)
(See also targeting papers listed in the introduction.)
 - b. Determinacy conditions
 - c. Some problems and a recent challenge to the NKM model. *Cochrane (2011) has written an important article challenging usefulness of the workhorse” NKM on two grounds: the Taylor rule cannot be statistically identified, and besides, the model does not actually yield unique solutions in theory. We will take time to analyze this article.*
References:
Cochrane(2011)
 - d. Comments on zero bound and trend inflation.
References:
Walsh, Chapter 4, pp. pp. 256-257; p. 336; p. 343.
Woodford (2012)
Kiley (2004)
Ascari (2007)
- V. Money and public finance (Nov 12)
- a. Budget accounting, balance, and some “unpleasant monetarist arithmetic”
References:
Walsh, Chapter 4, pp. 135-162
Sargent and Wallace (1981)
 - b. The fiscal theory of the price level
References:
Walsh,Chapter 4, pp. 162- 170

Leeper (1991)

- c. Optimal taxation and seigniorage
References:
Walsh, Chapter 4, pp. 170-174, p. 191.
Phelps (1973)
- d. Fiscal multipliers in DSGE
References:
Woodford (2011)

VI. Monetary Transmission (Nov 19, Nov 26)

Note: Dec 3 start project presentations. (30 minutes each).

- a. Credit Rationing
References:
Walsh, 10.5, pp. 477-492.
Jaffee, Dwight and Joseph Stiglitz. (1990)
Stiglitz, J., and A. Weiss. (1981)
- b. Financial Accelerators, etc.
References:
Walsh, Chapter 10.6, pp. 502-508
Boivin, Kiley, Mishkin (2010)
[Bernanke](#), Ben; [Mark Gertler](#); [Simon Gilchrist](#). (1996)
Bernanke, B., M. Gertler, and S. Gilchrist. (1999)
[Bernanke](#), Ben S.; [Mark Gertler](#) (2001)
Christiano, L., Eichenbaum, M. and Evans, C. (1999)

VII. Complete presentations and left-over topics (Dec 3, Dec 10)

VIII. Final examination December 17.

Note: deadline for paper submission is Dec 23.

REFERENCES

- Ascari, G. and Ropele, T., 2007. Optimal Monetary Policy under Low Trend Inflation. Journal of Monetary Economics, 54, pp. 2568-2583.
- Backus, D., and J. Driffill (1985) "Inflation and reputation," American Economic Review, 75, pp. 530-538.
- Bailey, Martin (1956) "The Welfare Cost of Inflationary Finance," Journal of Political Economy, April, p.
- Bali, T. and T. Thurston, "On the Efficiency of Monetary Policy Rules with Flexible Prices and Rational Expectations," 2002 in Journal of Economics and Business.
- Bali, T., and T. Thurston (2000) "Empirical estimates of inflation tax Laffer surfaces: a 30-country study," Journal of Development Economics, vol. 63, pp. 529-546.
- Barro, R.J. and D.B. Gordon. (1983) "Rules, discretion, and reputation in a model of monetary policy," Journal of Monetary Economics, 12; pp. 101-121,
- Baumol, W.J., "The transactions demand for cash: an inventory theoretic approach," Quarterly Journal of Economics, No. 66, 1952, pp. 545-556.
- Bernanke, B., M. Gertler, and S. Gilchrist. 1999. "The Financial Accelerator in a Quantitative Business Cycle Framework." *Handbook of Macroeconomics*. Amsterdam: North Holland.
- Bernanke, Ben S.; Mark Gertler. "Should Central Banks Respond to Movements in Asset Prices?," *The American Economic Review*, Vol. 91, No. 2, Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association (May, 2001), pp. 253-257
- Bernanke, Ben, and Illian Mihov. "Measuring Monetary Policy," The Quarterly Journal of Economics, August 1998, pp. 869-902. *The econometrics are interesting, but the main purpose here is the specification of the reserve markets.*
- Bernanke, Ben, Boivin, Jean, and Piotr Eliaszc. "Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach, draft revised December 2003.
- Bernanke, Ben; Mark Gertler; Simon Gilchrist. "The Financial Accelerator and the Flight to Quality," *The Review of Economics and Statistics* , Vol. 78, No. 1 (Feb., 1996), pp. 1-15.
- Bilbie, Florin O., 2014. Delegating optimal monetary policy inertia. J. Econ. Dyn. Control 48, 63–78.
- Blanchard, O., Kahn, C.M., 1980. The solution of linear difference models under rational expectations. Econometrica 48 (5), 1305–1311.
- Board Working Paper 1998-27.
- Boivin, Jean, Kiley, Michael T., and Federic Mishkin. (2010) "How Has the Monetary Transmission Mechanism Evolved Over Time?" Staff working paper, finance and Economics Discussion Series, Federal Reserve Board of Governors.
- Brock, W.A. (1974) "Money and Growth: the Case of Long-run Perfect Foresight." International Economic Review 15(3), pp. 750-777.
- Bullard, J., Mitra, K., 2002. Learning about monetary policy rules. J. Monetary
- Bullard, James and Kaushik Mitra. (2002) "Learning about Monetary Policy Rules," Working Paper 2000-0011E, Federal Reserve Bank of St. Louis.

Cagan, P. (1956) “The monetary dynamics of hyperinflation,” reprinted in Milton Friedman, ed., (1969) Studies in the Quantity Theory of Money, University of Chicago Press.

Campillo, Marta, and Jeffrey Miron (1997) “Why does inflation differ across countries?,” in Romer, Christina and David Romer, eds., (1997) Reducing Inflation: Motivation and Strategy (New York: University of Chicago Press).

Canzoneri, M., Henderson, D., and Rogoff, K. 1983. The information content of interest rates and the optimal monetary policy. *Quarterly Journal of Economics* 98: 545-566.

Christiano, L., Eichenbaum, M. and Evans, C. (1999) “Monetary Policy Shocks: What Have We Learned and to What End?” in Taylor and Woodford (eds.), *Handbook of Macroeconomics*. New York: Elsevier Science.

Clarida, Richard, Jordi Gali, and Mark Gertler. (2000) “Monetary Policy Rules and Macroeconomic Stability,” *Quarterly Journal of Economics* 115(1), pp. 147-180.

Clarida, Richard, Jordi Gali, and Mark Gertler. “The Science of Monetary Policy: A New Keynesian Perspective,” *Journal of Economic Literature*, Vol. 37, No. 4 (Dec., 1999), pp. 1661-1707.

Cochrane, John H. (2011) “Determinacy and Identification with Taylor Rules,” *Journal of Political Economy*, vol. 119, pp. 565-615.

Cukierman, A. (1992) Central Bank Strategy, Credibility and Independence (Cambridge, Mass.: MIT Press), pp. 53-56.

Denis, R., 2009. “Timeless Perspective Policymaking: When is Discretion Superior?” NBER Working Paper Series 38, National Centre for Economic Research.

Edge, Rochelle M. Michael T. Kiley, and Jean-Philippe Laforte (2008) Natural rate measures in an estimated DSGE model of the U.S. economy. *Journal of Economic Dynamics & Control* 32:2512–2535.

Fischer, Stanley. (1990) “Rules Versus Discretion in Monetary Policy,” chapter 21 in Friedman, Benjamin. M. and Frank H. Hahn, Handbook of Monetary Economics, Vol. II, (New York: North Holland), 1990.

Friedman, Benjamin. (1990) “Targets and instruments of monetary policy,” chapter 22 in Friedman, Benjamin. M. and Frank H. Hahn, Handbook of Monetary Economics, Vol. I, (New York: North Holland).

Friedman, Milton. (1968) “The role of monetary policy,” *American Economic Review*, 57, pp. 1-17.

Fuhrer, J.C., and G. R. Moore (1995), “Monetary policy trade-offs and the correlation between nominal interest rates and real output,” *American Economic Review*, 85, no.1, March, pp. 219-239.

Gali, J., 2015. Monetary Policy, Inflation, and the Business Cycle: An Introduction to the New Keynesian Framework. Princeton University Press.

Gaspar, V., Smets, F., Vestin, D., 2007. “Is Time Ripe for Price Level Path Stability?” European Central Bank, Working Paper Series, No 818, October.

Gerali, Andrea, Stefano Neri, Luca Sessa, and Federico Signoretti (2009) Credit and Banking in a DSGE Model of the Euro Area (493 KB). Paper presented at the Financial Markets and Monetary Policy Conference, sponsored by the Federal Reserve Board and the Journal of Money, Credit, and Banking, June 4-5.

- Giannoni, M.P., 2012. "Optimal Target Criteria for Stabilization Policy." Federal Reserve Bank of New York, Staff report No 535.
- Giannoni, M.P., 2014. Optimal interest rate rules and inflation stabilization versus price-level stabilization. *J. Econ. Dyn. Control* 41 (C), 110–129 Elsevier.
- Giannoni, M.P., Woodford, M., 2003. "Optimal Inflation Targeting Rules." NBER, Working Paper 9939.
- Gilchrist, Simon, Alberto Oriz, and Egon Zakrajsek (2009) Credit Risk and the Macroeconomy: Evidence from an Estimated DSGE Model. Paper presented at the Financial Markets and Monetary Policy Conference, sponsored by the Federal Reserve Board and the Journal of Money, Credit, and Banking, June 4-5.
- Goldfeld, Stephen M. and Daniel E. Sichel. (1990) "The demand for money," chapter 8 in Friedman, Benjamin. M. and Frank H. Hahn, Handbook of Monetary Economics, Vol. I, (New York: North Holland), 1990.
- Hwang, J. (1985) "Testing the adjustment process and linear homogeneity in the stock adjustment model of money demand," Review of Economics and Statistics, LXVII, pp. 689-692.
- Iacoviello, Matteo and Minetti, Raoul (2008) "The credit channel of monetary policy: Evidence from the housing market," *Journal of Macroeconomics*, Elsevier, vol. 30(1), pages 69-96, March.
- Jaffee, Dwight and Joseph Stiglitz. (1990) "Credit Rationing," chapter 16 in Friedman, Benjamin. M. and Frank H. Hahn, Handbook of Monetary Economics, Vol. II, (New York: North Holland), 1990.
- Jensen, C., McCallum, B., 2002. The non-optimality of proposed monetary policy rules under timeless perspective commitment. *Econ. Lett.* 77, 163–168 Elsevier October.
- Jensen, H., 2002. Targeting nominal income growth or inflation? *Am. Econ. Rev.* 92 (4), 928–956.
- Judd, J.P. and J.L. Scadding (1982) "The search for a stable money demand function: survey of the post-1973 literature," Journal of Economic Literature, 20, pp. 993-1023.
- Kiley, M., 1998. "Monetary Policy Under Neoclassical and New Keynesian Phillips Curves, with an Application to Price Level and Inflation Targeting." Federal Reserve Working Paper, finance and Economics Discussion Series, Federal Reserve Board, Washington, D.C.
- Kiley, Michael T. "Is Moderate-to-High Inflation Unstable?" (2004) Staff Working Paper, finance and Economics Discussion Series, Federal Reserve Board, Washington, D.C.
- Kydland, F.E. and E.S. Prescott. (1977) "Rules rather than discretion: The inconsistency of optimal plans," Journal of Political Economy, 85: pp. 473-491.
- Leeper, E.M. "Equilibrium under 'Active' and 'Passive' Monetary and Fiscal Policies," Journal of Monetary Economics, 27(1) pp. 129-147.
- Lucas, R.E. "Some international evidence on the output-inflation tradeoff," American Economic Review, June 1973.
- Marest, Luc & Thurston, Thom, 2018. "Measuring the value of central bank commitment in the benchmark New Keynesian model," Journal of Macroeconomics, Elsevier, vol. 58(C), December, pages 249-265.
- McCallum, B.T. (1983) "On non-uniqueness in rational expectations models: an attempt at perspective," Journal of Monetary Economics, 11; 139-168.

McCallum, Bennett T. (1990) "Inflation: Theory and Evidence," chapter 18 in Friedman, Benjamin. M. and Frank H. Hahn, Handbook of Monetary Economics, Vol. II, (New York: North Holland).

Miller, M.H. and D. Orr, "A model of the demand for money by firms," Quarterly Journal of Economics, November 1966.

Phelps, Edmund s. (1973) "Inflation in the theory of public finance," Swedish Journal of Economics 75, 67-82.

Poole, William. (1980) "Optimal choice of monetary instruments in a simple stochastic Macro model," Quarterly Journal of Economics, 84, pp. 197-216.

Romer, David (1993) "Openness and Inflation," The Quarterly Journal of Economics, vol. 108, No. 4., pp. 869-903.

Sargent, T., and N. Wallace, (1981) "Some Unpleasant Monetarist Arithmetic," Federal Reserve Bank of Minneapolis Quarterly Review 5(3) pp. 1-17.

Sidrauski, M. (1967) "Rational choice and patterns of growth in a monetary economy," American Economic Review Papers and Proc., 57: 534-544.

Stiglitz, J., and A. Weiss. (1981) "Credit rationing in markets with imperfect information," American Economic Review, 71, pp. 393-410.

Svensson, L., 1999. Price level targeting vs. inflation targeting: a free lunch? J. Money Credit Banking 277–295.

The American Economic Review, Vol. 91, No. 2, Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association (May, 2001), pp. 232-237.

Tobin, James, "Liquidity preferences as behavior towards risk," Review of Economic Studies, February 1958, pp. 65-86.

Vestin, D., 2006. Price-level targeting versus inflation targeting. J. Monet. Econ. 53 (7), 1361–1376 ElsevierOctober.

Walsh, C., 2003. Speed limit policies: the output gap and optimal policy. Am. Econ. Rev. 93 (1), 265–278 (March).

Walsh, C., 2010. Monetary Theory and Policy, 3rd ed. The MIT Press.

Walsh, C., 2011. The future of inflation targeting. Econ. Rec. 87 (Special issue), 23–26.

Woodford, M., 2001. The Taylor rule and optimal monetary policy. Am. Econ. Rev. 91 (2), 232–237.

Woodford, M., 2003. Interest and Prices: Foundations of a Theory of Monetary Policy. Princeton University Press, Princeton, N.J.

Woodford, Michael. (2011) "Simple Analytics of the Government Expenditure Multiplier," American Economic Journal: Macroeconomics 3 (January 2011): 1-35.