

Monetary Theory and Policy

Econ 01:220:412—Fall 2017

Instructor: Christine Cumming

Email: ccumming@econ.rutgers.edu

Office: New Jersey Hall 201A

Class: Tuesdays and Fridays 9:50 to 11:10 (except as noted) AB 2150

Office Hours: Tuesday 11:30 to 12:30; Friday 11:30 to 12:30; and by appointment.

Prerequisites: 01:220:321 and 01:220:322 with minimum grades of C

This course is an Upper Level Elective

Monetary policy in the major world economies is entering a transition from providing accommodation to achieving normalization. The challenges in making the transition reflect not only monetary policy considerations, but questions about the fundamentals of the economy and the post-crisis views of the public on the economy's performance and fairness.

Monetary Theory and Policy covers three principal areas. Part 1 of the course covers the well-established frameworks of monetary theory in use prior to the 2007-09 financial crisis. We will cover the definition and role of money in the macroeconomy, the formulation and execution of monetary policy, the transmission of that policy in the economy, the role of policy rules and monetary targeting, and the impact of monetary policy on economic growth and inflation. In those well-established frameworks, interest rates are expected (often as a matter of theory) to be well above zero.

Part 2 of the course covers the adaptation and extension of existing theory to formulate and execute monetary policy when interest rates approach the zero lower bound. Monetary policy tools, notably the lender of last resort, proved critical in stabilizing the financial system in freefall. Monetary policy formally began in the financial crisis to use asset purchases and forward guidance as its principal tools. Creating monetary policy with more seamless transitions from normal to distress conditions is a priority for the post-crisis "new normal." Alternative conceptual frameworks, most proposed before the financial crisis, and alternative operational frameworks for monetary policy, most in use outside the United States, are receiving attention.

Part 3 considers a set of current monetary policy issues. Foremost among them is an exit strategy from policies shaped by proximity to the zero lower bound, but the issues include use of negative interest rates, spillovers of accommodative monetary policy to other countries, and the distribution of costs and benefits of unconventional monetary policy, and the implications of those policies for long-run central bank independence. The goal is to use the monetary

frameworks studied to analyze these issues and weigh the opportunities and challenges for monetary policy. Students are welcome to raise topics the class could pursue.

Objectives: Students will:

- Have a good working knowledge of the appropriate role of monetary policy in economies of different structures and be able to determine the likely impacts of monetary actions and the choice of monetary stance.
- Be able to make a preliminary analysis of novel monetary actions, the effects of novel economic circumstances, or a major shift in monetary stance.
- Understand how to draft a policy memo appropriate for use by principals in a monetary authority.

To develop this understanding, students will exercise what they learn through:

- a. Quizzes and problem assignments
- b. Class discussion of key issues. Class participation may take the form of presenting a portion of readings; presenting solutions to assigned problems; and analysis of current issues for discussion by the class.
- c. One in-class midterm at the conclusion of Part 1; one take-home exam at the conclusion of Part 2.
- d. One paper of 7 to 10 pages discussing major aspects of an issue of monetary policy of interest to the student. The issue may be one among those that we discuss in class. The paper will be due on the final day of class.

Text: Andrew B. Abel, Ben S. Bernanke, and Dean Croushore, *Macroeconomics*, Ninth Edition. Pearson: New Jersey, 2017.

Topics and Readings:

This plan is subject to revision based on progress made in the first weeks of the class and on topics suggested by the students. In addition, page assignments of main focus will be provided on lengthier readings.

PART 1

September 5

Monetary Policy: Headed Toward Normalization or Realizing Its Limits?

A Closed Economy One-Period Macroeconomic Model

Reading: Ben S. Bernanke, "When Growth is Not Enough." Remarks at the European Central Bank Forum on Central Banking at Sintra, June 26, 2017. https://www.brookings.edu/wp-content/uploads/2017/06/es_20170626_whengrowthisnotenough.pdf

Joel Mokyr, “Is Technological Progress a Thing of the Past?”, PowerPoint presentation of the Presidential Address at the International Atlantic Economic Society Meeting, October 15, 2016. <http://www.iaes.org/wp-content/uploads/2016/10/mokyr.pdf>

Chapter 3 and 4 of Abel, Bernanke and Croushore, *Macroeconomics*

These chapters provide microfoundations for aggregate supply and aggregate demand in the models we will use in this course.

Optional: Chapters 1 and 2, “Introduction” and the national income accounts are worth skimming.

September 8

Saving and Investment in an Open Economy

Assignment of Problems Due September 15

Reading: Chapter 5 of Abel, Bernanke and Croushore, *Macroeconomics*.

The impact of foreign income, foreign prices and the exchange rate in the material discussed.

September 12

Fundamentals of Long-Run Economic Growth

Reading: Chapters 6 and 8 of Abel, Bernanke and Croushore, *Macroeconomics*.

A perspective on drivers and limitors of long-term economic growth.

Optional: Giuseppe Ferraro, Marco Gross and Stefano Neri, *On secular stagnation and low interest rates; demography matters*, ECB Working Paper No.2088, July 2017.

<https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2088.en.pdf?a6b4c0ab4102556cb4a52dcd26ac30aa>

September 15

The Asset Market, Money, and Prices

Problem Assignment Due

Reading: Chapter 7 of Abel, Bernanke and Croushore, *Macroeconomics*. Chapter 14 of Abel, Bernanke and Croushore, *Macroeconomics*, pp. 531-557.

The definition and measures of money, the relationship with payments, money demand and monetary neutrality, conditions for non-neutrality of money, inflation, monetary targeting. The impact of Fintech on concepts

of the money supply. Background on the role of the Federal Reserve as a monetary authority.

September 19

More on Real Interest Rates: Class Discussion

Review of Problem Assignment

Readings: Michael T. Kiley, "What Can Data Tell Us About the Equilibrium Real Interest Rate?", *Finance and Economics Discussion Papers*, Federal Reserve Board, August 2015.

<http://www.federalreserve.gov/econresdata/feds/2015/files/2015077pap.pdf>

Kevin Lansing, "Projecting the Long-Run Natural Rate of Interest", *FRBSF Economic Letter*, August 29, 2016.

http://www.frbsf.org/economic-research/publications/economic-letter/2016/august/projecting-long-run-natural-rate-of-interest/?utm_source=frbsf-home-economic-letter-title&utm_medium=frbsf&utm_campaign=economic-letter

Focus is on three key issues: Are there different definitions for the real interest rate? What would we expect to see in the estimated level of the real interest rate over time based on the literature? What conclusions do Kiley and Lansing reach?

September 22

Keynesian Economics: The IS-LM/AD-AS Model

Quiz

Monetary neutrality and non-neutrality, mechanisms for reaching general equilibrium, and frameworks in which monetary policy has more impact.

Readings: Chapter 9 of Abel, Bernanke, and Croushore, *Macroeconomics*.

Readings for this class and the next: Chapter 10, Abel, Bernanke, and Croushore, *Macroeconomics*, pp. 366-76 (productivity shocks); pp. 376-380 (fiscal shocks); pp. 384-387 (monetary policy); and pp. 387-392 (misperceptions); and pp. 392-394 (rational expectations). Chapter 11, Abel Bernanke and Croushore, *Macroeconomics*, pp. 407-420 (wage rigidity and price stickiness).

September 25

The Transmission Channels of Monetary Policy

Assignment of Problems Due September 29

Reading: Chapter 11, Abel, Bernanke and Croushore, *Macroeconomics*, pp. 420-434 (monetary and fiscal policy in the Keynesian model).

Kenneth Kuttner and Patricia Mosser, "The Monetary Policy Transmission Mechanism in the United States: Some Answers and Further Questions", BIS Papers #12, *Market Functioning and Central Bank Policy*, 2002, pp. 433 to 443. <http://www.bis.org/publ/bppdf/bispap12v.pdf>

September 29

Monetary Policy Rules

Assigned Problems Due

Reading: John B. Taylor and John C. Williams, "Simple and Robust Rules of Monetary Policy", Federal Reserve Bank of San Francisco Working Paper, 2010-10, April 2010. <http://www.frbsf.org/economic-research/files/wp10-10bk.pdf>

Chapter 14, Abel, Bernanke and Croushore, *Macroeconomics*, pp. 564-573.

October 3

Summing Up Part 1: Monetary Frameworks and Inflation Targeting

Review of assigned problems

Reading: Frederic S. Mishkin and Adam Posen, "Inflation Targeting: Lessons from Four Countries," Federal Reserve Bank of New York *Economic Policy Review*, 3:3, August 1997.

https://www.newyorkfed.org/medialibrary/media/research/epr/1997/EP_Rvol3no3.pdf

Thomas J. Sargent, "The End of Four Big Inflations", in *Inflation: Causes and Effects*, ed. Robert E. Hall. National Bureau of Economic Research and University of Chicago Press, 1982.

<http://www.nber.org/chapters/c11452.pdf>

October 6

In-class Mid-term Examination on Part 1

PART 2

October 10

Challenges of Monetary Policy Near the Zero Lower Bound

Why did monetary policy need to reach the vicinity of the zero lower bound?

Reading: Lawrence J. Christiano, Martin S. Eichenbaum and Mathias Trabandt, "Understanding the Great Recession", *International Finance Discussion Papers*, no. 1107r, August 2014, revised June 2015.
<http://www.federalreserve.gov/econresdata/ifdp/2014/files/ifdp1107.pdf>

Chapter 14, Abel, Bernanke and Croushore, *Macroeconomics*, pp. 558-563.

October 13

Financial Frictions and the Great Recession

Return of Mid-Terms

Discussion of the Role of Financial Conditions

Readings: Jan Hatzius, Peter Hooper, Frederic Mishkin, Kim Schoenholtz, and Mark W. Watson, "Financial Conditions Indexes: A Fresh Look after the Financial Crisis", NBER Working Paper No. 16150, July 2010.

<http://www.nber.org/papers/w16150>

Marco del Negro, Marc Giannoni, and Micah Smith, "The Macro Effects of the Recent Swing in Financial Conditions", *Liberty Street Blog*, May 25, 2016.

<http://libertystreeteconomics.newyorkfed.org/2016/05/the-macro-effects-of-the-recent-swing-in-financial-conditions.html#.V812b4-cHD4>

Optional: William C. Dudley, "Comments on 'Financial Conditions Indexes: A Fresh Look After the Financial Crisis'", February 26, 2010.
<https://www.newyorkfed.org/newsevents/speeches/2010/dud100226>

October 17

First, Stabilization. The Role of the Lender of Last Resort.

Readings: Stanley Fischer, "The Lender of Last Resort in the United States", Speech, February 10, 2016.

<https://www.federalreserve.gov/newsevents/speech/fischer20160210a.htm>

Dietrich Domanski, Richhild Moessner and William Nelson, "Central Banks as lenders of last resort: experiences during the 2007-10 financial crisis and lessons for the future", *Finance and Economics Discussion Series # 2014-110*, May 2014.

<http://www.federalreserve.gov/econresdata/feds/2014/files/2014110pap.pdf>

Optional: Tobias Adrian, “The Fed’s Emergency Liquidity Facilities During the Financial Crisis: The CPFF.” *Liberty Street Blog*, August 2012.

<http://libertystreeteconomics.newyorkfed.org/2012/08/the-feds-emergency-liquidity-facilities-during-the-financial-crisis-the-cpff.html#.V8jVQY-cHD4>

October 20

“Unconventional” Monetary Policy to Address the Zero Lower Bound

Final Paper Topic Submission—Guidelines—Proposal Due November 10

Quiz

Readings: Gauti Eggertson and Michael Woodford, “The Zero Bound on Interest Rates and Optimal Monetary Policy”, *Brookings Papers on Economic Activity*, 1:2003. https://www.brookings.edu/wp-content/uploads/2003/01/2003a_bpea_eggertsson.pdf

William B. English, J. Lopez-Salido, and Robert Tetlow, “The Federal Reserve’s Framework for Monetary Policy—Recent Changes and New Questions”, Federal Reserve Board *Finance and Economic Discussion Series #76*, November 2013.

<http://www.federalreserve.gov/pubs/feds/2013/201376/201376pap.pdf>

Optional: Philippe Andrade, Johannes Breckenfelder, Fiorella De Fiore, Peter Karadi, Oreste Tristani, “The ECB’s asset purchase programme: an early assessment”, *ECB Working Paper Series* no. 1956, September 2016. <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1956.en.pdf?a9dd96683fe006c3416571d23543372d>

October 24

Instruments of Monetary Policy Near the Zero Lower Bound: Asset Sales, Forward Guidance, and Other Instruments of Policy

Reading: John B. Taylor, “A Monetary Policy for the Future”, in *Progress and Confusion: The State of Macroeconomic Policy*, Olivier Blanchard, Raghuram Rajan, Kenneth Rogoff, and Lawrence H. Summers (eds), MIT Press, 2016.

http://web.stanford.edu/~johntayl/2016_pdfs/A_Monetary_Policy_for_the_Future-ProgressandConfusion-2016

A critique of unconventional monetary policy.

Günter Coenen, Michael Ehrmann, Gaetano Gaballo, Peter Hoffmann, Anton Nakov, Stefano Nardelli, Eric Persson, and Georg Strasser.

“Communication of monetary policy in unconventional times.” *ECB Working Paper Series* no. 2080, June 2017.

<https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2080.en.pdf?673b567c17489d259ad4b0331b4c5d79>

A review of the efficacy of forward guidance as a policy tool.

October 27

How Independent is Monetary Policy from Fiscal Policy?

Quiz

Readings: Neil Wallace and Thomas Sargent, “Some Unpleasant Monetarist Arithmetic”, *Federal Reserve Bank of Minneapolis Quarterly Review* 531, Fall 1981. <https://minneapolisfed.org/research/quarterly-review/some-unpleasant-monetarist-arithmetic>

This article illustrates the lack of independence of monetary policy from fiscal policy under certain economic conditions. The Wallace-Sargent model builds on the growth models of Chapters 6 and 8 of *ABC Macroeconomics*.

Optional: Chapter 15, Abel, Bernanke and Croushore, *Macroeconomics*.

October 31

International Transmission of Monetary Policy; Exchange Rate Policy

Take-Home Mid-Term Exam Due November 17

Chapter 13 of Abel, Bernanke and Croushore, *Macroeconomics*.

November 3

What Happens if the Next Crisis Arrives Early?

Reading: David Reifschneider, “Gauging the Ability of the FOMC to Respond to Future Recessions”, Federal Reserve Board *Finance and Economic Discussion Series* # 2016-066, August 2016.

<http://www.federalreserve.gov/econresdata/feds/2016/files/2016068pap.pdf>

November 7

A Cautionary Tale: Understanding the Japanese Deflation Experience

Reading: Haruhiko Kuroda, “The Role of Expectations in Monetary Policy: Evolution of Theories and the Bank of Japan's Experience.” Speech at the University of Oxford, June 8 2017.

http://www.boj.or.jp/en/announcements/press/koen_2017/data/ko170609a1.pdf

Andrea de Michelis and Matteo Iocavillo, “Raising an Inflation Target: The Japanese Experience with Abenomics”, *International Finance*

Discussion Papers # 1168, May 2016.

<http://www.federalreserve.gov/econresdata/ifdp/2016/files/ifdp1168.pdf>

Part III

November 10

Nominal GDP Targeting

PAPER Proposal Due

John Williams, "Monetary Policy in a Low R-star World", *FRBSF Economic Letter*, August 15, 2016.

<http://www.frbsf.org/economic-research/publications/economic-letter/2016/august/monetary-policy-and-low-r-star-natural-rate-of-interest/>

Daniel Thornton, "Is Nominal GDP Targeting a Rule Policymakers Could Accept?", *Economic Synopses*, 2013 no. 29, 10/17/2013.

<https://research.stlouisfed.org/publications/economic-synopses/2013/10/17/is-nominal-gdp-targeting-a-rule-policymakers-could-accept/>

Todd E. Clark, "Nominal GDP Targeting Rules: Can They Stabilize the Economy?", *Federal Reserve Bank of Kansas City Economic Review*, 3rd Quarter 1994.

<https://www.kansascityfed.org/PUBLICAT/ECONREV/PDF/3Q94CLRK.PDF>

Optional: David Beckworth and Joshua R. Hendrickson, "Nominal GDP Targeting and the Taylor Rule on a Level Playing Field," working paper, Western Kentucky University, 2015-6.

http://people.wku.edu/david.beckworth/taylor_ngdp.pdf

[For this paper, read Part 1 (why nominal GDP targeting could be useful); read Part IV (estimation results and their interpretation); part 5 (conclusion)].

Ben Bernanke, "What Tools Does the Fed Have Left? Part 2: Targeting longer-term interest rates", Blog post, 3/24/2016.

<https://www.brookings.edu/blog/ben-bernanke/2016/03/24/what-tools-does-the-fed-have-left-part-2-targeting-longer-term-interest-rates>

November 14

No Class: Take-Home Mid-Term Exam on Part 2 Due November 17.

November 17

Challenges in Developing an Exit Strategy from Accommodative Policy and The Corridor Approach

Take-Home Midterm Due

Reading: Board of Governors of the Federal Reserve System, *FOMC Communications related to Policy Normalization*, Webpage, last updated June

14, 2017.

<http://www.federalreserve.gov/newsevents/press/monetary/20140917c.htm>

Describes the evolution of the FOMC's current *Policy Normalization Principles and Plans*, with references to policy statements, minutes of discussion of the principles and plans, and FAQs.

George A. Kahn, "Monetary Policy under a Corridor Operating Framework", *Federal Reserve Bank of Kansas City Economic Review*, Fourth Quarter 2010, pp. 5-34.

<https://www.kansascityfed.org/publicat/econrev/pdf/10q4Kahn.pdf>

Todd Keister, Antoine Martin and Jamie McAndrews, "Divorcing Money from Monetary Policy", *FRBNY Economic Policy Review* vol 14 no. 2, pp. 41-56.

<https://www.newyorkfed.org/medialibrary/media/research/epr/08v14n2/0809keis.pdf>

November 22

How Effective Are Negative Interest Rates?

Class discussion of how the transmission mechanism would work.

Reading: Morten Linneman Bech and Aytak Malkhozov, "How have central banks implemented negative policy rates?", *BIS Quarterly Review*, March 2016.

http://www.bis.org/publ/qtrpdf/r_qt1603e.htm

Ben Bernanke, "What Tools Does the Fed Have Left? Part 1: Negative Interest Rates", Blog Post, March 18, 2016.

<https://www.brookings.edu/blog/ben-bernanke/2016/03/18/what-tools-does-the-fed-have-left-part-1-negative-interest-rates/>

Optional: Claudio Borio and Boris Hofmann, *Is monetary policy less effective when interest rates are persistently low?*, BIS Working Paper 628, April 2017.

<http://www.bis.org/publ/work628.pdf>

November 28

Quiz

Return of Take-Home Midterm

More on Exit Strategy (see 1st reading for November 17th)

Preparation for Discussion of The Future Monetary Framework (see below)

December 1

What Will the Future Monetary Framework Look Like?

Reading: Antoine Martin, Patricia Mosser and Julie Remache, "Implementing Monetary Policy Post-Crisis: What Do We Need to Know?", *Liberty Street Economics (blog)*, July 2016.

<http://libertystreeteconomics.newyorkfed.org/2016/07/implementing-monetary-policy-post-crisis-what-do-we-need-to-know.html#.V8jvuo-cHD4>

Stanley Fischer, "Committee Decisions and Monetary Policy Rules", speech at "The Structural Foundations of Monetary Policy," a Hoover Institution Monetary Policy Conference, Stanford University, Stanford, California, May 5, 2017.

<https://www.federalreserve.gov/newsevents/speech/files/fischer20170505a.pdf>

December 5

Does Accommodative Policy Affect Income and Wealth Distributions?

Reading: Ben Bernanke, "Monetary Policy and Inequality", blogpost, June 1, 2015. <https://www.brookings.edu/blog/ben-bernanke/2015/06/01/monetary-policy-and-inequality/>

December 8

What Can Be Done About the Impact of FOMC (ECB, BoJ) Monetary Policy on Emerging Market Countries?

Quiz

Reading: Quanying Chen, Andrew Filardo, Dong He, and Feng Zhu, "Financial Crisis, U.S. Unconventional Monetary Policy and international spillovers." BIS Working Papers No. 494, March 2015.

<http://www.bis.org/publ/work494.htm>

Lael Brainard, "Cross-Border Spillovers of Balance Sheet Normalization", speech at the National Bureau of Economic Research's Monetary Economics Summer Institute, July 13, 2017.

<https://www.federalreserve.gov/newsevents/speech/files/brainard20170713a.pdf>

December 12

Challenges to Central Bank Independence Post-Crisis

PAPER Due

Reading: Alan Blinder, "How Central Should the Central Bank Be?", CEPS Working Paper no. 198, January 2010.

<http://www.princeton.edu/ceps/workingpapers/198blinder.pdf>

Christopher A. Sims, "Fiscal Policy, Monetary Policy and Central Bank Independence," Luncheon Address at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming, August 26, 2016.

<https://www.kansascityfed.org/~media/files/publicat/sympos/2016/luncheon-discussion.pdf?la=en>

Grading: The student's grade will be based on the following:

Quizzes and Homework Problems	20 percent
Class Participation	15 percent
In-Class Mid-term Exam on Part 1	20 percent
Take-Home Midterm on Part 2	20 percent
Policy Paper Due at End of Class	25 percent

In computing the grade for the quizzes and homework problems, the lowest two scores will be dropped.

For purposes of the class participation grade, the student's prepared short presentations will be the primary (2/3) and contributions to class discussion the secondary (1/3) basis of the grade.

The Take-Home Exam on the material of part 2 will have the format of a policy paper, providing an opportunity to get familiar with the format for the policy paper due on the last days of class.

Other Expectations of Students:

Students will be expected to do the readings in advance of each course session. It is especially important that students keep up with the readings from Abel, Bernanke and Croushore, *Macroeconomics*. As we turn to more readings outside of the textbook, students will be asked to present portions of the reading(s) or analysis as a way to generate discussion. Even if they are not a presenter, students are encouraged to read the articles to be discussed in order to participate in the class discussion.