

# Econ 2410hfc Syllabus

Professor Gabriel Chodorow-Reich

Harvard University

Fall 2014

## Course overview

The course will explore topics in applied macroeconomics, with emphasis on the intersection of empirical analysis and theory. Topics may include monetary policy, fiscal policy, financial frictions, and labor markets. The course will present a variety of empirical methods, such as the narrative approach, VAR analysis, and the use of cross-sectional data in macroeconomics.

## Basic information

Meeting time: Monday 9:00am-12:00pm

Location: Northwest Building - B109

Course website: <http://sites.harvard.edu/icb/icb.do?keyword=k104788>

Office hours: Monday 2-3:00

My office: 318 Littauer Center

My email: [chodorowreich@fas.harvard.edu](mailto:chodorowreich@fas.harvard.edu). Please include “econ 2410” in the subject line.

TA: Will Diamond ([wdiamond@hbs.edu](mailto:wdiamond@hbs.edu)).

## Prerequisites

Completion of the first year Ph.D sequence, or permission of instructor.

## Requirements in brief

Weekly readings, two homework assignments, two referee reports, and a final “virtual” paper.

## Grade

Virtual paper (65%), other homeworks (25%), class participation (10%)

# Requirements details

## Weekly readings

Much of the class will revolve around discussion of assigned readings. This makes it essential that you read the starred papers before lecture and come prepared to discuss and critique them.

## Homework I

The first homework is a data exploration project, described in class and on a handout. I encourage you to discuss ideas together, but each student must complete the assignment separately. **Slides due via email the evening before class on Sunday September 21.** Please include “econ 2410” in the subject line.

## Homework II

The second homework will build quantitative skills with a focus on VARs. You may work together, but each student must submit his/her own write up. **Due September 29.**

## Referee reports

Students will complete two referee reports. You may choose any two papers on the syllabus, subject to the constraint that one come from the first half of the course and the other from the second half. I will also occasionally add one or more current working papers to the list of possible papers in a week. The reports are due at midnight the evening before the lecture for which the paper is assigned. A referee report should contain:

- A one-half page to one page summary of the paper. The summary should not simply repeat the abstract. If there is a key equation in the paper, put it in the summary with the relevant context. The summary should also include an assessment of the paper’s contribution to the literature.
- Two to four pages of analysis of the paper. What did you like, what could be improved, and what did the authors just get wrong? Make your report a stand alone document, repeating key arguments or equations from the paper as necessary before praising or critiquing them.

## “Virtual” paper

This will be your main project for the course. It is a virtual paper in that you do not have to completely finish the paper – but you should make significant progress on it. You will formulate an original research idea, develop a practical plan for executing the idea, and take initial steps in the execution. The paper may take the following form:

1. Introduction: What is the question and why is the question of interest?
2. Literature Review: How does your paper fit into the broader literature?

3. Theoretical Motivation: This could be actual theory or just a sketch of the relevant theory that underlies your question.
4. Data: What data would you use to answer/address this question? Why are the data well suited to the question?
5. Empirical Methodology: How would you use the data to answer your question? Be explicit about identification and causality, keeping in mind that the same set of empirical facts can often support many theories. Depending on the nature of your question and the ease of accessing and using the data, I may ask you to make significant progress in the actual implementation of your proposed empirical work.
6. Falsification Tests: What other specifications, tests and investigations could either bolster or cast doubt upon the primary tests of your hypotheses?
7. Preliminary Results: The extent of the results provided will differ across students based on the project and discussions with me.

Deadlines for the virtual paper:

- **October 9:** Email me a two page write up of proposed idea. Please include “econ 2410” in the subject line.
- **October 14:** Meet with me to receive feedback on proposed idea.
- **November 24 and December 1:** Class presentations, 20 minutes per student.
- **December 10:** Papers due via email. Please include “econ 2410” in the subject line.

You may request approval from me to work jointly on the virtual paper. Of course the bar for sufficient progress will be higher for joint projects.

## Audit policy

If you are a 3rd year or above and wish to audit the course, send me an email introducing yourself and so I can add you to the class list (as always, please include “econ 2410” in the subject line). Auditors are not required to complete the written assignments, but are expected to do the starred readings and participate in class. Subject to availability, you may present your work-in-progress at the end of the semester.

# Course outline

## 1. Overview

\*Lawrence H. Summers. The Scientific Illusion in Empirical Macroeconomics. *The Scandinavian Journal of Economics*, 93(2):pp. 129–148, 1991. <http://www.jstor.org/stable/3440321>

## 2. Applied time series techniques

James D. Hamilton. *Time Series Analysis*. Princeton University Press, 1994, Chapters 10 and 11

Oscar Jorda. Estimation and Inference of Impulse Responses by Local Projections. *American Economic Review*, 95(1):161–182, 2005. <http://www.aeaweb.org/articles.php?doi=10.1257/0002828053828518>

Alan J. Auerbach and Yuriy Gorodnichenko. Fiscal Multipliers in Recession and Expansion. In Alberto Alesina and Francesco Giavazzi, editors, *Fiscal Policy after the Financial Crisis*. The University of Chicago Press, 2013. <http://www.nber.org/papers/w17447.pdf>

## 3. Monetary and fiscal policy: Theory

Homework I due and student presentations.

Marianne Baxter and Robert G. King. Fiscal Policy in General Equilibrium. *The American Economic Review*, 83(3):pp. 315–334, 1993. <http://www.jstor.org/stable/2117521>

Michael Woodford. *Interest and Prices*. Princeton University Press, 2003. <http://press.princeton.edu/titles/7603.html>, Chapter 3

\*Michael Woodford. Simple Analytics of the Government Expenditure Multiplier. *American Economic Journal: Macroeconomics*, 3(1):1–35, September 2011. <http://www.aeaweb.org/articles.php?doi=10.1257/mac.3.1.1>

Lawrence Christiano, Martin Eichenbaum, and Sergio Rebelo. When Is the Government Spending Multiplier Large? *Journal of Political Economy*, 119(1):pp. 78–121, 2011. <http://www.jstor.org/stable/10.1086/659312>

Jesús Fernández-Villaverde, Grey Gordon, Pablo Guerrón-Quintana, and Juan F. Rubio-Ramírez.

Nonlinear Adventures at the Zero Lower Bound. 2012. <http://economics.sas.upenn.edu/~jesusfv/ZLB.pdf>

William Dupor and Rong Li. The 2009 Recovery Act and the Expected Inflation Channel of Government Spending. 2013. <http://research.stlouisfed.org/wp/more/2013-026>

## 4. Monetary and fiscal policy: VARs

Homework II due.

Ben S. Bernanke and Ilian Mihov. Measuring Monetary Policy. *The Quarterly Journal of Economics*, 113(3):869–902, 1998. <http://qje.oxfordjournals.org/content/113/3/869>

Lawrence J. Christiano, Martin Eichenbaum, and Charles L. Evans. Chapter 2 Monetary policy shocks: What have we learned and to what end? volume 1, Part A of *Handbook of Macroeconomics*, pages 65 – 148. Elsevier, 1999. doi: [http://dx.doi.org/10.1016/S1574-0048\(99\)01005-8](http://dx.doi.org/10.1016/S1574-0048(99)01005-8). <http://www.sciencedirect.com/science/article/pii/S1574004899010058>

\*Olivier Blanchard and Roberto Perotti. An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output. *The Quarterly Journal of Economics*, 117(4):1329–1368, 2002. <http://qje.oxfordjournals.org/content/117/4/1329>

\*Ben S. Bernanke, Jean Boivin, and Piotr Elias. Measuring the Effects of Monetary Policy: A Factor-Augmented Vector Autoregressive (FAVAR) Approach. *The Quarterly Journal of Economics*, 120(1):387–422, 2005. <http://qje.oxfordjournals.org/content/120/1/387.abstract>

\*Andrew Mountford and Harald Uhlig. What are the effects of fiscal policy shocks? *Journal of Applied Econometrics*, 24(6):960–992, 2009. <http://dx.doi.org/10.1002/jae.1079>

## 5. Monetary and fiscal policy: Narrative approach

\*Christina D. Romer and David H. Romer. Does Monetary Policy Matter? A New Test in the Spirit of Friedman and Schwartz. In Olivier Jean Blanchard and Stanley Fischer, editors, *NBER Macroeconomics Annual*, volume 4, pages 121–184. MIT Press, 1989. <http://emlab.berkeley.edu/users/cromer/MacroAnnual1989.pdf>

\*Christina D. Romer and David H. Romer. The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks. *American Economic Review*, 100(3):763–801,

2010. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.100.3.763>

\*Robert J. Barro and Charles J. Redlick. Macroeconomic Effects From Government Purchases and Taxes. *The Quarterly Journal of Economics*, 126(1):51–102, 2011. <http://qje.oxfordjournals.org/content/126/1/51>

Valerie A. Ramey. Identifying Government Spending Shocks: It’s all in the Timing. *The Quarterly Journal of Economics*, 126(1):1–50, 2011. <http://qje.oxfordjournals.org/content/126/1/1>

\*Karel Mertens and Morten O. Ravn. The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States. *American Economic Review*, 103(4):1212–47, 2013. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.103.4.1212>

## 6. Fiscal policy: Cross-sectional evidence

David S. Johnson, Jonathan A. Parker, and Nicholas S. Souleles. Household Expenditure and the Income Tax Rebates of 2001. *American Economic Review*, 96(5):1589–1610, 2006. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.96.5.1589>

\*Jonathan A. Parker, Nicholas S. Souleles, David S. Johnson, and Robert McClelland. Consumer Spending and the Economic Stimulus Payments of 2008. *American Economic Review*, 103(6):2530–53, 2013. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.103.6.2530>

\*Gabriel Chodorow-Reich, Laura Feiveson, Zachary Liscow, and William Gui Woolston. Does State Fiscal Relief during Recessions Increase Employment? Evidence from the American Recovery and Reinvestment Act. *American Economic Journal: Economic Policy*, 4(3):118–45, September 2012. <http://www.aeaweb.org/articles.php?doi=10.1257/pol.4.3.118>

\*Emi Nakamura and Jon Steinsson. Fiscal Stimulus in a Monetary Union: Evidence from US Regions. *American Economic Review*, 104(3):753–92, 2014. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.104.3.753>

\*Joshua Hausman. Fiscal Policy and Economic Recovery: The Case of the 1936 Veterans’ Bonus. 2013. [http://behl.berkeley.edu/files/2013/02/WP2013-06\\_Hausman.pdf](http://behl.berkeley.edu/files/2013/02/WP2013-06_Hausman.pdf)

Emmanuel Farhi and Ivan Werning. Fiscal Multipliers: Liquidity Traps and Currency Unions. Harvard University mimeo., 2012

## 7. Bank finance and macro

Ben Bernanke. Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression. *American Economic Review*, 73(3):257–276, 1983. <http://www.jstor.org/stable/1808111>

Myron Slovin, Marie Sushka, and John Polonchek. The Value of Bank Durability: Borrowers as Bank Stakeholders. *The Journal of Finance*, 48(1):247–266, 1993

\*Mark Gertler and Simon Gilchrist. Monetary Policy, Business Cycles, and the Behavior of Small Manufacturing Firms. *The Quarterly Journal of Economics*, 109(2):309–340, 1994. <http://qje.oxfordjournals.org/content/109/2/309>

\*Asim Ijaz Khwaja and Atif Mian. Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market. *American Economic Review*, 98(4):1413–1442, 2008. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.98.4.1413>

\*Mark Gertler and Nobuhiro Kiyotaki. Chapter 11 - Financial Intermediation and Credit Policy in Business Cycle Analysis. volume 3 of *Handbook of Monetary Economics*, pages 547 – 599. Elsevier, 2010. <http://www.sciencedirect.com/science/article/pii/B9780444532381000119>

\*Michael Greenstone and Alexandre Mas. Do Credit Market Shocks Affect the Real Economy? Quasi-Experimental Evidence from the Great Recession and 'Normal' Economic Times. 2012. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2187521](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2187521)

\*Gabriel Chodorow-Reich. The Employment Effects of Credit Market Disruptions: Firm-level Evidence from the 2008-9 Financial Crisis. *The Quarterly Journal of Economics*, 129(1):1–59, 2014. <http://qje.oxfordjournals.org/content/129/1/1.abstract>

## 8. Household finance and macro

Nobuhiro Kiyotaki and John Moore. Credit Cycles. *Journal of Political Economy*, 105(2):pp. 211–248, 1997. <http://www.jstor.org/stable/10.1086/262072>

Edward L. Glaeser, Joseph Gyourko, and Albert Saiz. Housing supply and housing bubbles. *Journal of Urban Economics*, 64(2):198 – 217, 2008. <http://www.sciencedirect.com/science/article/pii/S0094119008000648>

Albert Saiz. The Geographic Determinants of Housing Supply. *The Quarterly Journal of Economics*, 125(3):1253–1296, 2010. <http://qje.oxfordjournals.org/content/125/3/1253.abstract>

\*Atif Mian and Amir Sufi. House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis. *American Economic Review*, 101(5):2132–56, 2011. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.5.2132>

\*Atif Mian and Amir Sufi. What Explains the 2007-2009 Drop in Employment. 2014. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1961223](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1961223)

Gauti Eggertsson and Paul Krugman. Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach. *The Quarterly Journal of Economics*, 127(3):1469–1513, 2012. <http://qje.oxfordjournals.org/content/127/3/1469>

Veronica Guerrieri and Guido Lorenzoni. Credit Crises, Precautionary Savings, and the Liquidity Trap. 2011. <http://www.nber.org/papers/w17583>

## 9. Labor search

Christopher A. Pissarides. *Equilibrium Unemployment Theory*. The MIT Press, 2000. <http://mitpress.mit.edu/books/equilibrium-unemployment-theory>

Richard Rogerson, Robert Shimer, and Randall Wright. Search-Theoretic Models of the Labor Market: A Survey. *Journal of Economic Literature*, 43(4):959–988, 2005. <http://www.aeaweb.org/articles.php?doi=10.1257/002205105775362014>

Robert Shimer. The Cyclical Behavior of Equilibrium Unemployment and Vacancies. *The American Economic Review*, 95(1):pp. 25–49, 2005. <http://www.jstor.org/stable/4132669>

Robert Hall. Employment Fluctuations with Equilibrium Wage Stickiness. *American Economic Review*, 95(1):50–65, 2005. <http://www.aeaweb.org/articles.php?doi=10.1257/0002828053828482>

\*Marcus Hagedorn and Iourii Manovskii. The Cyclical Behavior of Equilibrium Unemployment and Vacancies Revisited. *American Economic Review*, 98(4):1692–706, 2008. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.98.4.1692>

\*Christopher A. Pissarides. The Unemployment Volatility Puzzle: Is Wage Stickiness the Answer? *Econometrica*, 77(5):1339–69, 2009. <http://dx.doi.org/10.3982/ECTA7562>



Andreas Hornstein, Per Krusell, and Giovanni L. Violante. Frictional Wage Dispersion in Search Models: A Quantitative Assessment. *American Economic Review*, 101(7):2873–98, September 2011. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.7.2873>

\*Gabriel Chodorow-Reich and Loukas Karabarbounis. The Cyclicity of the Opportunity Cost of Employment, 2013. [http://scholar.harvard.edu/files/chodorow-reich/files/opportunity\\_cost\\_employment.pdf](http://scholar.harvard.edu/files/chodorow-reich/files/opportunity_cost_employment.pdf)

## 10. Resource reallocation

\*Katharine G. Abraham and Lawrence F. Katz. Cyclical Unemployment: Sectoral Shifts or Aggregate Disturbances? *Journal of Political Economy*, 94(3):pp. 507–522, 1986. <http://www.jstor.org/stable/1833046>

Ricardo J. Caballero and Mohamad L. Hammour. The Cost of Recessions Revisited: A Reverse-Liquidationist View. *The Review of Economic Studies*, 72(2):pp. 313–341, 2005. <http://www.jstor.org/stable/3700654>

\*Andrea L. Eisfeldt and Adriano A. Rampini. Capital reallocation and liquidity. *Journal of Monetary Economics*, 53(3):369 – 399, 2006. <http://www.sciencedirect.com/science/article/pii/S0304393206000298>

Robert Shimer. Mismatch. *American Economic Review*, 97(4):1074–1101, 2007. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.97.4.1074>

\*Giuseppe Moscarini and Shigeru Fujita. Recall and Unemployment. 2013. <http://www.econ.yale.edu/~gm76/Recall.pdf>

\*Aysegül Sahin, Joseph Song, Giorgio Topa, and Giovanni L. Violante. Mismatch Unemployment. *American Economic Review*, 2014. [https://www.aeaweb.org/include/forthcoming\\_include/output/retrieve\\_file\\_protected.php?f\\_id=1533&id=2469](https://www.aeaweb.org/include/forthcoming_include/output/retrieve_file_protected.php?f_id=1533&id=2469)

Julio Garín, Michael Pries, and Eric Sims. Reallocation and the Changing Nature of Economic Fluctuations. 2013. [http://www3.nd.edu/~esims1/gps\\_june27\\_2013.pdf](http://www3.nd.edu/~esims1/gps_june27_2013.pdf)

**11. Student presentations**

**12. Student presentations**