Professor Valerie Ramey
Spring 2019 UCSD

Economics 214
Topics in Applied Macroeconomics
(March 31st version; subject to revisions)

Overview of Course

The goals for this course are the following:

(i) Introduce students to important papers and research questions with high empirical content and relevance to macroeconomics, broadly defined.

(ii) Introduce students to basic methods for analyzing quantitative economic models that serve as a basis for empirical investigations.

(iii) Introduce students to a variety of empirical methods and data sources that can be used to test, calibrate and develop models of interest for macroeconomics and related fields.

(iv) Inspire students to think hard about best practices in empirical work, and how to combine creativity, tools, and high standards to produce successful research.

(v) Assist students in building up a toolbox of simulation and estimation computer programs that can be used as a basis for future research.

Grade:

- **60% for homework assignments**. There are two types of homework assignments: (1) reading reports on some of the papers from class along with class participation; and (2) computer-based projects. Acceptable homework must have both report and code (if applicable). The code should be self-contained so that anyone can run it (which means that I should be able to run it and reproduce the results you present in your report). The computer projects may be done in small groups (no more than three students per group), but each homework must be submitted individually. You can use any programming language that you like. I will be talking mostly about (1) Dynare (for simulating DSGE models); (2) Stata for estimation; and (3) Matlab for estimation. I will grade the homework assignments on a scale of 0 to 10. If you turn in a complete homework on time but received less than 10 points because of programming errors, I will return the homework assignment to you so that you can make corrections and hand it in for

a regrade (only one regrade). My goal is for you to finish the class with a toolbox of programs that don't have errors in them.

- **40% for a written paper related to the material covered**. (10 to 15 pages including graphs and tables, main text double-spaced with 1.50-inch right-hand margin.) Include a brief summary of the literature on the topic and relevance of your contribution. A project that does no more than replicate a study on a different or extended data set would be acceptable, but it nevertheless needs to be written as if it were a short article to be submitted to a journal and include a self-contained explanation of the methodology. You must meet with me by **Friday May 10** to discuss your proposed paper and get approval. A hard copy of the paper should be turned in by 11:00 AM **Tuesday June 11**. (You can put it in my mailbox on the second floor of the Econ department if I am not in my office.) NOTE: By University rules on Academic Integrity, you cannot submit the same (or extremely similar) work to two classes for credit. If your paper for this class is on the same topic as your paper for another class (such as 3rd year paper), you need to make sure that there is enough difference in content that you are not violating rules of academic integrity.

Resources for Class

We will be doing some "real-time" programming, model simulation, and empirical estimation in class, so you should bring your laptop to class. (If you do not have a laptop, talk to me and we will arrange something.) You have access to the following programs.

1. Matlab
2. Dynare (available for free at: http://www.dynare.org/)
3. Harald Uhlig's Smets-Wouter Simulator (available for free at: https://www.wiwi.hu-berlin.de/de/professuren/vwl/wipo/research/Macro_App_Soft/SmeWouToolkit (you might have to add the extension ".exe" to the file after downloading it.)
4. Software for empirical estimation (such as Matlab, Stata, R, Eviews, etc.)

The following reading list includes many papers on each topic. You must read all * papers, preferably before class. I expect you to read some, but certainly not the majority of the papers. This reading list is meant to be a useful bibliographic reference so that you may concentrate on topics that interest you.

I. Credibility in Macroeconomic Empirical Work

Sims, Christopher, "Macroeconomics and Reality," *Econometrica* 48 (January 1980): 1-48.

Cochrane, John, "Shocks," *Carnegie-Rochester Conference Series on Public Policy*, 41 (December 1994): 295-364.

"Symposium: Con out of Economics," *Journal of Economic Perspectives,* Spring 2010, in particular: (i) Angrist, Joshua D., and Jörn-Steffen Pischke. 2010. "The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking the Con out of Econometrics." *Journal of Economic Perspectives*, 24(2): 3-30. (ii) Sims, Christopher A., Spring 2010. "But Economics Is Not an Experimental Science." *Journal of Economic Perspectives*, 24(2): 59-68.

II. Estimating Causal Effects in Macroeconomics: General Methods and Pitfalls

*Lucas Jr, Robert E., "Econometric policy evaluation: A critique," *Carnegie-Rochester Conference Series on Public Policy*, Volume 1, 1976, Pages 19-46

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," ***Handbook of Macroeconomics, 2016,*** Sections 1 and 2.

Stock, James and Mark Watson, "Factor Models and Structural Vector Autoregressions in Macroeconomics," ***Handbook of Macroeconomics, 2016.***

Canova, Fabio and Luca Sala, "Back to Square One: Identification Issues in DSGE Models," *Journal of Monetary Economics* 56 (May 2009): 431-449.

Stock JH, Watson MW. Identification and Estimation of Dynamic Causal Effects in Macroeconomics. Economic Journal. 2018;128 (May) :917-948.

Plagborg-Møller, Mikkel, and Christian K. Wolf. "Local Projections and VARs Estimate the Same Impulse Responses".

Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift, "Bartik Instruments: What, When, Why, and How?" July 2018 working paper.

III. The Effects of Government Spending and Taxes

A. Theory

1. Neoclassical Models

Aiyagari, Rao, Laurence Christiano, and Martin Eichenbaum, "The Output, Employment and Interest Rate Effects of Government Consumption," *Journal of Monetary Economics*, 30 (1992), 73–86.

*Baxter, Marianne, and Robert G. King, "Fiscal Policy in General Equilibrium," *American Economic Review*, 83 (1993), 315–334.

Atkeson, Andrew, V.V. Chari and Patrick Kehoe, "Taxing Capital Income: A Bad Idea," *Federal Reserve Bank of Minneapolis Quarterly Review,* Summer 1999.

Burnside, Craig, Martin Eichenbaum, and Jonas Fisher, "Fiscal Shocks and their Consequences," *Journal of Economic Theory,* 115 (2004), 89-117.

2. New Keynesian Models

*Gali, Jordi, J. David López-Salido, and Javier Vallés, "Understanding the Effects of Government Spending on Consumption," *Journal of the European Economic Association,* 5 (2007): 227-270.

Woodford, Michael. "Simple Analytics of the Government Expenditure Multiplier." *American Economic Journal: Macroeconomics* 3, no. 1 (2011): 1-35.

Zubairy, Sarah. 2014. "On Fiscal Multipliers: Estimates from a Medium Scale DSGE Model." *International Economic Review* 55 (1): 169-195.

Eggertsson, Gauti, "What Fiscal Policy is Effective at Zero Interest Rates?" *NBER Macroeconomics Annual 2010*.

*Sims, Eric and Jonathan Wolff. 2018a. "The Output and Welfare Effects of Government Spending Shocks over the Business Cycle." *International Economic Review* 59 (3): 1403-1435.

Sims, Eric and Jonathan Wolff. 2018b. "The State-Dependent Effects of Tax Shocks." *European Economic Review* 107: 57-85.

Adrien Auclert, and Matthew Rognlie, "A Note on Multipliers in NK Models with GHH Preferences," August 2017 working paper.

B. Estimating the Aggregate Effects of Government Spending

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," ***Handbook of Macroeconomics, 2016,*** Section 4.

*Blanchard, Olivier, and Roberto Perotti, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, 117 (2002), 1329-1368.

Mountford, Andrew and Harald Uhlig, "What are the Effects of Fiscal Policy Shocks? *Journal of Applied Econometrics* 24 (September/October 2009): 960-992.

Ramey, Valerie A., "Identifying Government Spending Shocks: It's All in the Timing," *Quarterly Journal of Economics*, 126 (February 2011): 1-50.

Fisher, Jonas D.M., and Ryan Peters, "Using Stock Returns to Identify Government Spending Shocks," *The Economic Journal*, 120 (May 2010): 414-436.

Ben Zeev, Nadav, and Evi Pappa. 2017. "Chronicle of a War Foretold: The Macroeconomic Effects of Anticipated Defence Spending Shocks." *The Economic Journal* 127 (603): 1568-1597.

Ilzetski, Ethan, Enrique G. Mendoza, Carlos A. Végh, "How Big (Small?) are Fiscal Multipliers?" 2013. "How big (small?) are fiscal multipliers?," *Journal of Monetary Economics*, Elsevier, vol. 60(2), pages 239-254.

Blanchard, Olivier J., and Daniel Leigh. 2013. "Growth Forecast Errors and Fiscal Multipliers." *American Economic Review*, 103(3): 117-20.

*Auerbach, Alan and Yuriy Gorodnichenko. 2012a. "Measuring the Output Responses to Fiscal Policy." *American Economic Journal: Economic Policy* 4 (2): 1-27.

Auerbach, Alan and Yuriy Gorodnichenko. 2012b. "Fiscal Multipliers in Recession and Expansion" forthcoming in *Fiscal Policy After the Financial Crisis*, eds. Alberto Alesina and Francesco Giavazzi, University of Chicago Press.

Ramey, Valerie A. and Sarah Zubairy, "Government Spending Multipliers in Good Times and in Bad: Evidence from 20th Century Historical Data," forthcoming, *Journal of Political Economy*.

Miyamoto, Wataru, Nguyen, Thuy Lan, and Dmitriy Sergeyev. 2018. "Government Spending Multipliers Under the Zero Lower Bound." *American Economic Journal: Macroeconomics* 10 (3): 247-277.

C. Measuring the Aggregate Effects of Taxes

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," ***Handbook of Macroeconomics, 2016,*** Section 4.

*Blanchard, Olivier, and Roberto Perotti, "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics*, 117 (2002), 1329-1368.

*Romer, Christina D., and David H. Romer, "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review*, 100 (June 2010): 763-801 .

Barro, Robert J., and Charles J. Redlick. 2011. "Macroeconomic Effects from Government Purchases and Taxes." *Quarterly Journal of Economics* 126 (1): 51-102.

Leeper, Eric M., Todd B. Walker, Shu-Chun Susan Yang, "Fiscal Foresight and Information Flows," *Econometrica* 81 (3) May 2013: 1115-1145.

House, Christopher L., and Matthew D. Shapiro. 2006. "Phased-In Tax Cuts and Economic Activity." *American Economic Review*, 96(5): 1835-1849.

Mertens, Karel, and Morten O. Ravn. 2012. "Empirical Evidence on the Aggregate Effects of Anticipated and Unanticipated US Tax Policy Shocks." *American Economic Journal: Economic Policy*, 4(2): 145-81.

*Mertens, Karel, and Morten O. Ravn., "A Reconciliation of SVAR and Narrative Estimates of Tax Multipliers," *Journal of Monetary Economics* 2014.

Mertens, Karel, and Morten O. Ravn. 2013. "The Dynamic Effects of Personal and Corporate Income Tax Changes in the United States." *American Economic Review*, 103(4): 1212-47.

D. Cross-Sectional and Panel Data: Theory and Evidence

* Chodorow-Reich, Gabriel. Forthcoming. "Geographic Cross-Sectional Fiscal Spending Multipliers: What Have We Learned?" *American Economic Journal: Economic Policy*.

*Nakamura, Emi, and Jon Steinsson. "Fiscal stimulus in a monetary union: Evidence from US regions." *The American Economic Review* 104.3 (2014): 753-792.

*Farhi, Emmanuel, and Ivan Werning. "Fiscal multipliers: Liquidity traps and currency unions." *Handbook of Macroeconomics* 2 (2016): 2417-2492.

Nekarda, Christopher J. and Valerie A. Ramey, "Industry Evidence on the Effects of Government Spending," *American Economic Journal: Macroeconomics*: Vol. 3 No. 1 (January 2011).

IV. Household Consumption Responses to Fiscal Shocks

*Parker, Jonathan A, Nicolas S. Souleles, David S. Johnson, Robert McClelland, "Consumer Spending and the Economic Stimulus Payments of 2008," *The American Economic Review*, 103 (October 2013): 2530-2553.

Broda, Christian, and Jonathan A. Parker. "The economic stimulus payments of 2008 and the aggregate demand for consumption." *Journal of Monetary Economics* 68 (2014): S20-S36.

*Gelman, Michael, Shachar Kariv, Matthew D. Shapiro, Dan Silverman, and Steven Tadelis. "How individuals respond to a liquidity shock: Evidence from the 2013 government shutdown." *Journal of Public Economics* (2018).

Sahm, Claudia R., Matthew D. Shapiro, Joel Slemrod, "Check in the Mail or More in the Paycheck: Does the Effectiveness of Fiscal Stimulus Depend on How it is Delivered?" *American Economic Journal: Economic Policy*, 4 (August 2012): 216-250.

Shapiro, Matthew D., and Joel Slemrod. "Did the 2008 tax rebates stimulate spending?." *American Economic Review* 99, no. 2 (2009): 374-79.

*Kaplan, Greg and Gianluca L. Violante, "A Model of the Consumption Response to Fiscal Stimulus Payments," *Econometrica* Volume 82, Issue 4, pages 1199–1239, July 2014.

Kueng, Lorenz, "Tax News: Identifying the Household Consumption Response to Tax Expectations using Municipal Bond Prices," 2016 working paper. http://ssrn.com/abstract=2746486

*James Cloyne and Paolo Surico, "Household Debt and the Dynamic Effects of Income Tax Changes *". **Review of Economic Studies.** Volume 84(1) 45-81, January 2017.*

V. Monetary Policy

A. Theoretical Models

(Review your notes from 201C)

Christiano, Lawrence J, Martin Eichenbaum, Charles L. Evans, "Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy," *Journal of Political Economy*, Vol. 113, No. 1, February 2005.

Smets, Frank and Raf Wouters, "An Estimated Dynamic Stochastic General Equilibrium Model of the Euro Area," *Journal of the European Economics Association*, Volume 1, Issue 5, pages 1123–1175, September 2003.

*Smets, Frank and Raf Wouters, "Shocks and Frictions in U.S. Business Cycles: A Bayesian DSGE Approach," *American Economic Review,* 97(3) June 2007: 586-606.

McKay, Alisdair, Emi Nakamura, and Jón Steinsson. "The power of forward guidance revisited." *American Economic Review* 106, no. 10 (2016): 3133-58.

Kaplan, Greg, Benjamin Moll, and Giovanni L. Violante. "Monetary policy according to HANK." *American Economic Review* 108, no. 3 (2018): 697-743.

Bilbiie, Florin, "Monetary Policy and Heterogeneity: An Analytical Framework," January 2019 working paper.

B. Empirical

*Ramey, Valerie A., "Macroeconomic Shocks and Their Propagation," ***Handbook of Macroeconomics, 2016,*** Sections 3.

Olivei, Giovanni, and Silvana Tenreyro. "The timing of monetary policy shocks." *American Economic Review* 97, no. 3 (2007): 636-663.

Romer, Christina D., and David H. Romer, "A New Measure of Monetary Policy Shocks: Derivation and Implications," *American Economic Review*, 94(4) (September 2004): 1055-84 .

Cochrane, John, "Comments on 'A new measure of monetary shocks: Derivation and implications' By Christina Romer and David Romer." July 17 2004, presented at NBER EFG meeting

http://faculty.chicagobooth.edu/john.cochrane/research/papers/talk_notes_new_measure_2.pdf

*Coibion, Olivier, "Are the Effects of Monetary Policy Shocks Big or Small?" *American Economic Journal: Macroeconomics*, Volume 4, Number 2, April 2012, pp. 1-32(32)

Barakchian, S. Mahdi and Christopher Crowe, "Monetary Policy Matters: Evidence from New Shocks," *Journal of Monetary Economics*, Volume 60, Issue 8, November 2013, Pages 950–966

Faust, Jon, Eric T. Swanson, and Jonathan H. Wright (2004), "Identifying VARS based on high frequency futures data," *Journal of Monetary Economics*, Volume 51, Issue 6, September 2004, Pages 1107–113.

Boivin, Jean, Michael T. Kiley, and Frederick S. Mishkin, "How Has the Monetary Transmission Mechanism Evolved Over Time?" *Handbook of Monetary Economics*. 2010.

Tenreyro, Silvana, and Gregory Thwaites. "Pushing on a string: US monetary policy is less powerful in recessions." *American Economic Journal: Macroeconomics* 8, no. 4 (2016): 43-74.

*Gertler, Mark and Peter Karadi, "Monetary Policy Surprises, Credit Costs, and Economic Activity," *American Economic Journal: Macroeconomics*, 7(1) (January 2015) 44–76.

Nakamura, Emi, and Jón Steinsson. "High-frequency identification of monetary non-neutrality: The information effect." *The Quarterly Journal of Economics* 133, no. 3 (2018): 1283-1330.

Gürkaynak, Refet S., Brian Sack, and Eric Swanson. "The sensitivity of long-term interest rates to economic news: Evidence and implications for macroeconomic models." *American economic review* 95, no. 1 (2005): 425-436.

Miranda-Agrippino, Silvia and Giovanni Ricco, "The Transmission of Monetary Policy Shocks," December 2018 working paper.
http://silviamirandaagrippino.com/s/MPTransmission_wp.pdf

Swanson, Eric T., and John C. Williams. "Measuring the effect of the zero lower bound on medium-and longer-term interest rates." *American Economic Review* 104, no. 10 (2014): 3154-85.

VI. News

Cochrane, John, "Shocks," *Carnegie-Rochester Conference Series on Public Policy,* 41 (December 1994): 295-364.

Barro, Robert J., and Robert G. King. 1984. "Time-Separable Preferences and Intertemporal Substitution Models of Business Cycles," *Quarterly Journal of Economics*, 99 (4), 817-839.

*Beaudry, Paul and Frank Portier, "Stock Prices, News, and Economic Fluctuations," *American Economic Review*, 2006, 96(4), 1293-1307.

Kurmann, André and Elmar Mertens, "Stock Prices, News, and Economic Fluctuations: Comment," *American Economic Review* " 104.4 (2014): 1439-1445.

Olivier J. Blanchard & Jean-Paul L'Huillier & Guido Lorenzoni, 2013. "News, Noise, and Fluctuations: An Empirical Exploration," *American Economic Review*, vol. 103(7), pages 3045-70, December.

*Jaimovich, Nir and Sergio Rebelo, "Can News about the Future Drive the Business Cycle?" *American Economic Review*, 99(4) 2009, 1097-1118.

Jaimovich, Nir and Sergio Rebelo. 2008. "News and Business Cycles in Open Economies," *Journal of Money, Credit and Banking*, 40 (8), 1699–1711.

*Barsky, R. B., and E. R. Sims (2011) "News shocks and business cycles," Journal of Monetary Economics, 58(3), 273-289.

Kurmann, André and Eric Sims, "Revisions in Utilization-Adjusted TFP and Robust Identification of News Shocks," November 2017 working paper.

Barsky, Robert. B. and Eric Sims, "Information, Animal Spirits, and the Meaning of Innovations in Consumer Confidence," *American Economic Review*, 102(4), 2012.

Beaudry, Paul and Frank Portier, "News Driven Business Cycles: Insights and Challenges," *Journal of Economic Literature* 2014, 52(4), 993–1074.

*Arezki, Rabah, Valerie A. Ramey, and Liugang Sheng. "News Shocks in Open Economies: Evidence from Giant Oil Discoveries." *The Quarterly Journal of Economics* (2016).