

**National School of Development
Peking University**

Advanced Macroeconomics I

Professor Jiayin Hu

Fall term 2019

Office Hours: Thursday 3-4pm, 506 Yiyuan

Email: jyhu@nsd.pku.edu.cn

Class time: Tuesday 3:10-6:00pm

Classrooms: 208 Yijiao

Teaching assistant: Jiming Wang

Recitation time: Tuesday 10:10am-12:00pm (starting from the second week)

Office hour: TBD

Overview

This class will cover several core topics in macroeconomics. For each topic the aim is to introduce students to the basic questions that motivate research in the area, the theoretical framework used to understand these questions, and empirical work that helps us to answer these questions.

Readings and References

Readings: We will follow the class notes. Starred readings are required, non-starred are for your reference; most will be posted online. I will refer in the readings to the following books, but you are not required to buy any of them:

- Acemoglu, Daron (2009). Introduction to Modern Economic Growth. Princeton University Press.
- Barro, Robert J. and Xavier Sala-i-Martin (2004), Economic Growth, 2nd Edition, MIT Press. Hereafter BX.
- Gali, Jordi (2008). Monetary Policy, Inflation and the Business Cycle: An Introduction to the New Keynesian Framework. Princeton University Press.
- Hall, Robert E. (2010). Forward-Looking Decision Making. Princeton University Press.
- Ljungqvist, Lars and Thomas Sargent (2012). Recursive Macroeconomic Theory. MIT Press, 3rd edition.
- Romer, David (2011). Advanced Macroeconomics, McGraw-Hill, 4th edition.
- Uribe, Martin and Stephanie Schmitt-Grohe (2017), Open Economy Macroeconomics, Princeton University Press. Hereafter USG.
- Woodford, Michael (2003). Interest and Prices: Foundations of a Theory of Monetary Policy. Princeton University Press.

Course Evaluation & Requirements

There will be five assignments during the semester. Four of the assignments will be problem sets. You may work on these in groups, and each group only needs to hand in one solution. These problem sets will count for 30% of the class grade.

The fifth assignment will be a short presentation of a recent paper, accompanied by a one-page summary of the paper. You may choose one paper of your interest from those listed in the syllabus. With permission from the professor, you may also present any other published or working paper in the fields of macroeconomics and macro-finance. This assignment will count for 20% of the class grade and you are required to do it alone.

There will be a final exam during the exam period. The final exam will count for 50% of the class grade. The format of the final exam will be similar to that of the problem sets.

- $\text{Class Grade} = 0.3 * \text{ProblemSets} + 0.2 * \text{Presentation} + 0.5 * \text{FinalExam}$

Course Outline

Part I: Economic Growth

Week 1: September 10th

(+Problem set 1 posted)

The Solow-Swan Model

- Barro and Sala-i-Martin, Chapter 1
- Robert Solow, "A contribution to the theory of economic growth", QJE, 1956
- Swan, T.W., "Economic growth and capital accumulation", Economic Record, 1956
- Barro and Sala-i-Martin, Chapter 10, 11 and 12

Week 2: September 17th

The Ramsey Model

- *Acemoglu, Economic Growth, sections 5.2, 5.3.
- *Barro and Sala-i-Martin, Chapter 2
- Hall, Forward-Looking Decision-Making, Chapter 2.
- Cass, D., "Optimum growth in an aggregate model of capital accumulation", REStud, 1965
- Koopmans, T.C., "On the concept of optimal growth", The econometric approach to development planning, north holland, 1965
- Ramsey, F., "A mathematical theory of saving", Economic Journal, 1928
- Caselli, Francesco and Jaume Ventura (2000). A Representative Consumer Theory of Distribution." American Economic Review, 90, 909-926.

Week 3: September 24th

Extensions of Growth Models

- Endogenous growth
 - The AK model: Barro and Sala-i-Martin, Chapter 4
 - Learning-by-Doing: Barro and Sala-i-Martin, Chapter 4
 - Romer, P., "Increasing returns and long run growth", JPE, 1986
- Human capital
 - Barro and Sala-i-Martin, Chapter 5
- The economics of ideas
 - R&D model of expanding varieties: Barro and Sala-i-Martin, Chapter 6 and 7

Week 4: National Holiday

Part II: Business Cycles

Week 5: October 8th

(+Problem set 2 posted; Problem set 1 due in class)

Consumption Based Asset Pricing

- *Campbell, J.Y. (1999): Asset Prices, Consumption, and the Business Cycle, in Handbook of Macroeconomics, ed. J.B. Taylor and M. Woodford, Elsevier, Amsterdam, Holland.
- *Hall, R.E. (1988): Intertemporal Substitution in Consumption, Journal of Political Economy, 96(2), 339-357.
- *Barro, R.J. (2006): Rare Disasters and Asset Markets in the Twentieth Century, Quarterly Journal of Economics, 121(3), 832-866.
- *Bansal, R. and A. Yaron (2004): Risk for the Long Run: A Potential Resolution of Asset Pricing Puzzles, Journal of Finance, 54(4), 1481-1509.
- Classics - Mehra, R. and E.C. Prescott (1985): The Equity Premium Puzzle, Journal of Monetary Economics, 15, 145-161.

- Recent work - Cochrane, J.H. (2008): The Dog that Did Not Bark: A Defense of Return Predictability, *Review of Financial Studies*, 21, 1533-1575.

Week 6: October 15th

Investment Theory

- BX Chapter 1 (section 1.2.3) and Chapter 2 (section 2.2)
- *Hayashi, F., "Tobin's Marginal q and Average q: A neoclassical Interpretation", *Econometrica*, January 1982, 213-224.
- *Sala-i-Martin, X., "Internal and External Adjustment Costs in the Theory of Fixed Investment". Class notes.

Week 7: October 22nd

Fiscal Stimulus

- *Woodford, M. (2011): Simple Analytics of the Government Expenditure Multiplier, *American Economic Journal: Macroeconomics*, 1(2), 1-46.
- *Barro, R.J. and C.J. Redlick (2011): Macroeconomic Effects from Government Purchases and Taxes," *Quarterly Journal of Economics*, 126(1), 51-102.
- *Blanchard, O.J. and R. Perotti (2002): An Empirical Characterization of the Dynamic Effects of Changes in Government Spending, *Quarterly Journal of Economics*, 117(4), 1329-1368.
- *Ramey (2011): Identifying Government Spending Shocks: It's All in the Timing, *Quarterly Journal of Economics*, 126, 1-50.
- *Nakamura, E. and J. Steinsson (2014): Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions, *American Economic Review*, 104(3), 753-792.
- Classics - Ramey, V.A. and M.D. Shapiro (1998): Costly Capital Reallocation and the Effects of Government Spending, *Carnegie-Rochester Conference Series on Public Policy*, 48, 145-194.
- Recent Work - Eggertsson, G. (2010): What Fiscal Policy is Effective at Zero Interest Rates? in *NBER Macroeconomics Annual 2010*, eds. D. Acemoglu and M. Woodford, University of Chicago Press, Chicago, IL, 59-112.

- Parker, J.A., N. Souleles, D. Johnson, and R. McClelland (2012): Consumer Spending and the Economic Stimulus Payments of 2008, *American Economic Review*, 103(6), 2530-2553.
- Romer, C.D. and D.H. Romer (2010): The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks, *American Economic Review*, 100(3), 763-801.
- Acconcia, A., G. Corsetti, and S. Simonelli (2011): Mafia and Public Spending: Evidence on the Fiscal Multiplier from a Quasi-experiment, *American Economic Review*, 104(7), 2185-2209.
- Farhi, E. and I. Werning (2013): Fiscal Multipliers: Liquidity Traps and Currency Unions, Working Paper, Harvard University.
- Christiano, L., M. Eichenbaum, and S. Rebelo (2011): When Is the Government Spending Multiplier Large? *Journal of Political Economy*, 119(1). 78-121.
- Penning, S. (2014): "Cross-Region Transfers in a Monetary Union, Working Paper, New York University.

Part III: New Keynesian Economics

Week 8: October 29th

(+Problem set 3 posted; Problem set 2 due in class)

Money and Inflation

- * Hall, Robert E. and Ricardo Reis (2014). Controlling inflation under new-style central banking." Notes to be distributed.
- * Woodford, Interest and Prices, chapter 2.
- Woodford, Michael (1994). Monetary Policy and Price Level Determinacy in a Cash-in-Advance Economy." *Economic Theory*, 4, 345-380.
- Woodford, Michael (1995). Price-Level Determinacy without Control of a Monetary Aggregate." *Carnegie-Rochester Conference Series on Public Policy*, 43, 1-46.
- Benhabib, Jess, Stephanie Schmitt-Grohe and Martin Uribe (2002). Avoiding Liquidity Traps." *Journal of Political Economy*, 110, 535-563.
- *Nakamura, E. and J. Steinsson (2013): Price Rigidity: Microeconomic Evidence and Macroeconomic Implications, *Annual Review of Economics*, 5, 133-163.
- *Golosov, M., and R. E. Lucas (2007): Menu Costs and Phillips Curves, *Journal of Political Economy*, 115(2), 171-199.

- *Nakamura, E. and J. Steinsson (2010): Monetary Non-Neutrality in a Multi-Sector Menu Cost Model, *Quarterly Journal of Economics*, 125(3), 961-1013.
- *Christiano, L.J., M. Eichenbaum and C. Evans (2005): Nominal Rigidities and the Dynamic Effects of a Shock to Monetary Policy, *Journal of Political Economy*, 113(1), 1-46.
- *Romer, C.D. and D.H. Romer (2004): A New Measure of Monetary Shocks: Derivation and Implications, *American Economic Review*, 94(4), 1055-1084.
- *Stock, J.H. and M.W. Watson (2001): Vector Autoregressions, *Journal of Economic Perspectives*, 15(4), 101-115.
- Classics - Friedman, M. and A.J.Schwartz (1963): *A Monetary History of the United States, 1867-1960*, Princeton University Press, Princeton, NJ.
- Sims, C.A. (1980): Macroeconomics and Reality, *Econometrica*, 48(1), 1-48.
- Recent Work - Gertler, M. and P. Karadi (2015): Monetary Policy Surprises, Credit Costs, and Economic Activity, *American Economic Journal: Macroeconomics*, 7(1), 44-76.
- Nakamura, E. and J. Steinsson (2013): High Frequency Identification of Monetary Non-Neutrality," Working Paper, Columbia University.
- Bernanke, B.S., J. Boivin and P. Elias (2005): Measuring Monetary Policy: A Factor Augmented Vector Autoregressive (FAVAR) Approach, *Quarterly Journal of Economics*, 120(1), 387-422.
- Gurkaynak, R.S., B. Sack and E.T. Swanson (2005): Do Actions Speak Louder Than Words? The Response of Asset Prices to Monetary Policy Actions and Statements, *International Journal of Central Banking*, 1(1), 55-93.

Week 9: November 5th

New Keynesian Models

- * Mankiw, N. Gregory and Ricardo Reis (2011). Imperfect Information and Aggregate Supply. *Handbook of Monetary Economics*, edited by B. Friedman and M. Woodford, Elsevier-North Holland, vol. 3A, 182-230. Sections 1-3.
- * Romer, *Advanced Macroeconomics*, chapter 6, part B.
- Mankiw, N. Gregory (1985). Small Menu Costs and Large Business Cycles: A Macroeconomic Model of Monopoly." *Quarterly Journal of Economics*, 100, 529-539.

- Ball, Laurence and David Romer (1990). Real Rigidities and the Nonneutrality of Money." *Review of Economic Studies*, 57, 183-203.
- Nakamura, Emi and Jon Steinsson (2013). Price Rigidity: Microeconomic Evidence and Macroeconomic Implications." *Annual Review of Economics*, 5, 133-163.
- * Romer, *Advanced Macroeconomics*, Chapter 6, part C.
- * Mankiw, N. Gregory and Ricardo Reis (2002). "Sticky Information versus Sticky Prices: A Proposal to Replace the New Keynesian Phillips Curve." *Quarterly Journal of Economics*, 117, 1295-1328.
- Woodford, *Interest and Prices*, Chapter 3.
- Roberts, John (1995). "New Keynesian Economics and the Phillips Curve." *Journal of Money, Credit and Banking*, 27(4), 975-984.
- Mankiw, N. Gregory (2001). "The Inexorable and Mysterious Tradeoff between Inflation and Unemployment." *Economic Journal*, 111, C45-61.
- * Woodford, Michael (2009). *Convergence in Macroeconomics: Elements of a New Synthesis.* *American Economic Journal: Macroeconomics*, 1(1), 267-279.
- * Gali, Jordi and Mark Gertler (2007). *Macroeconomic Modeling for Monetary Policy Evaluation.* *Journal of Economic Perspectives*, 21(4), 25-45.
- Woodford, *Interest and Prices*, chapters 4 and 5.
- Gali, *Monetary Policy*, chapter 3.
- Mankiw, N. Gregory and Ricardo Reis (2002). *Sticky Information in General Equilibrium.* *Journal of the European Economic Association*, 5 (2-3), 603-613.
- Schmitt-Grohe, Stephanie and Martin Uribe (2007). *Optimal, Simple, and Implementable Monetary and Fiscal Rules.* *Journal of Monetary Economics*, 54, 1702-1725.

Week 10: November 12th

Monetary Policy

- * Reis, Ricardo (2013). *Central Bank Design.* *Journal of Economic Perspectives*, 27 (4), 17-44.
- * Hall, Robert E. and Ricardo Reis (2013). *Maintaining Central-Bank Solvency under New-Style Central Banking.* Columbia University manuscript.

- Reis, Ricardo (2013). The Mystique Surrounding the Central Banks Balance Sheet, Applied to the European Crises." American Economic Review, 103, 135-140.
- Woodford, Michael (2008). How Important is Money in the Conduct of Monetary Policy?" Journal of Money, Credit and Banking, 40(8), 1561-1598.
- * Sims, Christopher A. (2013). Paper Money." American Economic Review, 103(2), 563-584.
- * Leeper, Eric (1991).Equilibria under active and passive monetary and fiscal policies." Journal of Monetary Economics, 27, 129-147.
- Sargent, Thomas and Neil Wallace (1981). Some unpleasant monetarist arithmetic. Federal Reserve Bank of Minneapolis Quarterly Review, Fall, 1-17.
- Woodford, Michael (2000). Fiscal Requirements for Price Stability." Journal of Money Credit and Banking, 33, 669-728.
- Uribe, Martin (2006). A Fiscal Theory of Sovereign Risk." Journal of Monetary Economics 53, 1857-1875.
- * Woodford, Michael (2010). Optimal Monetary Stabilization. Handbook of Monetary Economics, edited by B. Friedman and M. Woodford, Elsevier-North Holland, vol. 3B, 723-828. Sections 1-3.
- * Ball, Laurence, N, Gregory Mankiw and Ricardo Reis (2005). Monetary Policy for Inattentive Economies. Journal of Monetary Economics, 52(4), 703-725.
- Woodford, Michael (2010) Optimal Monetary Stabilization." Handbook of Monetary Economics, edited by B. Friedman and M. Woodford, Elsevier-North Holland, vol. 3B, 723-828. Sections 4-5.
- Reis, Ricardo (2013). "Central Bank Design." Journal of Economic Perspectives, forthcoming.
- Gali, Monetary Policy, chapter 4.
- Woodford, Interest and Prices, chapters 1, 6, 7, 8.

Week 11: November 19th

(+Problem set 4 posted; Problem set 3 due in class)

Special Topic: The Great Recession

- *Mian, A.R. and A. Sufi (2011): House Prices, Home Equity-Based Borrowing, and the U.S. Household Leverage Crisis, American Economic Review, 2011, 101 (August): 2132-2156.

- *Mian, A.R. and A. Sufi (2012): What Explains the 2007-2009 Drop in Employment? *Econometrica*, 82(6), 2197-2223.
- Khwaja A.I. and A. Mian (2008): Tracing the Impact of Bank Liquidity Shocks: Evidence from an Emerging Market, *American Economic Review*, 98(4), 1413-1442.
- Kashyap, A.K. and J.C. Stein (2000): What Do a Million Observations on Banks Say about the Transmission of Monetary Policy? *American Economic Review*, 90(3), 407-428.
- Classics - Bernanke, B.S. (1983): Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression, *American Economic Review*, 73(3), 257-276.
- Mian, A.R. and A. Sufi (2009): The Consequences of Mortgage Credit Expansion: Evidence from the U.S. Mortgage Default Crisis, *Quarterly Journal of Economics*, 124(4), 1449-1496
- Chodorow-Reich, G.I. (2014): The Employment Effects of Credit Market Disruptions: Firm-Level Evidence from the 2008-09 Financial Crisis, *Quarterly Journal of Economics*, 129(1), 1-59.
- Jimenez, G., S. Ongena, J.-L. Peydro, and J. Saurina (2012): Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications, *American Economic Review*, 102(5), 2301-2326.
- Amiti, M. and D. Weinstein (2011): Exports and Financial Shocks, *Quarterly Journal of Economics*, 126(4), 1841-1877.
- Mian, A., K. Rao and A. Sufi (2013): Household Balance Sheets, Consumption, and the Economic Slump, *Quarterly Journal of Economics*, 128(4), 1687-1726.
- Paravisini, D., V. Rappoport, P. Schabl, and D. Wolfenzon (2014): Dissecting the Effects of Credit Supply on Trade: Evidence from Matched Credit-Export Data, *Review of Economic Studies*, forthcoming.

Part IV: Open Economy Macroeconomics

Week 12: November 26th

Financial Frictions

- *USG, chapter 12, Financial Frictions and Aggregate Instability.
- Bianchi, Javier, Overborrowing and Systemic Externalities in the Business Cycle, *American Economic Review* 101, December 2011, 3400-3426.

- Fern'andez, Andres, Alessandro Rebucci, and Martin Uribe, Are Capital Controls Countercyclical?, *Journal of Monetary Economics* 76, 2015, 1-14.
- Jeanne, Olivier, *Macroprudential Policies in a Global Perspective*, NBER Working Paper No. 19967, March, 2014.
- Jeanne, Olivier, and Anton Korinek, *Macroprudential Regulation Versus Mopping Up After the Crash*, NBER Working Paper No. 18675, January 2013.
- Lorenzoni, Guido, *Inefficient Credit Booms*, *Review of Economic Studies* 75, 2008, 809-833.
- Mendoza, Enrique G., *Sudden Stops, Financial Crisis, and Leverage*, *American Economic Review*, December 2010, 1941-1966.
- Uribe, Martn, *On Overborrowing*, *American Economic Review Papers and Proceedings* 96, May 2006, 417-421.
- Uribe, Martn, *Individual Versus Aggregate Collateral Constraints and the Overborrowing Syndrome*, NBER Working Paper No. 12260, May 2006.

Week 13: December 3rd

Exchange Rate Policy

- *USG, chapter 9, *Nominal Rigidity, Exchange Rates, And Unemployment*.
- *USG, chapter 10, *Exchange Rate Policy and Capital Controls*. Background readings
- Drenik, Andres, *Labor Market Dynamics after Nominal Devaluations*, Stanford University, December 2015.
- Calvo, Guillermo, *Monetary policy challenges in emerging markets: Sudden stop, liability dollarization, and lender of last resort*, NBER, working paper No. 12788, 2006.
- Farhi, Emmanuel and Ivan Werning, *Dealing With the Trilemma: Optimal Capital Controls With Fixed Exchange Rates*, Harvard University, June 2012.
- Farhi, Emmanuel and Ivan Werning, *Fiscal Unions*, Harvard University, 2012.
- Fornaro, Luca, *Financial Crises and Exchange Rate Policy*, *Journal of International Economics*, 2015.
- Gali, Jordi, and Tommaso Monacelli, *Monetary Policy and Exchange Rate Volatility in a Small Open Economy*, *The Review of Economic Studies* 72, July 2005.

- Ottonello, Pablo, Optimal Exchange Rate Policy Under Collateral Constraints and Wage Rigidity, Columbia University, 2015.
- Schmitt-Grohé, Stephanie, and Martín Uribe, Managing Currency Pegs, American Economic Review: Papers and Proceedings 102, May 2012.
- Schmitt-Grohé, Stephanie, and Martin Uribe, Downward Nominal Wage Rigidity and the Case for Temporary Inflation in the Eurozone," Journal of Economic Perspectives, 2013.
- Schmitt-Grohé, Stephanie, and Martin Uribe, Downward Nominal Wage Rigidity, Currency Pegs, and Involuntary Unemployment, Journal of Political Economy, October 2016.

Week 14: December 10th

(+Problem set 4 due in class)

Special Topic: Sovereign Debt

- *USG, chapter 13, Sovereign Default.
- Arellano, Cristina, Default Risk and Income Fluctuations in Emerging Economies, American Economic Review 98, June 2008, 690-712.
- Arellano, Cristina, and Ananth Ramanarayanan, Default and the Maturity Structure in Sovereign Bonds, Journal of Political Economy 120, 2012, 187-232.
- Benjamin, David, and Mark L.J. Wright, Recovery Before Redemption: A Theory of Delays in Sovereign Debt Renegotiations, Working Paper, University of California Los Angeles, 2013.
- Bi, Ran, Debt Dilution and Maturity Structure of Sovereign Bonds, University of Maryland, February 2006.
- Borensztein, Eduardo, and Ugo Panizza, The Costs of Sovereign Default, IMF Staff Papers 56, 2009, 683-741.
- Broner, Fernando A., Guido Lorenzoni, and Sergio L. Schmukler, Why do emerging economies borrow short term?, Journal of the European Economic Association 11(S1), January 2013, 67-100.

Week 15 & 16: December 17th & 24th

Student Presentation & Discussion

Final Exam: TBD