Financial Frictions, Liquidity, and the Business Cycle

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This course examines the basic channels through which financial frictions affect macroeconomic outcomes. Emphasis will be given to the transmission mechanisms that lead to amplification and persistence of shocks, including the role played by liquidity. Using several general equilibrium models we will learn more thoroughly the functioning of financial markets, why they are prone to crises, and the rationale for financial regulation.

Students are expected to learn the basic imperfect information models of moral hazard and asymmetric information and their applications to the understanding of financial intermediation. Students will be taught complex models that, building on the previously learned financial frictions, describe different channels through which they affect the business cycle, i.e. they produce amplification and persistence of shocks. At the end of the course the student is expected to understand the role of different financial frictions, and to be proficient in the application of the concepts and methods from the models covered in the course. The student should show competence in analyzing a macroeconomic problem, where the above-mentioned concepts and methods are central, that is competence in solving such models and explaining in economic terms the results and implications and how they derive from the assumptions of the model.

The particularly good performance, corresponding to the top mark, is characterized by a complete fulfillment of these learning objectives.

Some classes will be used to solve problems sets that will be given in advance.

At the beginning of every lecture, except for the first one, students will be given a short quiz based on the starred readings in the bibliography. Students will be told in advance on which readings the quizzes will be. Students need to pass at least 50% of quizzes to be able to take the final exam.

Preliminary Syllabus

Bibliography:

(JT) Tirole J., "The Theory of Corporate Finance", 2006, Princeton University Press

1. The great recession and moral hazard

Barth, J., R. Brumbaugh, and J. Wilcox, 2000, "Policy Watch: The Repeal of Glass-Steagal and the Advent of Broad Banking", *The Journal of Economic Perspectives*, **14**(2), 191-204.

Adrian, T. and H. Shin, 2010, "Liquidity and leverage", *Journal of Financial Intermediation*, **19**, 418-437.

Mian, A. and A. Sufi, 2010, "The great recession: Lessons from microeconomic data", *American Economic Review: Papers and Proceedings,* **100**, 1-10.

JT 3.1, 3.2, 3.4

2. Finance under asymmetric information. Moral hazard and adverse selection. Credit rationing

*JT 3.2, 3.4, 6.1, 6.2.1, 6.3

Stiglitz J. and A. Weiss, 1981, "Credit Rationing in Markets with Imperfect Information", *American Economic Review*, **71**, 393-410

3. Heterogeneity, net worth, and the financial accelerator

*JT chapter 13 , 13.1, 13.2, 13.3

Bernanke, B. and M. Gertler, 1989, "Agency costs, net worth, and business fluctuations", *American Economic Review*, **79**, p.14-31.

*Bernanke B. and M. Gertler, 1990, "Financial Fragility and Economic Performance", *Quarterly Journal of Economics*, **105**, 87-114.

4. Liquidity. Leverage, fire sales and the asset market feedback

*JT chapter 5, 5.1-3

JT chapter 14, 14.1, 14.2, 14.3

Shleifer A. and R. Vishny, 1992, "Liquidation values and debt capacity: A market equilibrium approach", *Journal of Finance*, **47**, 1343-1366.

*Kiyotaki N. and J. Moore, 1997, "Credit Cycles", *Journal of Political Economy*, **105**, 211-248.

5. Fire sale externalities

Fanelli S. and M. Gonzalez-Eiras, 2018, "Resolution of Collateral Crises", working paper.

*Lorenzoni, G., 2008, "Inefficient credit booms", *Review of Economic Studies*, **75**, 809-833.

Hart O. and L. Zingales, 2015, "Liquidity and Inefficient Investment", *Journal of the European Economic Association*, 13(5), 737–769.

6. Asymmetric information and asset market feedback

*Kurlat P., 2013, "Lemons Market and the Transmission of Aggregate Shocks", *American Economic Review*, **103**(4), 1463-89.

Kurlat P., 2018, "How I learned to stop worrying and love fire sales", working paper.

Gorton G. and G. Ordonez, 2014, "Collateral Crises", *American Economic Review*, **104**(2), 343-78.

Asriyan V., 2015, "Balance Sheet Recessions with Informational and Trading Frictions", CREI working paper.

7. Endogenous leverage and the leverage cycle. The lending channel and its effects

Geanakoplos J., 2009, "The leverage cycle", in Acemmoglu D., K. Rogoff and M. Woodford, eds., NBER Macroeconomics Annual.

Gorton G. and A. Metrick, 2011, "Securitized banking and the run on repo", *Journal of Financial Economics*, **104**(3), 425-451.

Kashyap, Anil K and Jeremy C. Stein, 2000, "What Do a Million Observations on Banks Say About the Transmission of Monetary Policy?", *American Economic Review*, Volume 90(3), 407-428.

*Chodorow-Reich G., 2014, "The Employment Effect of Credit Market Disruptions: Firm-level Evidence from the 2008-09 Financial Crisis", *Quarterly Journal of Economics*, 129(1), 1-59.

8. Managing aggregate liquidity

*JT chapter 12 and 15

*Allen F., and D. Gale, 2000, "Financial contagion, *Journal of Political Economy*, **108**, 1-33.

Holmstrom B., and J. Tirole, 1998, "Private and Public Supply of Liquidity", *Journal of Political Economy*, **106**, 1-40.

Sundaresan S. and Z. Wang, 2009, "Y2K Options and the Liquidity Premium in Treasury Markets", *Review of Financial Studies*, **22**(3), 1021-1056

Krishnamurthy A. and A. Vissing-Jorgensen, 2012, "The Aggregate Demand for Treasury Debt", *Journal of Political Economy*, **120**(2), 233-267

9. House prices, mortgage market, and household debt

*Mian A. and A. Sufi, 2011, "House Prices, Home Equity-Based Borrowing, and the US Household Leverage Crisis", *American Economic Review*, Volume 101(5), 2132-56.

Mian A., A. Sufi, and F. Trebbi, 2015, "Foreclosures, House Prices, and the Real Economy", *The Journal of Finance*, 70(6), 2587-2633.

Eggertson G. and P. Krugman, 2012, "Debt, Deleveraging, and the Liquidity Trap: A Fisher-Minsky-Koo Approach", *Quarterly Journal of Economics*, Volume 127, 1469-1513.

Justiniano A., G. Primiceri and A. Tambalotti, 2015, "Household leveraging and deleveraging", Review of Economic Dynamics, Volume 18(1), 3-20.

Agarwal S., G. Amromin, I. Ben-David, S. Chomsisengphet, T. Piskorski, and A. Seru, "Policy Intervention in Debt Renegotiation: Evidence from the Home Affordable Modification Program", Journal of Political Economy, 125(3), 654-712.

10. Lender of last resort

*Freixas X. and J. Rochet, 2008, "Microeconomics of Banking", MIT Press chapter 7.7

*Fahri E. and J. Tirole, 2017, "Shadow Banking and the Four Pillars of Traditional Financial Intermediation", working paper.

Gonzalez-Eiras, M., 2004, "Banks' Liquidity Demand in the Presence of a Lender of Last Resort", working paper.

Miron J., 1986, "Financial Panics, the seasonality of the nominal interest rate, and the founding of the Fed", *American Economic Review*, **76**, 125-40.

Rochet J. and X. Vives, 2004, "Coordination Failures and the Lender of Last Resort: Was Bagehot Right after all?", *Journal of the European Economic Association*, **2**(6), 1116-1147.

Formal Requirements

The students are required to pass a take home, open book, written final exam. At the beginning of every lecture, except for the first one, students will be given a short quiz based on the starred readings in the bibliography.

Examination

The grade will be determined by a written exam. To be able to take the exam, students need to pass at least 50% of quizzes .

Resit examination: Same as ordinary.

Requirements for PhD students

PhD students may take this course and complete a research module. For this on addition of the requirements stated above, they must write a term paper that has to be handed in by October 1, 2018.