

Macro-Modeling
Economics 244, Fall 2014
University of Pennsylvania
Still preliminary and subject to changes

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General Information

Lecture Times: Tuesdays and Thursdays, 9:00am - 10:20am

Lecture Location: TBD

Office Hours and Availability: Thursdays 5:00pm - 6:00pm (in my office), or by appointment.

Teaching Assistant: The TA for the course is TBD. His e-mail address is TBD@sas.upenn.edu. His office hours are TBD.

Course Website: Course information is available in Canvas, which I recommend to check regularly. Canvas is the official channel I will use to make announcements, post slides, homeworks, exercises and, from time to time, relevant papers for your reading.

Attendance: Students are expected and strongly encouraged to attend every lecture.

Pre-requisites

- Econ 101 and Econ 102. Intermediate Micro and Intermediate Macro.
- Math 104. Calculus 1
- Math 114 or Math 115. Calculus 2

Course Policies: The Department of Economics maintains a common set of policies that apply to all classes. By taking this class you agree to abide by these policies. You are encouraged to read these policies carefully. Full details can be found here:

<http://economics.sas.upenn.edu/undergraduate-program/resources/policies>.

Course Description

The recent global financial crisis, which started in 2007 and put most developed countries on the brinks of a collapse, exposed some of the most important open questions in macroeconomics. What is the role of financial markets and financial intermediaries for the aggregate economy? Do financial markets induce growth and development? Do they trigger and spread painful crises? Which policies can improve the positive effects of financial markets in terms of long-run growth, and reduce their negative ones in terms of short-time fluctuations?

Given the renewed interest in these questions and the clear importance of coming up with answers, this course focuses on a very particular type of macro modeling; *the modeling of macroeconomics in which financial markets play a role*.

To answer these questions by constructing sensible macroeconomic models, however, we should first understand why there is financial intermediation in the first place, why financial markets are so different than other markets and what is so special about financial organizations. To model seriously financial markets in a macroeconomic environment, we have to delve first into their micro-foundations, so that then we can seriously understand their macroeconomic impact.

Structure of the Course

The course will be divided into four sections.

First Section – Micro foundations (8 lectures): We will cover theoretical explanations (micro foundations) about why financial intermediation exists and what makes financial institutions and financial markets so special.

Second Section – Macroeconomics (6 lectures): We will review the role of financial markets in macro models, the theoretical arguments about why financial markets are important for economic growth, why they are fragile and why financial crises can both generate and amplify recessions. We will also study the growth and decline of the so-called “shadow banking”, critical, for example, in the understanding of the recent financial crisis and the discussion about financial regulations.

Third Section – Evidence (6 lectures): We will cover empirical studies that test quantitatively the effects of financial development on economic development and growth and the channels through which financial crises spread over real activity.

Fourth Section – Cases of Financial Crises (4 lectures): At the start of each class, I will provide an overview of the questions, empirical techniques and the relevant literature. Then students will present short summaries of a particular reading from the syllabus and we will discuss the presentation together. Topics will include:

- History of Financial Crises,
- Policy Responses to Financial Crises,
- The Recent Financial Crisis.

Grading and Course Dynamics

Your success in this course is as important to me as it is to you. Therefore I want to be available for your questions as much as possible. Needless to say, it is always best to ask questions during class because it is highly likely that if you are either confused by something, or interested to know more about something, then others are too. So, please, interrupt me a lot!

Besides your participation in class, there will be plenty of opportunities to ask questions. If my office hours are not convenient to you, send me an e-mail and we will try to arrange an appointment (I am also happy to try and answer questions directly over e-mail). I also encourage you to meet with the TA if you have questions. His contact details and office hours are detailed in the first page and he/she will be an excellent source of information.

Your feedback during this particular class is key. If there is something that you think can be improved, please let me know. We are in this together and the higher the quality of the class, the better for us all. Finally, I would like this class to be very flexible, particularly during the second part. Since we will be discovering new common interests along the way, and I will try to accommodate those, the reading list is not exhaustive and may change during the semester.

Your grade will be based on three midterms, a long homework and a short presentation, which are worth 25 points each. Note this adds up to 125 points. Thus, I will drop your worst 25 points. If you are absent in one of the midterms or you do not hand in the homework, I can drop those points from consideration. This does not count for presentations though. If you do not present I will not drop those points from the total grade. The rationale for this policy is that, since presentations run for two weeks, we can always reschedule if needed.

The **first midterm** (Thursday, October 2nd) will cover the material of the first section, the **second midterm** (Tuesday, November 4th) will cover the material of the second section and the **last midterm** (Tuesday, December 9th) will focus mostly on the last two sections, but will be more comprehensive, potentially exploiting material of the first two sections as well.

The **homework** will require that you work with data and will also require a short essay in which you are expected to relate media discussions about financial markets (that I will determine when time comes) with the theoretical background introduced in class. You will have 10 days to complete the homework.

We will make every effort to have the tests and the homework graded and handed back in a week. If you have any concern with the grade, you have one week to return your exam with a written explanation of why you think the grade is incorrect. After that week grades cannot be modified.

Finally, the **presentation** will be about one of the papers listed below under “Students Presentations”. Presentations will be scheduled during class on November 20 and 25 and December 2 and 4. We will talk more about this when time comes.

Even though not required, a textbook you can read is Knoop, Todd (2008). “*Modern Financial Macroeconomics: Panics, Crashes and Crises*”. During the first section I will also use Freixas, Xavier and Rochet, Jean-Charles (2008) “*Microeconomic of Banking*” (there are copies

available at the library). The most important material to prepare for the midterms are my classes, my slides and the practice exercises I will post opportunistically.

Reading List

An asterisk (*) means alternative, but recommended, reading.

Lectures 1-8 - Foundations of Financial Intermediation.

Gorton G. and A. Winton, (2002) "Financial Intermediation", *Handbook of the Economics of Finance*. Eds: George Constantinides, Milt Harris and Rene Stulz. North Holland.

Knoop, T. (2008). "*Modern Financial Macroeconomics: Panics, Crashes and Crises*" Blackwell Publishing. Part I.

Freixas, X. and JC Rochet. (1997) "*Microeconomics of Banking*". MIT Press. Ch. 1-2.

* Boyd J. and E. Prescott (1986), "Financial Intermediary Coalitions", *Journal of Economic Theory*, 38, 211-232.

* Dang, TV, G. Gorton, B. Holmstrom and G. Ordonez (2014), "Banks as Secret Keepers", *NBER Working Paper 20255*.

* Diamond D.(1984), "Financial Intermediation and Delegated Monitoring", *Review of Economic Studies*, 51, 393-414.

* Diamond D. and P. Dybvig (1983), "Bank Runs, Deposit Insurance and Liquidity", *Journal of Political Economy*, 91, 401-419.

* Diamond D. and R. Rajan (2001), "Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking", *Journal of Political Economy*, 94, 691-719.

* Gale D. and M. Hellwig (1985), "Incentive Compatible Debt Contracts: The One-Period Problem". *Review of Economic Studies*, 52, 647-663.

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

* Jacklin, C and S. Bhattacharya (1988) "Distinguishing Panics and Information-based Bank Runs: Welfare and Policy Implications", *Journal of Political Economy*, 96, 568-592.

* Leland H. and D. Pyle (1977) "Informational Asymmetries, Financial Structure, and Financial Intermediation", *Journal of Finance*, 31, 371-387.

* Modigliani, F. and M. Miller (1958) "The Cost of Capital, Corporation Finance and the Theory of Investment", *American Economic Review*, 48, 261-297.

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

* Townsend, R. (1979), "Optimal Contracts and Competitive Markets with Costly State Verification", *Journal of Economic Theory*, 21, 265-293.

Lectures 9-14 – Financial Markets in Macro Models. Growth and Fluctuations. Bubbles

- Knoop, T. (2008). “*Modern Financial Macroeconomics: Panics, Crashes and Crises*” Blackwell Publishing. Part II.
- Levine, R. (1997). “Financial Development and Economic Growth: Views and Agenda.” *Journal of Economic Literature*.
- Bernanke, B and M. Gertler (1989). “Agency Costs, Net Worth, and Business Fluctuations”. *American Economic Review* 79, 14—31.
- Kiyotaki N. and J. Moore (1997), “Credit Cycles” *Journal of Political Economy*, 105, 211-248.
- * Abreu, D and M. Brunnermeier (2003) “Bubbles and Crashes” *Econometrica*, 71, 173-204.
- * Allen F. and D. Gale (1998), “Optimal Financial Crises” *Journal of Finance, Papers and Proceedings*, 53, 1245-1284.
- * Allen F., S. Morris and S. Shin (2006), “Beauty Contests and Iterated Expectations in Asset Markets”, *Journal of Financial Studies*, 19, 719-752.
- * Carlstrom C. and T. Fuerst (1997) “Agency Costs, Net Worth and Business Fluctuations: A Computable General Equilibrium Analysis”, *American Economic Review*, 87, 893-910.
- * Gorton G. and G. Ordonez (2013) “Collateral Crises”, *American Economic Review*, 104. 343-378.
- * Jeanne, O, and A. Korinek (2013). “*Macroprudential Regulation Versus Mopping Up After the Crash*” Working Paper, John Hopkins University.
- * Ordonez G. (2013) “The Asymmetric Effects of Financial Frictions”, *Journal of Political Economy*, 121. 844-895.
- * Tirole J. (1982), “On the Possibility of Speculation under Rational Expectations”, *Econometrica*, 50, 1163-1181.

Lectures 15-20 – Evidence on the Effects of Finance on Growth and Crises. Shadow Banking

- Knoop, T. (2008). “*Modern Financial Macroeconomics: Panics, Crashes and Crises*” Blackwell Publishing. Part III.
- Galindo, A., A. Micco and G. Ordonez (2002). “Financial Liberalization and Growth: Does it pay to join the party?”. *Economia*. 3. 231-261.
- Demirguc-Kunt A. and E. Detragiache (1998). “Financial Liberalization and Financial Fragility”. *World Bank WP 1917*.
- Caprio, G, P. Honohan and J. Stiglitz (2001). “*Financial Liberalization: How Far, how fast?*” Cambridge University Press.

- * Cerra and Saxena (2008), “Growth Dynamics: The Myth of Economic Recovery” *American Economic Review* 98, 439-457.
- * Dell’Ariccia G., Detragiache E and R. Rajan. (2005). “The Real Effect of Banking Crises” CEPR Discussion Papers 5088.
- * Demirguc-Kunt, A and R. Levine (2001). “*Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*” MIT Press.
- * Edison H., M. Klein, L. Ricci and T. Slok (2002). “Capital Account Liberalization and Economic Performance: Survey and Synthesis”, *NBER Working Paper 9100*.

Lectures 21-24 – Students Presentations.

Financial Crises Experiences and Policy Responses.

- 19th Century Crises

- Cowen, D., R. Sylla, and R. Wright (2006), “The U.S. Panic of 1792: Financial Crisis Management and the Lender of Last Resort” mimeo, NYU.
- Kelley, M. and C. Ó Gráda (2000), “Market Contagion: Evidence from the Panics of 1854 and 1857” *American Economic Review*, 90, 1110-1124.
- Noyes, A. (1894), “The Banks and the Panic of 1893” *Political Science Quarterly*, 9, 12-30.
- Andrew, A. Piatt (1908), “Hoarding in the Panic of 1907,” *Quarterly Journal of Economics*, 22, 497-516.
- Sprague, O. M. W.(1915), “The Crisis of 1914 in the United States.” *American Economic Review*, 499-533.
- Rolnick A. and W. Weber (1984), “The Causes of Free Bank Failures,” *Journal of Monetary Economics*, 14, 267-291.
- * Swanson, WW (1908a), “The Crisis of 1860 and the First Issue of Clearing-House Certificates: I” *Journal of Political Economy*, 16, 65-75.
 - * Swanson, WW (1908b), “The Crisis of 1860 and the First Issue of Clearing-House Certificates: II” *Journal of Political Economy*, 16, 212-226.
 - * Rolnick A. and W. Weber (1983), “New Evidence on the Free Banking Era,” *American Economic Review*, 73, 1080-1091.

- Great Depression

- Bernanke B. (1983), “Non-monetary Effects of the Financial Crisis in the Propagation of the Great Depression,” *American Economic Review*, 73, 257-76.
- Calomiris, C. and J. Mason. (2003). “Fundamentals, Panics, and Bank Distress During the Depression.” *American Economic Review*, 93, 1615-1646.

Richardson, G. (2005), "Bank Distress during the Great Contraction, 1929 to 1933, New Evidence from the Archives of the Board of Governors," mimeo, UC Irvine.

Mitchener, K. (2005). "Bank Supervision, Regulation, and Instability During the Great Depression" *Journal of Economic History*, 65, 152-85.

* Grossman, R. (1994) "The Shoe That Didn't Drop: Explaining Banking Stability During the Great Depression," *Journal of Economic History* 54, 654-682.

* Temin, P. (1989). "*Lessons from the Great Depression*". Cambridge, MA: MIT Press.

* Bernanke, B. and J. Harold (1991). "*The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison*" In R. Glenn Hubbard, ed., *Financial Markets and Financial Crises*. University of Chicago Press, 33-68.

* Wicker, E. (1980). "A Reconsideration of the Causes of the Banking Panic of 1930." *Journal of Economic History*, 40, 571-83.

* Wicker, E. (1996). "*The Banking Panics of the Great Depression*". Cambridge: Cambridge University Press, 1996.

- **Chile and Mexico (80s)**

Bergoing, R., T. Kehoe, P. Kehoe and R. Soto (2002). "A Decade Lost and Found: Mexico and Chile in the 1980s" *Review of Economic Dynamics*, 5, 166–205.

- **Japan (90s)**

Caballero, R; T. Hoshi and A. Kashyap (2008), "Zombie Lending and Depressed Restructuring in Japan", *American Economic Review*, 98, 1943-1977.

Peek, J and E. Rosengren, (2000), "Collateral Damage: Effects of the Japanese Bank Crisis on Real Activity in the United States," *American Economic Review*, 90, 30–45.

The Recent Crisis and Policy Responses.

Gorton, G. (2009). "*Slapped by the Invisible Hand: The Panic of 2007*". Oxford University Press.

Taylor, J. (2009). "The Financial Crisis and the Policy Responses: An Empirical Analysis of what went wrong". NBER Working Paper 14631.

Timelines of Policy Responses to the Global Financial Crisis. Federal Reserve Bank of New York. http://www.ny.frb.org/research/global_economy/policyresponses.html

Gorton G. and Metrick (2009), "Securitized Banking and the Run on Repo". mimeo, Yale.

Krishnamurthy A. (2009), "How Debt Markets Have Malfunctioned in the Crisis". mimeo, NWU.

* Covitz, D., N. Liang, and G. Suarez (2009), "The Evolution of a Financial Crisis: Runs in the Asset-Backed Commercial Paper Market" Federal Reserve System, WP. 2009-36.

- * Carey, M., R. Correa, and J. Kotter (2009), "Revenge of the Steamroller: ABCP as a Window on Risk Choices" mimeo, Federal Reserve System.
- * Coffey, N., W. Hrungr, and A. Sarkar (2009), "Capital Constraints, Counterparty Risk and Deviations from Covered Interest Rate Parity," mimeo, NY Federal Reserve Bank.
- * Gorton, G. (2009), "Information, Liquidity, and the (Ongoing) Panic of 2007," *American Economic Review, Papers and Proceedings*, 99, 567-572.
- * Stanton, Richard and Nancy Wallace (2009), "The Bear's Lair: Indexed Credit Default Swaps and the Subprime Mortgage Crisis" mimeo, Berkeley.