

**Macro-Modelling
Economics 244, Spring 2013
University of Pennsylvania**

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General Information

Lecture Times: Mondays and Wednesdays, 10:30am - 12:00pm

Lecture Location: MUSB 101

Office Hours and Availability: Tuesdays 9:30am - 11:30am (in my office), or by appointment.

Teaching Assistant: The TA for the course is Vesa-Heikki Soini. His e-mail address is soini@sas.upenn.edu. His office hours are on Thursdays 2:00pm - 4:00pm in 417 McNeil.

Course Website: Course information is available through Blackboard. You are encouraged to check Blackboard regularly. From time to time I will post relevant papers for you to read. Some of these papers will be more difficult than the material we cover in class.

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 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 spur growth and development? Do they trigger and spread painful crises? Which policies can improve the positive effects of financial markets, and reduce their negative ones?

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 the financial market is 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 (8 lectures): We will cover theoretical explanations (micro foundations) about why financial intermediation exists and what makes financial institutions and financial markets so special. 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.

Second Section (6 lectures): We will review the role of financial markets in macroeconomic models, the theoretical arguments about why financial markets are important to spur economic growth, why they are so fragile and why financial crises can both generate economic recessions and amplify real activity problems.

Third Section (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 (4 lectures): At the start of each class, I will provide an overview of the questions, empirical techniques and the relevant literature. This will then be followed by students presenting short summaries of a particular reading from the syllabus and the class discussing the paper together. Topics will include:

- Financial Development, Financial Liberalization and Economic Growth,
- Bubbles, Panics and Crashes,
- History of Financial Crises,
- Policy Responses to Financial Crises,
- The Recent Financial Crisis.

Grading and Course Dynamics

Your success in this course is important to me. Therefore I want to be available for your questions as much as possible. It is best to ask your 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.

You can e-mail me to arrange an appointment if my office hours are not convenient. I am also happy to try and answer questions directly over e-mail. However, I encourage you to first meet with the TA, before meeting with me. His contact details and office hours can be found above. For most questions that you have about the course content, he will be able to help you out.

Your feedback during the course is key. If there is something in the course that you think can be improved, please let me know. We are in this together. The higher the quality of the class, the better for all of us.

Finally, I'm planning this class to be very flexible, particularly during the second part. We will be discovering new common interests along the way, so I will try to accommodate them. Hence, 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 from 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 presentations run for two weeks, so we can always reschedule if needed.

The first midterm (Wednesday, February 13th) will cover the material of the first section, the second midterm (Monday, March 18th) will cover the material of the second section and the last midterm (Monday, April 22nd) 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 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.

Finally, the presentation will be about one of the papers listed below under "Students Presentations". We will talk more about this when time comes.

A textbook that I'll refer frequently during the semester 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 for the midterms, however, are my classes and my slides. I will post those slides as we advance, before going through them in class.

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.

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

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

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

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

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

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

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

* 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.

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

* 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.

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

Lectures 9-14 – Financial Markets, Macro Models, Economic Growth and Fluctuations.

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*.

- Kiyotaki N. and J. Moore (1997), “Credit Cycles” *Journal of Political Economy*, 105, 211-248.
- Bernanke, B and M. Gertler (1989). “Agency Costs, Net Worth, and Business Fluctuations”. *American Economic Review* 79, 14—31.
- * Demirguc-Kunt, A and R. Levine (2001). “*Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*” MIT Press.
- * Demirguc-Kunt, A and R. Levine (2001). “*Financial Structure and Economic Growth: A Cross-Country Comparison of Banks, Markets, and Development*” MIT Press.
- * Kiyotaki N. and J. Moore (1997), “Credit Cycles” *Journal of Political Economy*, 105, 211-248.
- * Tirole J. (1982), “On the Possibility of Speculation under Rational Expectations”, *Econometrica*, 50, 1163-1181.
- * Allen, Morris and Shin (2006), “Beauty Contests and Iterated Expectations in Asset Markets”, *Journal of Financial Studies*, 19, 719-752.
- * Allen F. and D. Gale (1998), “Optimal Financial Crises” *Journal of Finance, Papers and Proceedings*, 53, 1245-1284.
- * 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.

Lectures 15-20 – Evidence on financial liberalization and economic growth.

- 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.
- * Edison H., M. Klein, L. Ricci and T. Slok (2002). “Capital Account Liberalization and Economic Performance: Survey and Synthesis”, *NBER Working Paper 9100*.
- * Tirole J. (1982), “On the Possibility of Speculation under Rational Expectations”, *Econometrica*, 50, 1163-1181.
- * Allen, Morris and Shin (2006), “Beauty Contests and Iterated Expectations in Asset Markets”, *Journal of Financial Studies*, 19, 719-752.
- * Abreu, D and M. Brunnermeier (2003) “Bubbles and Crashes” *Econometrica*, 71, 173-204.

* Gorton G. and L. Huang, (2006) “Bank Panics and the Endogeneity of Central Banking”, *Journal of Monetary Economics*, 53, 1613-1629.

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.