Money and Banking

Economics 4240, Spring 2024
University of Pennsylvania

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General Information

Lecture Times: Tuesdays and Thursdays, 10:15am - 11:45am

Lecture Location: CHEM B13

Office Hours and Availability: Tuesdays 2pm-3pm (in my office), or by appointment.

Teaching Assistant: The TA for the course is Juan Cruz Llambias. His e-mail address is juanll@sas.upenn.edu. Recitations: TBD. Office hours: TBD

Course Website: Course information is available in Canvas, which I recommend checking 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 (Intermediate Micro), Econ 102 (Intermediate Macro), Math 104. Calculus 1, and Math 114 or Math 115.

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. https://economics.sas.upenn.edu/about/information-faculty

Course Description

The global financial crisis that started in 2007 put most developed (and some underdeveloped) countries on the brinks of a collapse, exposing 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?

In history, financial crises had banking (regulated and non-regulated) and their role as private money providers at the epicenter of the problems and the forefront of these questions. How to regulate banks? How to improve their provision of money? What about new types of money (such as cryptocurrencies)? What is their role for monetary economics and financial fragility?

This is not a class on monetary economics (standard theories of how central banks provide *public money* –the dollar – and maintains its value and stability). Instead, we focus on banking (old and new) and their provision of *private money* (checks, repos, stablecoins, etc.). Then our goal will be to answer questions such as why financial intermediation exists, why financial markets are so different than other markets and what is so special about financial organizations. In answering these questions, we will focus on their role on providing money and why such role may lead to financial fragility, which calls to another function of central banks, besides monetary policy: financial stability.

Structure of the Course

The course will be divided into four sections.

<u>First Section – Micro foundations (11 lectures):</u> We will cover theoretical explanations (micro foundations) about why financial intermediation exists and what makes financial institutions and financial markets so special. We will focus on the provision of private money, linking closely money and banking! 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.

<u>Second Section – Macroeconomics (5 lectures):</u> 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.

<u>Third Section – Evidence (5 lectures):</u> 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.

<u>Fourth Section – Cases of Financial Crises (4 lectures):</u> 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,
- Financial Crises in Other Countries.
- The Most Recent Financial Crisis.
- Digital Currencies.

Grading and Course Dynamics

Your success in this course is very important to me. Therefore, I want to be available to answer questions as much as possible. 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 interact. 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 solve any concern directly over e-mail). I also encourage you to meet with the TA if you have questions. He will be an excellent source of knowledge and information. His contact details and office hours are detailed in the first page.

Your feedback during the 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 and more interesting it will be for us all. Finally, I would like this class to be very flexible, particularly during the second part. We will be discovering new common interests along the way, and 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 the absolute value of your worst exam grade. Hence, if you are absent in one of the midterms, I can drop those points from consideration. This does not count for the homework and presentations though. If you do not present or do not hand in the homework, I will not drop those points from the total grade. The rationale for this policy is that, since the homework and the presentations run for two weeks, you should always have enough time to complete the homework and we should always be able to find a suitable time for you to present.

The **first midterm** (February 20) will cover the material of the first section (not all of it though as I want to grade the exam before the "drop period" ends February 27, and then I have to take it before we finish the material on the first part), the **second midterm** (March 28) will cover the material of the second section and the **last midterm** (April 30) will focus mostly on the last two sections, but will be more comprehensive, potentially covering material of the first two sections as well. The **homework** (due on April 15) 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 about 10 days to complete the homework.

Finally, the **presentation** will be most likely in group and about a recent academic paper about different related topics. Presentations will be scheduled during class on April 16, 18, 23 and 25. We will talk more about this when time comes.

<u>*Note:*</u> We will make every effort to have the tests and the homework graded and handed back in one 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.

Reading Material

The most important material to prepare for the midterms are my classes, my slides, and practice problems I will post opportunely.

For the first section I will also provide a set of notes that are the basis of a forthcoming book I am writing, called "*Fruits and Roots of Financial Intermediation*". These notes follow closely (and in more detail) the main content of the slides, ***and are not to be shared outside the class***. Additional books that you may want to consult for own curiosity (not required for this class) are Knoop, Todd (2008) *"Modern Financial Macroeconomics: Panics, Crashes and Crises"* and Freixas, Xavier and Rochet, Jean-Charles (2008) *"Microeconomic of Banking."* There are copies available at the library.

For the second and third sections, I plan to follow closely my own book with Gary Gorton "*Macroeconomic and Financial Crises*" (Princeton University Press, 2023). There are also copies available at the library.

Most of the complementary reading is based on papers, which are listed below.

Reading List

An asterisk (*) denotes additional (not required) reading if you want to delve deeper on a particular issue.

11 Lectures - Foundations of Financial Intermediation.

Ordonez, G (in progress) "*Roots and Fruits 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.

* 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 (2017), "Banks as Secret Keepers", *American Economic Review.* 107, 1005-1029.

* 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.

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

* 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.

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

* 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.

5 Lectures– Financial Markets in Macro Models. Growth and Fluctuations.

Gorton, G. and G. Ordonez (2023). *“Macroeconomics and Financial Crises: Bound Together by Information Dynamics”* Princeton University Press. Chapters 1 - 4.

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.

Levine, R. (1997). “Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature.*

* 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.

* 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.

* Knoop, T. (2008). *“Modern Financial Macroeconomics: Panics, Crashes and Crises”* Blackwell Publishing. Part II.

* Ordonez G. (2013) “The Asymmetric Effects of Financial Frictions”, *Journal of Political Economy*, 121. 844-895.

5 Lectures– Evidence on the Effects of Finance on Growth and Crises.

Gorton, G. and G. Ordonez (2023). *“Macroeconomics and Financial Crises: Bound Together by Information Dynamics”* Princeton University Press. Chapter 1.

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. Slock (2002). “Capital Account Liberalization and Economic Performance: Survey and Synthesis”, *NBER Working Paper 9100.*

* Knoop, T. (2008). *“Modern Financial Macroeconomics: Panics, Crashes and Crises”* Blackwell Publishing. Part III.