

## **Economics 4230: Macro-Modeling**

### **Fall 2023, University of Pennsylvania**

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**Lecture Times:** Monday and Wednesday 1:45-3:15pm.

**Lecture Location:** MCNB 395

**Office Hours:** Tuesdays 11:00am-noon and by appointment.

**Teaching Assistant:** The TA for the course is Luigi Falasconi. His e-mail address is [luigif@sas.upenn.edu](mailto:luigif@sas.upenn.edu). He will have office hours on Thursday 3:00-5:00 PM in PCPE 208.

**Course Website:** Course information is available in Canvas. Canvas is the official channel I will use to make announcements, post slides, problem sets, exercises, and relevant papers for you to read.

**Course Description:** This is a one-semester course in *macro-finance*. We will study the role of financial markets, financial intermediaries, financial frictions, and asset prices for the aggregate economy. We will study the causes of financial crises and what policies can do to avoid these crises or mitigate their effects. We will study the role of government debt and monetary policy in financial markets and study the link between financial and sovereign debt crises. For example, we will study how the prospects of a bailout induces banks and financial intermediaries to take on more risk and how ex-ante regulation can prevent this.

**Pre-requisites:**

- Intermediate Micro and Intermediate Macro: Econ 2100 and Econ 2200.
- Calculus: Math 1070-1080 or Math 1400-1410.

**Grading:** Your grade will be based on:

- **3 problem sets (1/8 of total grade each)** You are allowed (actually encouraged) to work with other students on the problem sets but each must submit their own copy. Problem sets will consist of: i) answering theoretical questions, ii) data work, iii) reading articles and prepare summary / answer questions about the articles. You will have about 10 days to finish each problem set.
- **2 in-class midterms (1/6 of total grade each).** These are closed book exams and will be scheduled during class time.
- **1 group class presentation (1/8 of total grade).** We will form groups of students that will present a research paper in the last one/two classes (depending on enrollment) of the course. The research papers study a financial or a sovereign debt crisis. The goal of the presentation is to summarize the content of the research paper and connect it to the tools and concepts that we developed throughout the course. Each group must prepare slides for their presentation. The slides will be shared on the class page on canvas. The presentations are part of the material you are responsible for the final take-home exam.
- **1 take-home exam (1/6 of total grade).** This is an open book exam and you are not allowed to work with your classmates. You will have 36 hours to finish the take-home final exam.

*Tentative* schedule for in-class midterms:

- Midterm 1: October 4 or 9
- Midterm 2: November 6 or 8

The take-home exam will be assigned on December 14 and will be due on December 15.

If a student has a valid excuse to miss one of the midterms, the missed event may be made up in one of two ways that are to be decided by the instructor:

- the student will take a make-up version for midterm; or
- the student will be excused from the missed event, and the weight of that event in the overall course grade will be reassigned to the average of the other midterms.

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

**Course Policies:** The Department of Economics maintains a common set of policies that apply to all classes. 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/course-information/guidelines/policies>

### **Reading List**

The slides and lecture notes I will post on canvas are the required material for the course. There is no required textbook.

During the class, I will make connections to current advances in research and to policy issues. The following readings are complementary to my lectures. I will indicate during the course of the class which are required (and I will likely add more). I will also post articles from Financial Times, The Economist, The Wall Street Journal related to the topics we are covering.

#### **1. Role of financial intermediation and financial frictions**

- 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 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.
- Townsend, R. (1979), "Optimal Contracts and Competitive Markets with Costly State Verification", *Journal of Economic Theory*, 21, 265-293.
- Chari, Varadarajan V. "A Macroeconomist's Wish List of Financial Data." In *Risk Topography: Systemic Risk and Macro Modeling*, pp. 215-232. University of Chicago Press, 2012.

- Gilchrist, Simon, and Egon Zakrajšek. "Credit spreads and business cycle fluctuations." *American economic review* 102, no. 4 (2012): 1692-1720.
- Kiyotaki N. and J. Moore (1997), "Credit Cycles" *Journal of Political Economy*, 105, 211-248.
- Gertler, Mark, Nobuhiro Kiyotaki, and Albert Queralto. "Financial crises, bank risk exposure and government financial policy." *Journal of Monetary Economics* 59 (2012): S17-S34.

## **2. Bailouts and financial regulation**

- Kareken, John H., and Neil Wallace. "Deposit insurance and bank regulation: A partial-equilibrium exposition." *Journal of business* (1978): 413-438.
- Dovis, Alessandro, and Rishabh Kirpalani. "Reputation, bailouts, and interest rate spread dynamics." *American Economic Journal: Macroeconomics* 14, no. 3 (2022): 411-449.
- Chari, Varadarajan V., and Patrick J. Kehoe. "Bailouts, time inconsistency, and optimal regulation: A macroeconomic view." *American Economic Review* 106, no. 9 (2016): 2458-2493.
- Farhi, Emmanuel, and Jean Tirole. "Collective moral hazard, maturity mismatch, and systemic bailouts." *American Economic Review* 102, no. 1 (2012): 60-93.
- Philippon, Thomas, and Olivier Wang. "Let the worst one fail: a credible solution to the too-big-to-fail conundrum." *The Quarterly Journal of Economics* 138, no. 2 (2023): 1233-1271.
- Di Tella, Sebastian, and Pablo Kurlat. "Why are banks exposed to monetary policy?." *American Economic Journal: Macroeconomics* 13, no. 4 (2021): 295-340.
- Farhi, Emmanuel, and Jean Tirole. "Leverage and the central banker's put." *The American Economic Review* (2009): 589-593.

## **3. Government Debt, Default and the Interaction with Financial Markets**

- Reinhart, Carmen, and Kenneth Rogoff. 2014. "This Time Is Different: A Panoramic View of Eight Centuries of Financial Crises." *Annals of Economics and Finance* 15 (2). Cambridge: Harvard University: 1065-1188.

- Reinhart, Carmen M, and Kenneth Rogoff. 2011. "From Financial Crash to Debt Crisis." *American Economic Review* 101: 1676-1706.
- Bocola, Luigi. "The pass-through of sovereign risk." *Journal of Political Economy* 124, no. 4 (2016): 879-926.
- Gilchrist, Simon, and Benoit Mojon. 2018. "Credit Risk in the Euro Area." *Economic Journal* 128 (608): 118–58.
- Chari, V. V., Alessandro Dovis, and Patrick J. Kehoe. "On the optimality of financial repression." *Journal of Political Economy* 128, no. 2 (2020): 710-739.
- Brunnermeier, M, L Garicano, P Lane, M Pagano, R Reis, T Santos, D Thesmar, S Van Nieuwerburgh, and D Vayanos (2016a), "The sovereign-bank diabolic loop and ESBies", *American Economic Review Papers and Proceedings*, 106 (5), 508-512.

#### **4. Monetary Policy and Sustainability of Government Debt**

- Kehoe, Timothy J., Juan Pablo Nicolini, and Thomas J. Sargent. A Framework for Studying the Monetary and Fiscal History of Latin America, 1960–2017. No. 607. Federal Reserve Bank of Minneapolis, 2020.
- "Monetary and Fiscal History of Latin America" project at the Becker-Friedman Institute: <https://mafhol.uchicago.edu/>
- Aguiar, Mark, Manuel Amador, Emmanuel Farhi, and Gita Gopinath. Crisis and commitment: Inflation credibility and the vulnerability to sovereign debt crises. No. w19516. National Bureau of Economic Research, 2013.
- Krishnamurthy, Arvind, and Annette Vissing-Jorgensen. "The aggregate demand for treasury debt." *Journal of Political Economy* 120, no. 2 (2012): 233-267.
- Reis, Ricardo. "Debt revenue and the sustainability of public debt." *Journal of Economic Perspectives* 36, no. 4 (2022): 103-124.

#### **Possible papers and episodes for group in-class presentations:**

Some of the research papers listed below are more technical than the material we covered in class. You will not be required to understand all such technical details but you must understand and convey the key message of the paper and put it in context to what you learned in class.

- Great Depression
  - Calomiris, C. and J. Mason. (2003). "Fundamentals, Panics, and Bank Distress During the Depression." *American Economic Review*, 93, 1615-1646.
  - Bernanke B. (1983), "Non-monetary Effects of the Financial Crisis in the Propagation of the Great Depression," *American Economic Review*, 73, 257-76.
- Latin American Crisis 1984
  - 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)
- Mexican crisis 1994-95
  - Cole, Harold L., and Timothy J. Kehoe. "A self-fulfilling model of Mexico's 1994–1995 debt crisis." *Journal of international Economics* 41.3 (1996): 309-330.
- European debt crisis
  - Bulow Jeremy, and Kenneth Rogoff. 2015. The modern Greek tragedy. Vox-EU. <http://voxeu.org/article/modern-greek-tragedy>
  - Fernández-Villaverde, Jesús, Luis Garicano, and Tano Santos. 2013. "Political Credit Cycles: The Case of the Eurozone." *Journal of Economic Perspectives*, 27(3): 145-66.
- 2008 crisis and its aftermath
  - Kelly, Bryan, Hanno Lustig, and Stijn Van Nieuwerburgh. "Too-systemic-to-fail: What option markets imply about sector-wide government guarantees." *American Economic Review* 106, no. 6 (2016): 1278-1319.
  - Veronesi, Pietro, and Luigi Zingales. 2010. "Paulson's Gift." *Journal of Financial Economics* 97 (3): 339–68.
  - Chirinko, Robert, Ryan Chiu, and Shaina Henderson. 2019. "What Went Wrong? The Puerto Rican Debt Crisis, the "Treasury Put," and the Failure of Market Discipline." CESifo Working Paper 7558.
- Huarong-Evergrande-Country Garden