

Draft: 1/5/2024

**Economics 1759
Spring 2024
The Financial System and the Central Bank**

Meeting Time

Mondays and Wednesdays, 12:00-1:15pm

Contact details

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Office hours: by appointment, contact Ann Richards, ann_richards@harvard.edu

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Course Overview

This course analyzes the modern financial system, with particular focus on the multiple roles of the central bank: as monetary policymaker, lender of last resort, and regulator. The course seeks to ground this subject matter in a sophisticated understanding of the theory and empirics of financial markets and banking. As such, many of the readings are recent journal articles and working papers. However, while a relatively high level of economic reasoning is involved, I will do my best to keep the mathematical technicalities to a minimum.

(Soft) Prerequisites

Students may find this course easier if they have previously taken either 1723 (Capital Markets) or 1745 (Corporate Finance). Nevertheless, it is sufficiently self-contained that, with some effort, it should be accessible to those who have not taken either of these courses.

Sections

To be arranged.

Website

All readings, lecture notes, cases, and problem sets will be available on the course website.

Requirements and grading

There will be seven homework assignments: one problem set; four “referee reports” critiquing a paper; and two case-study write-ups. The assignments will collectively account for 60% of the course grade, though I will drop the lowest referee-report score when computing the homework average. You may confer in groups of up to three on the assignments, but you must acknowledge the help of others, and everybody must hand in their own individual work. The final exam will account for the remaining 40% of the grade. Finally, I would like to strongly encourage class participation, and will adjust grades upwards—potentially quite generously—for those who participate well. Of course, quality of comments and questions is more important than quantity. *As an experiment, this year I will guarantee a minimum grade of A- to students who complete all assignments, attend (almost) all class sessions, and participate in class. Given this set-up, there is no pass/fail option.*

Writing requirement

This course satisfies the departmental writing requirement, based on the referee reports, which should be about 4-5 pages each.

Daily Schedule

Jan 22	Class 1	Course Intro and Overview
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Module I: Some Theory and Some History

Jan 24	Class 2	Debt Overhang
Jan 29	Class 3	Asymmetric Information and the Pecking Order
Jan 31	Class 4	Liquidity Provision and Bank Runs
Feb 5	Class 5	Banks and Monetary Policy [PS1 DUE]
Feb 7	Class 6	Introduction to Market Efficiency
Feb 12	Class 7	Case: Strategic Capital Management [CW1 DUE]
Feb 14	Class 8	Limits of Arbitrage and Fire Sales
Feb 19	NO CLASS: PRESIDENT'S DAY	
Feb 21	Class 9	The Great Depression [RR1 DUE]

Module II: Financial Crises and the Central Bank as Lender of Last Resort

Feb 26	Class 10	Structured Finance and the Ratings Agencies
Feb 28	Class 11	Strains in Credit Markets 2008
Mar 4	Class 12	Case: JP Morgan and Bear Stearns [CW2 DUE]
Mar 6	Class 13	The Collapse of Bank Lending 2008-09
Mar 11	NO CLASS: SPRING BREAK	
Mar 13	NO CLASS: SPRING BREAK	
Mar 18	Class 14	TARP and Stress Tests
Mar 20	Class 15	The Treasury Market in Spring 2020 [RR2 DUE]
Mar 25	Class 16	Pandemic Credit-Market Facilities
Mar 27	Class 17	The Run on Silicon Valley Bank

Module III: Monetary Policy in the Post-GFC Era

Apr 1	Class 18	Quantitative Easing
Apr 3	Class 19	The Liability Side of the Fed's Balance Sheet
Apr 8	Class 20	Monetary Policy and Credit-Market Sentiment [RR3 DUE]
Apr 10	Class 21	The Return of Inflation

Module IV: Financial Regulation

Apr 15	Class 22	Capital Regulation
Apr 17	Class 23	Liquidity Regulation Post SVB [RR4 DUE]
Apr 22	Class 24	Central Bank Digital Currency
Apr 24	Class 25	Course Review and Wrap-Up

List of Assignments

Problem Set 1 (due Feb 5)

Case Writeup 1 (due Feb 12)

Strategic Capital Management

Referee Report 1 (due Feb 21)

Bernanke, Ben S. (1983) “Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression,” American Economic Review 73: 257-76; also

Benmelech, Efraim, Carola Frydman and Dimitris Papanikolaou (2019), “Financial Frictions and Employment during the Great Depression,” Journal of Financial Economics 133 (3): 541-563.

Case Writeup 2 (due Mar 4)

JP Morgan and Bear Stearns

Referee Report 2 (due Mar 20)

Vissing-Jorgensen, Annette (2021), “The Treasury Market in Spring 2020 and the Response of the Federal Reserve,” Journal of Monetary Economics 124: 19-47.

Referee Report 3 (due Apr 8)

Greenwood, Robin, Samuel G. Hanson, Andrei Shleifer, and Jakob A. Sørensen (2022) “Predictable Financial Crises,” Journal of Finance 77 (2): 863–921.

Referee Report 4 (due Apr 17)

G30 Working Group on the 2023 Banking Crisis (2024), “Bank Failures and Contagion: Lender of Last Resort, Liquidity and Risk Management,” special report.

Readings

Readings with a (*) will get primary emphasis in class.

In addition to the papers on the reading list, you are strongly encouraged to read Matt Levine's Bloomberg column Money Stuff every day. You can subscribe for free at this link:

<https://www.bloomberg.com/account/newsletters/money-stuff>

1. Course Introduction and Overview

*Bernanke, Ben S. (2013), "A Century of US Central Banking: Goals, Frameworks, Accountability." Journal of Economic Perspectives, 27(4): 3-16.

Module I: Some Theory and Some History

2. Debt Overhang

*Myers, Stewart C. (1977), "Determinants of Corporate Borrowing," Journal of Financial Economics 5: 147-175.

3. Asymmetric Information and the Pecking Order

*Myers, Stewart C. and N. Majluf (1984), "Corporate Financing and Investment Decisions when Firms Have Information that Investors Do Not Have," Journal of Financial Economics 13: 187-222.

Campello, Murillo, John Graham and Campbell Harvey (2010), "The Real Effects of Financial Constraints: Evidence From a Financial Crisis", Journal of Financial Economics, 97, 470–487.

4. Liquidity Provision and Bank Runs

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

Gorton, Gary and George Pennacchi (1990), "Financial Intermediaries and Liquidity Creation," Journal of Finance 45: 49-71.

Kashyap, Anil K, Raghuram Rajan and Jeremy C. Stein (2002), "Banks as Liquidity Providers: An Explanation for the Co-Existence of Lending and Deposit-Taking," Journal of Finance 57: 33-73.

Gatev, E., and Strahan, P. E. (2006), "Banks' Advantage in Hedging Liquidity Risk: Theory and Evidence from the Commercial Paper Market," Journal of Finance, 61: 867–892.

5. Banks and Monetary Policy

*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 90: 407-428.

*Hanson, Samuel G. and Jeremy C. Stein (2015), "Monetary Policy and Long-Term Real Rates," Journal of Financial Economics, 115 (3): 429-448.

*Drechsler, Itamar, Alexi Savov and Philipp Schnabl (2017), "The Deposits Channel of Monetary Policy," Quarterly Journal of Economics 132 (4): 1819-1876,

Jiménez, G., Ongena, S., Peydró-Alcalde, J. L., & Saurina, J. (2014): “Hazardous Times for Monetary Policy: What Do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk?” Econometrica 102(5): 2301-2326.

Jimenez, G., Ongena, S., Peydro, J.-L., and Saurina, J. (2012): “Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications,” American Economic Review 102: 2301–2326.

Bernanke, Ben S. and Mark Gertler (1995), “Inside the Black Box: The Credit Channel of Monetary Policy Transmission,” Journal of Economic Perspectives 9: 27-48.

6. Introduction to Market Efficiency

*Barberis, Nicholas and Richard Thaler (2003), “A Survey of Behavioral Finance,” in Handbook of the Economics of Finance, edited by George Constantinides, Milt Harris and Rene Stulz. Amsterdam: North-Holland. Vol. 1B, Chapter 18, 1053-1128.

*Lamont, Owen and Richard Thaler (2003), “Anomalies: The Law of One Price in Financial Markets,” Journal of Economic Perspectives 17: 191-202.

7. Case: Strategic Capital Management

*“Strategic Capital Management, LLC (A)”, HBS Case 9-202-024, April 2002. [CASE WRITE-UP # 1]

8. The Limits of Arbitrage and Fire Sales

*Shleifer, Andrei and Robert W. Vishny (1997), “The Limits of Arbitrage,” Journal of Finance 52: 35-55.

Coval, Joshua and Erik Stafford (2007), “Asset Fire Sales (and Purchases) in Equity Markets,” Journal of Financial Economics 86.

Shleifer, A., & Vishny, R. (2011), “Fire Sales in Finance and Macroeconomics”, Journal of Economic Perspectives (25): 29–48.

9. The Great Depression

*Bernanke, Ben S. (1983) “Nonmonetary Effects of the Financial Crisis in the Propagation of the Great Depression,” American Economic Review 73: 257-76. [REFEREE REPORT # 1]

*Bernanke, Ben S. (2002), “Remarks at the Conference to Honor Milton Friedman on his 90th Birthday,” Speech delivered November 8, 2002.

*Benmelech, Efraim, Carola Frydman and Dimitris Papanikolaou (2019), “Financial Frictions and Employment during the Great Depression,” Journal of Financial Economics 133 (3): 541-563. [REFEREE REPORT # 1]

Bernanke, Ben S. (1995), “The Macroeconomics of the Great Depression: A Comparative Approach,” Journal of Money, Credit and Banking 27: 1-28.

Ziebarth, Nicolas L. (2013), “Identifying the Effects of Bank Failures from a Natural Experiment in Mississippi During the Great Depression,” American Economic Journal: Macroeconomics 5: 81-101.

Module II: Financial Crises and the Central Bank as Lender of Last Resort

10. Structured Finance and the Ratings Agencies

*Coval, Joshua, Jakub Jurek, and Erik Stafford (2009), “Economic Catastrophe Bonds,” American Economic Review, 99: 628-666.

*Coval, Joshua, Jakub Jurek, and Erik Stafford (2009), “The Economics of Structured Finance,” Journal of Economic Perspectives, 23: 3-25.

11. Strains in Credit Markets 2008

*Covitz, Daniel M., Nellie Liang and Gustavo Suarez (2013), “The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market,” Journal of Finance, 68: 815-848.

*Acharya, Viral, Philipp Schnabl, and Gustavo Suarez (2013), “Securitization without Risk Transfer,” Journal of Financial Economics, 107: 515-536.

Brunnermeier, Markus (2009), “Deciphering the Liquidity and Credit Crunch 2007-08,” Journal of Economic Perspectives 23: 77-100.

Gorton, Gary, and Andrew Metrick (2013), “The Federal Reserve and Panic Prevention: The Roles of Financial Regulation and Lender of Last Resort,” Journal of Economic Perspectives, 27(4): 45-64.

12. JP Morgan and Bear Stearns

*“The Tip of the Iceberg: JP Morgan Chase and Bear Stearns (A),” Harvard Business School Case 9-309-001. [CASE WRITEUP # 2]

*Duffie, Darrell (2010), “The Failure Mechanics of Dealer Banks,” Journal of Economic Perspectives.

13. The Collapse of Bank Lending 2008-09

*Ivashina, Victoria and David Scharfstein (2010), “Bank Lending During the Financial Crisis of 2008,” Journal of Financial Economics, 97: 319-338.

*Gabriel Chodorow-Reich (2014), “The Employment Effects of Credit Market Disruptions: Firm-level Evidence from the 2008-9 Financial Crisis,” Quarterly Journal of Economics, 129: 1-59.

Greenlaw, David, Jan Hatzius, Anil Kashyap and Hyun Shin (2008), “Leveraged Losses: Lessons from the Mortgage Market Meltdown,” US Monetary Policy Forum Report No. 2, 2008.

14. TARP and Stress Tests

*Veronesi, Pietro and Luigi Zingales (2010), “Paulson’s Gift,” Journal of Financial Economics, 97: 339-368.

Ashcraft, Adam, Allan Malz and Zoltan Pozsar, (2012), “The Federal Reserve’s Term Asset-Backed Securities Loan Facility,” Economic Policy Review, Federal Reserve Bank of New York, Nov: 29-66.

Board of Governors of the Federal Reserve System (2009), “The Supervisory Capital Assessment Program: Overview of Results,” white paper of May 7.

15. The Treasury Market in Spring 2020

*Vissing-Jorgensen, Annette (2021), “The Treasury Market in Spring 2020 and the Response of the Federal Reserve,” Journal of Monetary Economics 124: 19-47. [REFeree REPORT # 2]

*G30 Working Group on Treasury Market Liquidity (2021), “U.S. Treasury Markets: Steps Toward Increased Resilience,” special report.

Duffie, Darrell (2023), “Resilience Redux in the US Treasury Market,” Jackson Hole Symposium

16. Pandemic Credit-Market Facilities

*Falato, Antonio, Itay Goldstein, and Ali Hortacsu (2021), “Financial Fragility in the COVID-19 Crisis: The Case of Investment Funds in Corporate Bond Markets,” Journal of Monetary Economics 123: 35-52.

*Hanson, Samuel G., Jeremy C. Stein, Adi Sunderam, and Eric Zwick (2020), “Business Credit Programs in the Pandemic Era,” Brookings Papers on Economic Activity, Fall: 3-60.

17. The Run on Silicon Valley Bank

*Jiang, Erica, Gregor Matvos, Tomasz Piskorski and Amit Seru (2023) “Monetary Tightening and U.S. Bank Fragility in 2023: Mark-to-Market Losses and Uninsured Depositor Runs?” working paper.

*Drechsler Itamar, Alexi Savov, Philipp Schnabl, and Olivier Wang (2023), “Banking on Uninsured Deposits,” working paper.

Module III: Monetary Policy in the Post-GFC Era

18. Quantitative Easing

*Bernanke, Ben S. (2020), “The New Tools of Monetary Policy,” American Economic Review 110 (4): 943-983.

*Ma, Yueran (2019), “Nonfinancial Firms as Cross-Market Arbitrageurs,” Journal of Finance 74 (6): 3041-3087.

Greenwood, Robin and Dimitri Vayanos (2014), “Bond Supply and Excess Bond Returns,” Review of Financial Studies 27 (3): 663-713.

Krishnamurthy, Arvind, and Annette Vissing-Jorgensen (2012), “The Aggregate Demand for Treasury Debt,” Journal of Political Economy, 120(2): 233-267.

19. The Liability Side of the Fed’s Balance Sheet

*Greenwood, Robin, Samuel Hanson, and Jeremy C. Stein (2016), “The Federal Reserve’s Balance Sheet as a Financial-Stability Tool,” in Designing Resilient Monetary Policy Frameworks for the Future, Jackson Hole Economic Policy Symposium, Federal Reserve Bank of Kansas City.

*Afonso, Gara, Darrell Duffie, Lorenzo Rigon and Hyun Song Shin (2022), “How Abundant Are Reserves? Evidence from the Wholesale Payment System,” Federal Reserve Bank of New York Staff Reports # 1040.

Afonso, Gara, Marco Cipriani, Adam Copeland, Anna Kovner, Gabriele La Spada, and Antoine Martin (2021), “The Market Events of Mid-September 2019,” Federal Reserve Bank of New York Economic Policy Review, 27 (2).

Greenwood, Robin, Samuel Hanson and Jeremy C. Stein (2015), “A Comparative-Advantage Approach to Government Debt Maturity,” Journal of Finance, 70 (4): 1683-1722.

Gagnon, Joseph E. and Brian Sack (2014), “Monetary Policy with Abundant Liquidity: A New Operating Framework for the Federal Reserve,” Policy Brief, Peterson Institute for International Economics.

20. Monetary Policy and Credit-Market Sentiment

*Kashyap, Anil, and Jeremy C. Stein (2023), “Monetary Policy When the Central Bank Shapes Financial-Market Sentiment,” Journal of Economic Perspectives 37 (1): 53-76.

*Greenwood, Robin, Samuel G. Hanson, Andrei Shleifer, and Jakob A. Sørensen (2022) “Predictable Financial Crises,” Journal of Finance 77 (2): 863–921. **[REFEREE REPORT # 3]**

*Lopez-Salido, David, Jeremy C. Stein, and Egon Zakrajšek (2017), “Credit-Market Sentiment and the Business Cycle,” Quarterly Journal of Economics 132 (3): 1373–1426.

Greenwood, Robin, and Samuel G. Hanson (2013), “Issuer Quality and Corporate Bond Returns,” Review of Financial Studies 26: 1483–1525.

21. The Return of Inflation [to update]

Ball, Laurence, Daniel Leigh, and Prachi Mishra (2022), “Understanding U.S. Inflation During the COVID Era,” Brookings Papers on Economic Activity, forthcoming.

Module IV: Financial Regulation

22. Capital Regulation

*Hanson, Samuel, Anil K Kashyap, and Jeremy C. Stein (2011), “A Macroprudential Approach to Financial Regulation,” Journal of Economic Perspectives 25(1): 3-28.

*Greenwood, Robin, Samuel G. Hanson, Jeremy C. Stein and Adi Sunderam (2017), “Strengthening and Streamlining Bank Capital Regulation,” Brookings Papers on Economic Activity Fall: 479-565.

Barr, Michael S. (2023), “Holistic Capital Review,” speech at Bipartisan Policy Center, Washington D.C., July 10.

23. Liquidity Regulation Post SVB (to update)

*G30 Working Group on the 2023 Banking Crisis (2024), “Bank Failures and Contagion: Lender of Last Resort, Liquidity and Risk Management,” special report. **[REFEREE REPORT # 4]**

24. Central Bank Digital Currency (readings TBD)