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Columbia University
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Money and Banking (ECON UN3265)

Meeting time: Tu, Th 2.40 - 3.55
Meeting place: Mathematics 207

Office address: IAB 1002
Office hours: Th 11.30 - 12.45 and other times by appointment

Course Objective

The modern banking and financial system is highly interconnected and characterized by many different types of players and institutions as well as a high pace of innovations. This course provides a comprehensive view on the evolution of banking, from the eighteen century to the most recent financial innovations in wholesale banking and interbank funding markets and discusses two main themes.

The first central theme will be that the fundamental principle of money and banking is the same despite all financial innovations and the evolution of institutions and markets in the last two hundred or so years. The second and reoccurring theme is about the causes of a financial crisis. An opinion often articulated in popular and policy discussions is that the financial crisis in 2007/08 and previous financial crises were caused by the misbehavior of bankers.

This course employs different methodologies to approach these two main themes. In order to understand the working of the banking system and its benefits and costs for society a historical perspective and conceptual frameworks are needed. History and economic theory will highlight the (few) fundamental principles of money and banking and can provide a broader context to discuss the question whether a financial crisis is caused by financial greed and excessive risk taking and whether bankers are more entrenched and self-centered than corporate managers, tax advisors, lawyers, politicians or other professionals. A better understanding of these two main themes will have significant implications for the management and internal governance of banks, the use of technology and big data in financial services, policy design, banking and financial regulations as well as interventions during a financial crisis.

The course is divided into two broad sections. Section I discusses money and banking since the 18th century. Section II focuses on policy responses and banks' reactions to regulations since the financial crisis in 2007/08 as well the most recent trends and the impact of technology and big data on banking and finance. In particular, the following topics are covered.

- I.1. Evolution of the Banking System
- I.2. Bank Holding Companies
- I.3. New Forms of Money and Banking
- I.4. The Financial Crisis in 2007/08

- II.1. Central Bank Policies and Interventions
- II.2. New Regulation and Unintended Liquidity Consequences
- II.3. Market Making and Risk Management of Banks
- II.4. Most Recent Trends

Methodologies

The course employs four different methodologies to understand the fundamental as well as specific issues of money and banking. These approaches will provide different but complementary perspectives on the same subject matter.

<u>Institutional Analysis</u>

The institutional analysis focuses on the structural aspects of institutions, markets and products. We will analyze the banking structure during the Free Banking Era and the National Banking Era as well as the modern commercial, investment and wholesale banking industries. We discuss new forms of money and banking and have a detailed description of the players and products in the money market fund (MMF) industry, the syndicated loan markets, the securitization markets for mortgage-backed securities (MBS), asset-backed securities (ABS), asset-backed commercial papers (ABCP), collateralized debt obligations (CDO) and collateralized loans obligations (CLO) as well as the sales and repurchase agreement (repo) markets. These are multi trillion dollar markets each and they constitute fundamental parts of the modern financial system. In order to better understand these markets, we will look at legal documents such as a repo master agreement, a bond issuance prospectus, syndicated loan prospectus, equity initial public offering (IPO) prospectus as well as a private placement memorandum of MBS and synthetic CDOs. Furthermore, we will discuss the most recent trends and the impact of technology on banking and finance. A focus of discussion will be the rapid rise and dominance of Chinese firms in Fintech.

Theoretical Analysis

The theoretical analysis provides the conceptual foundation and interpretation of institutional structures. In other words, it seeks to answer the question about why institutions, markets and products are organized and structured as they are. A common feature of all types of banking whether it is in the Free Banking Era or modern repo markets, is the prevalence of debt-on-debt. Free banknotes are debt contracts which are backed by state bonds which are debts. National banknotes are debt backed by government bonds. Demand deposits are debt contracts which are backed by the bank's portfolio of loans and other debt instruments. MMF shares are (de facto) debts that are backed by a portfolio of other debt securities. Securitized products such as MBS, ABS, CDO, CLO and ABCP are debts that are backed by mortgages, credit card receivables, student loans and corporate loans, respectively, which are all debt securities. Similarly, repo is a debt contract that uses other debt instruments as collateral. We use the concept of information sensitivity as a unifying framework to provide a micro-foundation for the optimality of debt-on-debt and explain the differences between banks and money markets on one hand and capital markets on the other hand as well as the role of rating agencies in debt markets. This theory does not only explains the prevalence of debt-on-debt in banking and funding markets but also what triggers a bank run and financial crisis without assuming moral hazard. The theoretical framework highlights the common structure of money and banking throughout history and provides a better understanding of financial innovations.

Empirical Analysis

Only empirical evidence and data can tell which hypothesis, story and theory is the most relevant explanation of a financial crisis. We will discuss several academic studies of popular opinions. (1) Are there systematic evidences for Wildcat banking during the free banking era? (2) Did deposit insurance lead to risk taking and bank failures? (3) Are there systematic adverse selections in securitization markets? (4) Are there empirical evidences for Wildcat CLOs? (5) How did the collapse of the markets for ABCP, Prime MMF and repo evolve? (6) What is the mechanism between risk taking and bank runs and is there a link at all? Empirical studies that use large data sets and sophisticated empirical methods can provide a systematic account of these questions. In particular, we summarize the accumulating amount of recent empirical evidences for the new information sensitivity theory of debt and financial crises introduced in the course.

Case Studies

We will discuss a number of specific cases to highlight institutional details. (1) The JPMorgan and Goldman Sachs business model case illustrates the structure and complexity of modern bank holding companies. (2) The Goldman Sachs Abacus case illustrates the complex structure of a synthetic CDO which combines techniques used in securitization and credit default swaps markets and highlights conflicts of interests between issuers and investors. (3) The Lehman Brothers Bankruptcy case illustrates the management of the balance sheet, the use of repo 105, and global contagion. (4) The JPMorgan London Whale case illustrates risk models, risk management practices and hedging versus proprietary trading. (5) The Basel III case illustrates how banks respond to regulation and minimize the impact of the liquidity coverage ratio by developing new financial products such as callable commercial papers. (6) The Volker Rule case illustrates how CLO issuers respond to the risk retention rule in securitization by creating new vehicles such as a Majority Owned Affiliate (MOA) or capitalized MOA and shows how new regulation leads to new financial innovations. (7) The Sears, Roebuck case illustrates the discussion of fintech in 1970s. (8) The JPMorgan digital strategy case illustrates the importance of mobile payment as a gateway to technology driven banking. (9) The Alibaba Ant Financial case illustrates the state of the art usage of big data and machine learning technology in banking and finance and why Chinese fintechs are innovation leaders in this field. (10) The Stablecoins case highlights that crypto money and bank notes in the Free Banking Era are basically the same and potential issues of this new innovation.

Course Requirements

The main course requirements are homework assignments (four exercise sets), a midterm exam and a final exam. Grades will be allocated based on the following weights:

Exercise sets: 15%
Midterm exam: 40%
Final exam: 45%.

Students are allowed to work together on exercise sets. However, students must submit their homework individually. In case of collaboration, the names of students working together should be stated on the first page of the solution sheet.

Working on the homework assignments is an important part of this course. Students are expected to spend a considerable amount of time working through lecture notes and exercise sets.

It is important to be regular in preparations for this course. Important concepts will be developed through both lectures and exercise assignments.

Some of the background material and institutional details are not covered in the lectures but can be found in the recommended readings.

Please ask questions during the lectures. Critical comments are highly appreciated.

Also, students can talk to me if they need career advice and want to hear my opinion.

Readings

Lecture notes (Slides)

For each session students will obtain comprehensive lecture notes that can be downloaded from Courseworks typically before class.

Textbooks (recommended but not required)

Gorton, G. (2010): Slapped by the Invisible Hand: The Panic of 2007; Oxford University Press.

Gorton, G. (2012): Misunderstanding Financial Crises; Oxford University Press.

Gorton, G. (2015): The Maze of Banking: History, Theory, Crisis; Oxford University Press.

Optional readings

The following extensive list of papers can be downloaded from JStor or ScienceDirect and the most relevant papers will be provided online.

Akerlof, G. (1970): The Market for Lemons: Qualitative Uncertainty and the Market Mechanism, Quarterly Journal of Economics 84, 488-500.

Anderson, H and A. Copeland (2019): Information Management in Times of Crisis, working paper.

Anderson, R. and C. Gascon (2009): The Commercial Paper Market, the Fed, and the 2007-2009 Financial Crisis, Federal Reserve Bank of St. Louis Review 91, 589-612.

Ares (2018): Market Insights: Investing in CLOs.

Armstrong, J. (2003): The Syndicated Loan Market: Developments in the North American Context, Bank of Canada, working paper.

Arnold, G.E. and M. E. Rhodes (2020): Information sensitivity of corporate bonds: Evidence from the COVID-19 crisis, Finance Research Letters, forthcoming.

Ashcraft A. and T. Schuermann (2008): Understanding the Securitization of Subprime Mortgage Credit, FRBNY working paper.

Avraham D., P. Selvaggi and J. Vickery (2012): A Structural View of U.S. Bank Holding Companies, FRBNY Economic Policy Review July, 65-81.

Baghai, R., M. Giannetti and I. Jäger (2018): Liability Structure and Risk-Taking: Evidence from the Money Market Industry, working paper.

Bai, Y., T. V. Dang, Q. He and L. Lu (2021): Does lending relationship help or alleviate the transmission of liquidity shocks? Evidence from a liquidity crunch in China, Journal of Financial Stability, forthcoming.

Balakrishnan, K., A. Ertan, and Y. Lee (2019): (When) Do Mandatory Disclosures Reduce Liquidity, working paper.

Bank for International Settlement (2018): Implications of fintech developments for banks and bank supervisors, Basel Committee on Banking Supervision.

Bank of England and European Central Bank (2014): The case for a better functioning securitization market in the European Union.

Benmelech, E., J. Dlugosz and V. Ivashina (2012): Securitization without adverse selection: The case of CLOs, Journal of Financial Economics 106, 91-113.

Benmelech, E., and N. Bergman (2018): Debt, Information, and Illiquidity, NBER Working Paper No. 25054.

Berentsen A and F. Schär (2018): A Short Introduction to the World of Cryptocurrencies, Federal Reserve Bank of St. Louis Review, First Quarter, 100, 1-16.

BNY Mellon and PWC (2015): The Future of Wholesale Funding Markets. A Focus on Repo Markets Post U.S. Tri-Party Reform.

Board of Governors of the Federal Reserve System (2005): Federal Reserve System Purposes and Functions, Ninth Edition.

Bond Market Association (2004a): CDO Primer.

Bond Market Association (2004b): Corporate Bond Operational Underwriting Process, Research Quarterly.

Boyarchenko, N., A. Kovner and O. Shachar (2020): It's What You Say and What You Buy: A Holistic Evaluation of the Corporate Credit Facilities, working paper

Brancati, E. and M. Macchiavelli (2019): The Information-Sensitivity of Debt in Good Times and Bad Times, Journal of Financial Economics 133, 99-112.

Cashin, D., E. E. Syron-Ferris, and E. Klee (2020): Treasury safety, liquidity, and money premium dynamics: Evidence from recent debt limit impasses, working paper.

Cetorelli, N. and S. Peristiani (2012): The Role of Banks in Asset Securitization, FRBNY Economic Policy Review July, 47-63.

Cifrino, D., M. Mandel and C. Reicin (2014): The IPO and Public Company Primer.

Cipriani, M. and G. La Spada (2019): Investors' Appetite for Money-Like Assets: The Money Market Fund Industry after the 2014 Regulatory Reform, Journal of Financial Economics, forthcoming.

Comptroller of the Currency Administrator of National Banks (1997): Asset Securitization, Comptroller's Handbook.

Copeland, A., A. Martin and M. Walker (2014): Repo Runs: Evidence from the Tri-Party Repo Market, Journal of Finance 69, 2343-2380.

Covitz, D., N. Liang and G. Suarez (2013): The Evolution of a Financial Crisis: Panic in the Asset-Backed Commercial Paper Market, Journal of Finance 68, 815-848.

Cumming, C. (1987): The Economics of Securitization. FRBNY Quarterly Review Autumn, 11-23.

D'Amico, S., V. Kurakula, and S. Lee (2020): Impacts of the Fed Corporate Credit Facilities through the Lenses of ETFs and CDX, working paper.

Dang, T.V. (2008): Bargaining with Endogenous Information, Journal of Economic Theory 140, 339-354.

Dang, T.V. (2013): Information Acquisition, Noise Trading and Speculation in Double Auction Markets, working paper.

Dang, T.V. and M. Felgenhauer (2012): Information Provision in Over-the-Counter Markets, Journal of Financial Intermediation 21, 79-96.

Dang, T.V., G. Gorton and B. Holmstrom (2013): Haircuts and Repo Chains, working paper.

Dang, T.V., G. Gorton and B. Holmstrom (2015a): Ignorance, Debt and Financial Crises, working paper.

Dang, T.V., G. Gorton and B. Holmstrom (2015b): The Information Sensitivity of a Security, working paper.

Dang, T.V., G. Gorton and B. Holmstrom (2020): The Information View of Financial Crises, Annual Review of Financial Economics 12, 39-65.

Dang, T.V., G. Gorton, B. Holmstrom and G. Ordonez (2017): Banks as Secret Keepers, American Economic Review 107, 1005-1029.

Dang, T.V., W. Li, and Y. Wang (2022): The Empirical Information Sensitivity of Treasury Bonds and Stocks, working paper.

Dang, T.V., L. Liu, H. Wang and A. Yao (2019): Shadow Banking Modes: The Chinese versus US System, working paper.

Dang, T.V., X. Liu and F. Morath (2021): Taxation, Information Acquisition and Trade in Decentralized Markets: Theory and Test, working paper.

Dang, T.V., J. Mo, and Y. Li (2020): Bad Apples and Loan Pricing in Affected Industries: Evidence from a Corporate Fundraising Scandal, working paper.

Dang, T.V., H. Wang and A. Yao (2014): Chinese Shadow Banking: Bank-Centric Misperceptions, HKIMR working paper No. 22/2014.

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

Diamond, D. (1997): Liquidity, Banks, and Markets, Journal of Political Economy 105, 928-956.

Diamond, D. (2007): Banks and Liquidity Creation: A Simple Exposition of the Diamond-Dybvig Model, Federal Reserve Bank of Richmond Economic Quarterly, 93, 189-200.

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

Diamond, D. and R. Raghuram (2001): Liquidity Risk, Liquidity Creation, and Financial Fragility: A Theory of Banking, Journal of Political Economy 109, 287-327.

Euroclear (2009): Understanding repos and the repo markets.

Fannie Mae (2012): Basics of Fannie Mae Single-Family MBS.

Federal Reserve Bank of Richmond (1998): Instruments of the Money Market.

Federal Deposit Insurance Corporation (1998): A Brief History of Deposit Insurance in the United States, Division of Research and Statistics.

Flanagan, T. and A. Purnanandam (2020): Corporate Bond Purchases After COVID-19: Who Did the Fed Buy and How Did the Markets Respond?, working paper.

Flannery, M., S. Kwan and N. Mahendrarajah (2004): Market Evidence on the Opaqueness of Banking Firms' Assets, Journal of Financial Economics 71, 419-460.

Flannery, M., S. Kwan and N. Mahendrarajah (2013): The 2007-2009 Financial Crisis and Bank Opaqueness, Journal of Financial Intermediation 22, 55-84.

Fitch Ratings (2017): CLO Asset Manager Handbook, Sixth Edition.

Gallagher, E,, L. Schmidt, A. Timmermann and R. Wermers (2019): Investor Information Acquisition and Money Market Fund Risk Rebalancing during the 2011-2012 Eurozone Crisis, Review of Financial Studies, forthcoming.

Gennaioli, N., A. Shleifer and R. Vishny (2012): Neglected Risks, Financial Innovation, and Financial Fragility, Journal of Financial Economics 104, 452-468.

Gorton, G. (1988): Banking Panics and Business Cycles, Oxford Economic Papers 40, 751-81.

Gorton, G. (1999): Pricing Free Bank Notes, Journal of Monetary Economics 44, 33-64.

Gorton, G. (2017): The History and Economics of Safe Assets, Annual Review of Economics 9, 547-586.

Gorton, G. and G. Pennacchi (1990): Financial Intermediaries and Liquidity Creation, Journal of Finance 45, 49-72.

Gorton, G. and A. Metrick (2012): Securitized Banking and the Run on Repo, Journal of Financial Economics 104, 425-51.

Gorton, G. and A. Metrick (2013): Securitization, chapter 1 in the Handbook of the Economics of Finance, volume 2, Part A, edited by G. Constantinides, M. Harris, and R. Stulz, 1-70.

Gorton, G. and A. Metrick (2014): The Federal Reserve and Financial Regulation: The First Hundred Years, Journal of Economic Perspectives.

Gorton, G. and J. Zhang (2021): Taming Wildcat Stablecoins, working paper.

Hammerling S.N. (2019): Information, insurance, and interaction: the municipal bond market after the monolines, working paper.

Holmstrom, B. (2014): Understanding the Role of Debt in the Financial System, BIS working paper 479.

Iannota, G. (2006): Testing for Opaqueness in the European Banking Industry: Evidence from Bond Credit Ratings, Journal of Financial Services Research 30, 287-309.

International Monetary Fund (2017): Fintech and Financial Services: Initial Considerations, Staff Discussion Notes, No. 17/05.

Iorgova, S. and C. P. Ross (2021): Investor Information and Bank Instability during the European Debt Crisis, IMF working paper.

Järvenpää, M. and A. Paavola (2021): Investor monitoring, money-likeness and stability of money market funds, Bank of Finland Research Discussion Papers.

Johnston R, S. Markov, and S. Ramnath (2009): Sell-side analysts, Journal of Accounting and Economics, 47, 91-107.

Jones K. and T. Critchfield (2005): Consolidation in the U.S. Banking Industry: Is the "Long, Strange Trip" About to End?, FDIC Banking Review 17, 31-61.

Julliard, C., Z. Liu, S. E. Seyedan, K. Todorov and K. Yuan (2021): What Drives Repo Haircuts? Evidence from the UK Market, working paper.

Kacperczyk, M. and P. Schnabl (2010): When safe proved risky: commercial paper during the financial crisis of 2007-2009. Journal of Economic Perspectives 24, 29-50.

Kacperczyk, M. T., C. Pérignon and G. Vuillemey (2020). The Private Production of Safe Assets, Journal of Finance 76, 495-535.

Kashyap, A., R. Raghuram and J. Stein (2002): Banks as Liquidity Providers: An Explanation for the Coexistence of Lending and Deposit Taking, Journal of Finance 57, 33-73.

Li, L., Y. Li, M. Machiavelli, and X. Zhou (2020): Runs and interventions in the time of COVID-19: Evidence from money funds, working paper.

McNamara, C., R. Bennett and A. Metrick (2014): Basel III F: Callable Commercial Paper, Yale Program on Financial Stability Case Study 2014-1F-V1.

McNamara, C., M. Wedow and A. Metrick (2014): Basel III B: Basel III Overview, Yale Program on Financial Stability Case Study 2014-1B-V1.

Moody's Investors Service (1993): Asset-Backed Commercial Paper: Understanding the Risks, Special Report.

Moody's Investors Service (2003): The Fundamentals of Asset-Backed Commercial Paper, Structure Finance Special Report.

Morgan, D. (2002): Rating Banks: Risk and Uncertainty in an Opaque Industry, American Economic Review 92, 874-888.

Perignon, C., D. Thesmar and G. Vuillemey (2018): Wholesale Funding Dry-Ups, Journal of Finance 73, 575-617.

Price Waterhouse Cooper (2016): Blurred lines: How FinTech is shaping Financial Services, Global FinTech Report.

Report of the President's Working Group on Financial Markets (2010): Money Market Fund Reform Options.

Rolnick A. J. and W. E. Weber (1984): The Causes of Free Bank Failures, Journal of Monetary Economics 14, 267-291.

Rolnick A. J. and W. E. Weber (1985): Free Banking, Wildcat Banking, and Shinplasters. Federal Reserve Bank of Minneapolis Quarterly Review 6, 10-20.

Schmidt, L, A.Timmerman and R. Wermers (2016): Runs on Money Market Mutual Funds, American Economic Review 106, 2625-2657.

Securities and Exchange Commission (2010): Plaintiff, v. Goldman Sachs & Co. and Fabrice Tourre, Defendants.

Standard & Poor's (2011): A Guide to the Loan Market.

Thornton, D. (2012): The Federal Reserve's Response to the Financial Crisis: What It Did and What It Should Have Done, Federal Reserve Bank of St. Louis, working paper.

Todorov, K. (2020): Quantify the quantitative easing: Impact on bonds and corporate debt issuance, Journal of Financial Economics 135, 340-358.

Treasury Department (2009): Financial Regulatory Reform: A New Foundation.

Walter, J.R. (2006): The 3-6-3 Rule: An Urban Myth?, Federal Reserve Bank of Richmond Economic Quarterly 92, 51-78.

Webel, B. (2013): Troubled Asset Relief Program (TARP): Implementation and Status, Congressional Research Service.

Wiggins, R., T. Piontek, and A. Metrick (2014): The Lehman Brothers Bankruptcy A: Overview, Yale Program on Financial Stability Case Study 2014-3A-V1.

Wiggins, R. and A. Metrick (2014a): The Lehman Brothers Bankruptcy C: Managing the Balance Sheet through the Use of Repo 105, Yale Program on Financial Stability Case Study 2014-3C-V1.

Wiggins, R. and A. Metrick (2014b): The Lehman Brothers Bankruptcy E: The Effect on Lehman's Broker-Dealer, Yale Program on Financial Stability Case Study 2014-3E-V1.

Wiggins, R. and A. Metrick (2014c): The Lehman Brothers Bankruptcy G: The Special Case of Derivatives, Yale Program on Financial Stability Case Study 2014-3G-V1.

World Economic Forum (2015): The Future of FinTech, A Paradigm Shift in Small Business Finance.

Zeissler, A.G., G. Arwin and A. Metrick (2014a): JP Morgan Chase London Whale C: Risk Limits, Metrics, and Models, Yale Program on Financial Stability Case Study 2014-2C-V1.

Zeissler, A.G., G. Arwin and A. Metrick (2014b): JPMorgan Chase London Whale G: Hedging versus Proprietary Trading, Yale Program on Financial Stability Case Study 2014-2G-V1.

Zeissler, A.G., G. Arwin and A. Metrick (2014c): JPMorgan Chase London Whale Z: Background & Overview, Yale Program on Financial Stability Case Study 2014-2Z-V1.

Zeissler, A.G., R. Bennett, and Metrick (2014): JPMorgan Chase London Whale D: Risk Management Practices, Yale Program on Financial Stability Case Study 2014-2D-V1.

Tentative Course Outline

Lecture 1

Course Overview
Introduction

Lecture 2 (Evolution of the Banking System)

The Relevance of History
Historical Overview
The Free Banking Era
The Wildcat Banking Hypothesis

Rolnick and Weber (1985)

Lecture 3 (Evolution of the Banking System)

Empirical Test of the Wildcat Banking Hypothesis
The National Banking Era
Banking Panics during the National Banking Era
Clearinghouse and Suspension of Convertibility

Rolnick and Weber (1984)

Lecture 4 (Evolution of the Banking System)

A Model of Bank Runs
Information Sensitivity: A Measure of Default Risks

Diamond (2007); Diamond and Dybvig (1983);
Dang, Gorton and Holmstrom (2015b)

Lecture 5 (Evolution of the Banking System)

Bank Diversification dominates Individual Diversification
Banking Panics and Business Cycle
The Great Depression
Speeches and the Recreation of Confidence

Dang, Gorton and Holmstrom (2015b); Gorton (1988); FDIC (1998)

Lecture 6 (Evolution of the Banking System)

Federal Deposit Insurance Corporation (FDIC)
Deposit Insurance, Information Sensitivity and Confidence
Glass-Steagall Act and the 3-6-3 Rule in Commercial Banking
The Rise of Debt Market Finance in 1980s

FDIC (1998); Walter (2006)

Lecture 7 (Evolution of the Banking System, Bank Holding Companies)

Bank Merger Waves and Industry Consolidation
The Structure of Bank Holding Companies
Case: Business Model of Goldman Sachs and JPMorgan Chase

Jones and Critchfield (2005); Avraham, Selvaggi and Vickery (2012)

Lecture 8 (Bank Holding Companies)

Investment Banking
M&A Business
Syndicated Loan Business

Armstrong (2003); Standard & Poor's (2011)

Lecture 9 (Bank Holding Companies)

Bond Underwriting Business
Equity Underwriting Business
Asset Management Business

Bond Market Association (2004a)

Lecture 10 (New Forms of Money and Banking)

Information Sensitivity and the Value of Information
The Role of Rating Agencies in Bond and Money Markets
Money Markets versus Stock Markets

Dang and Felgenhauer (2012); Holmstrom (2014)

Lecture 11 (New Forms of Money and Banking)

Production of Money and Secret Keeping
The Evolution of Opacity in Banking and Shadow Banking
Overview of Money Market Instruments

Dang, Gorton, Holmstrom and Ordonez (2017);
Federal Reserve Bank of Richmond (1998)

Lecture 12 (New Forms of Money and Banking)

Money Market Fund Industry
MMF Secret Keeping: Rule 2a-7
Securitization: Basics and History

Comptroller Handbook (1997); Gorton and Metrick (2013)

Lecture 13 (New Forms of Money and Banking)

Agency MBS
The Financial Infrastructure of Securitization
The Markets for Private Label Securitized Products

Fannie Mae (2012); Cetorelli and Peristiani (2012); Bond Market Association (2004b)

Lecture 14 (New Forms of Money and Banking)

The Market for ABCPs
CLO Managers: The Who is Who in Private Equity
Empirical Test of the Wildcat CLO Hypothesis

Ares (2018); Fitch (2017); Benmelech, Dlugosz and Ivashina (2012)

Lecture 15 (New Forms of Money and Banking)

Synthetic CDOs
Case: Goldman Sachs Abacus Deal
Case: SEC versus Goldman (Abacus)

SEC (2010)

Lecture 16 (New Forms of Money and Banking)

Sales and Repurchase Agreement (Repo)
A Theory of Repo Trading and Haircut
Wholesale Funding Markets

Euroclear (2009); Dang, Gorton and Holmstrom (2013); BNY Mellon and PWC (2015)

Lecture 17 (New Forms of Money and Banking)

Chinese Shadow Banking
Corporate Fundraising Scandal and Loan Pricing

Dang, Wang and Yao (2014); Dang, Liu, Wang and Yao (2019); Dang, Mo and Li (2019)

Lecture 18 (The Financial Crises in 2008)

The Housing Market, Subprime Loans and Subprime MBS
The ABX.HE Index: Mechanics and Information Revelation
A Chronology of Events

Ashcraft and Schuermann (2008)

Lecture 19 (The Financial Crises in 2008)

Run on ABCPs
Run on Repos and Prime MMFs
Liquidity, Accounting and Collateral Calls
Case: Lehman's Bankruptcy

Covitz, Liang and Suarez (2013); Gorton and Metrick (2012); Schmidt, Timmerman and Wermers (2016); Wiggins, Piontek and Metrick (2014)

Lecture 20 (The Financial Crises in 2008)

Case: Lehman's Balance Sheet Management and Repo 105
Information Sensitivity and Optimal Security Design
A Theory of Debt-on-Debt

Wiggins and Metrick (2014a,b,c); Dang, Gorton and Holmstrom (2015a)

Lecture 21 (The Financial Crises in 2008)

The Information Sensitivity Theory of Financial Crises
Empirical Evidences for the Information Sensitivity Theory

Dang, Gorton and Holmstrom (2015a); Dang, Gorton and Holmstrom (2020); Gallagher, Schmidt, Timmermann and Wermers (2019); Brancati and Macchiavelli (2019); Perignon, Thesmar and Vuillemey (2018); Anderson and Copeland (2019); Cashin, Syron-Ferris, and Klee (2020); Dang, Li and Wang (2022)

Lecture 22 (Central Bank Policies and Interventions)

The Fed: Mission and Conventional Policies
Rescue Lending and Asset Purchase when Funding Markets Collapse
TARP and Supervisory Actions
Profits of the Rescue Policies in 2008
Funding Markets Interventions in 2020

Gorton and Metrick (2014); Webel (2013)

Lecture 23 (New Regulation and Unintended Consequences)

Overview of Regulatory Responses
Dodd Frank Act
MMF Reform and Triggered Redemptions
Transparency in Prime MMF Industry: Costs without Benefits
Overview of Basel III
Case: Liquidity Coverage Ratio and Callable Commercial Papers

Treasury Department (2009); Report of the President's Working Group on Financial Markets (2010); Cipriani and La Spada (2019); McNamara, Wedow and Metrick (2014); Namara, Bennett and Metrick (2014)

Lecture 24 (New Regulation, Market Making and Risk Management of Banks)

Case: Risk Retention Rule and the Rise of MOA and CMOA
Bank Risk Management
Value at Risk (VaR)
Case: JPM London Whale
Case: JPM Risk Limits and Hedging versus Proprietary Trading

Zeissler, Arwin and Metrick (2014a,b,c);
Zeissler, Bennett and Metrick (2014)

Lecture 25 (Most Recent Trends)

Information Insensitive Assets and Negative Interest Rate
Funding Mix of Banks
Alternative Asset Managers as Credit Providers
Technology and Finance
Case: Sears, Roebuck and Fintech in 1970s
Case: JPMorgan Chase Digital Strategy

IMF (2017); BIS (2018)

Lecture 26 (Most Recent Trends)

Chinese Fintech as Innovation Leaders
Case: Ant Financial
Case: Stablecoins
Innovation, Regulation and Information Sensitivity in Banking

Gorton and Zhang (2021)