

Money and Banking (ECON V3265)

Meeting time: M, W 4.10 - 5.25
Meeting place: Pupin 301

Office address: IAB 1032
Office hours: W 11.00 - 12.15 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 will provide a comprehensive view on the evolution of banking, from the eighteen century to the most recent financial innovations in wholesale banking and interbank markets and discuss two main themes.

The first central theme will be that the fundamental principle of banking and money is the same despite all the innovations in banking and evolution of institutions and markets in the last two hundred or so years. The second and reoccurring theme is about the causes of financial crises. An opinion often articulated in popular and policy discussions is that the recent financial crisis in 2007/08 and previous financial crises were mainly caused by (greedy) 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. A historical perspective and economic theory will highlight the (few) fundamental principles of banking and money and can provide a broader context to discuss the question whether a financial crisis is caused by a group of people
and whether bankers are more entrenched and self-centered than corporate managers and politicians. A better understanding of these two main themes will have significant implications for policy design and banking regulations.

The course is divided into two broad sections. Section I discusses banking and money 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. 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 2008

II.1. Central Bank Policies  
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 banking and money. These approaches will provide different but complementary perspectives on the same subject matter.

Institutional Analysis

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 securitization markets for mortgage backed securities (MBS), asset backed securities (ABS) and asset-backed commercial papers (ABCC) as well as the sales and repurchase agreement (repo) markets. These are multi trillion dollars markets each and they constitute fundamental parts of the modern financial system. Furthermore, we will discuss legal documents such as a repo master agreement, a private placement memorandum of ABS issuance and syndicated loan prospectus.
Theoretical Analysis

The theoretical analysis provides the conceptual foundation and interpretation of institutional structures. 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 were backed by state bonds which are debts. 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 and ABCC are debt instruments that are backed by mortgages, loans, or commercial papers, respectively, which are all debt securities. Similarly, repo is a debt contract that uses other debt instruments as collateral. Built on recent developments in the banking literature, a microfoundation of debt-on-debt is provided. The course will also discuss different rationales for banking and theories of bank runs. These theoretical frameworks highlight the common structure of banking in the last two hundred or so years.

Empirical Analysis

We will discuss several academic studies of popular hypotheses. (1) Are there systematic evidences for Wildcat banking during the free banking era and evidence for large scale moral hazard of bankers after the establishment of deposit insurance? (2) Are there adverse selections in securitization markets where banks sold bad securities to investors on a large scale? (3) Do MMF managers make excessively risky investments? These studies use large data sets and sophisticated empirical methods to provide a systematic account of relevant questions.

Case Studies

We will discuss a number of specific cases to highlight institutional details. (1) The Goldman Sachs Abacus case illustrates the complex structure of a synthetic collateral debt obligation which combines techniques used in securitization and credit default swaps markets and highlights conflicts of interests between issuers and investors. (2) The Lehman Brothers Bankruptcy case illustrates the complexity of a bank’s corporate structure, the management of the balance sheet, the use of repo 105, broker dealer activities, the special case of derivatives and the global contagion. (3) The JP Morgan London Whale case illustrates risk models, risk management practices and hedging versus proprietary trading. (4) 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.
Course Requirements

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

- Problem sets: 15%
- Midterm exam: 40%
- Final exam: 45%.

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

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

Be prepared to participate in class discussions about assigned reading and previous lectures. Please ask questions during the lecture. Critical comments are highly appreciated.

Working on the homework assignments is a very important part of this course. You should expect to spend a considerable amount of time working through lecture notes and problems sets.

You are allowed to work together on problem sets. However, students must submit their homework individually. In case of collaboration, the names of students you worked with should be stated on the first page of the solution sheet.

I would like to encourage you to read the business and financial press regularly during the course. Examples include the Wall Street Journal, Bloomberg, The Economist.

Also, please feel free to talk to me if you need career advice and want to hear my opinion.
Readings

Textbook (recommended)

Lecture notes (Slides)
For each session students will obtain notes that can be downloaded from Courseworks.

Optional readings
The following papers can be downloaded from JStor or will be provided online.


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


Tentative Course Outline

Lecture 1

Introduction and Course Overview

Chapter 1

Lecture 2 (Evolution of the Banking System)

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

Chapter 4; Rolnick and Weber (1985)

Lecture 3 (Evolution of the Banking System)

Empirical Tests of the Wildcat Banking Hypothesis
  The National Banking Era

Chapter 7; Rolnick and Weber (1984)

Lecture 4 (Evolution of the Banking System)

Banking Panics during the National Banking Era
  A Model of Bank Runs

Chapter 7; Diamond (2007); Diamond and Dybvig (1983)

Lecture 5 (Evolution of the Banking System)

Clearinghouse and Suspension of Convertibility
  Information Sensitivity: A Measure of Default Risks
  Banking Panics and Business Cycle

Chapter 8; Dang, Gorton Holmstrom (2015b)
Lecture 6 (Evolution of the Banking System)

Bank Diversification versus Individual Diversification
The Great Depression
Glass-Steagall Act and FDIC in 1933

Chapter 10; FDIC (1998)

Lecture 7 (Evolution of the Banking System)

Deposit Insurance, Information Sensitivity and Confidence
Commercial Banking and the 3-6-3 Rule

Chapter 9, 15; Dang, Gorton Holmstrom (2015b); Walter (2006)

Lecture 8 (Bank Holding Companies)

Banking versus Debt Market Finance in 1980s
Bank Merger Waves and Industry Consolidation
The Structure of Bank Holding Companies

Chapter 13; Jones and Critchfield (2005); Avraham, Selvaggi and Vickery (2012)

Lecture 9 (Bank Holding Companies)

Case: Business Model of Goldman Sachs
Investment Banking Activities
M&A Business
Syndicated Loan Business

Chapter 12; Armstrong (2003); Standard & Poor’s (2011)
Lecture 10 (Bank Holding Companies)

Bond Underwriting Business
Equity Underwriting Business
Asset Management Business

Chapter 16; Bond Market Association (2004a)

Lecture 11 (New Forms of Money and Banking)

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

Dang and Felgenhauer (2012)

Lecture 12 (New Forms of Money and Banking)

Production of Money and Secret Keeping
The Evolution of Opacity in Banking

Chapter 5; Dang, Gorton, Holmstrom and Ordonez (2013)

Lecture 13 (New Forms of Money and Banking)

Overview of Money Market Instruments
Money Market Fund Industry
Securitization: Basics and History


Lecture 14 (New Forms of Money and Banking)

Securitization: Mechanics
Agency MBS
The Markets for ABS, CDO, CLO and ABCP

Chapter 17; Cetorelli and Peristiani (2012)
Lecture 15 (New Forms of Money and Banking)

Synthetic CDOs and Credit Default Swaps  
Case: Goldman Sachs Abacus Deal

*Bond Market Association (2004b)*

Lecture 16 (New Forms of Money and Banking)

Case: SEC versus Goldman (Abacus)  
Sales and Repurchase Agreement (Repo)

*SEC (2010); Euroclear (2009)*

Lecture 17 (New Forms of Money and Banking)

A Theory of Repo Haircut  
Chinese Shadow Banking

*Dang, Gorton and Holmstrom (2013); Dang, Wang and Yao (2015)*

Lecture 18 (The Financial Crises in 2008)

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

*Chapter 18, 20; Ashcraft and Schuermann (2008)*

Lecture 19 (The Financial Crises in 2008)

A Chronology of Events  
Run on ABCPs in 2007  
Run on Repos and MMFs in 2008

*Covitz, Liang and Suarez (2013); Gorton and Metrick (2012)*
Lecture 20 (The Financial Crises in 2008)

Liquidity, Accounting and Collateral Calls
Case: Lehman’s Bankruptcy
Case: Lehman’s Balance Sheet Management and Repo 105

Chapter 18, 20; Wiggins, Piontek and Metrick (2014); Wiggins and Metrick (2014a)

Lecture 21 (The Financial Crises in 2008)

Case: Lehman’s Derivative Portfolio
Case: Lehman’s Corporate Structure and Intra-Firm Contagion

Wiggins and Metrick (2014b, c)

Lecture 22 (The Financial Crises in 2008)

A Theory of Debt-on-Debt
A Theory of Financial Crises

Dang, Gorton and Holmstrom (2015a, b)

Lecture 23 (Central Bank Policies)

Overview of Government Responses to the Collapse of Funding Markets
The Fed: Rescue Lending and Asset Purchase
Fed and Treasury: TARP and Supervisory Actions
Costs and Profits of the Rescue Policies
The Fed: Mission and Conventional Policies

Webel (2013); Gorton and Metrick (2014)
Lecture 24 (New Regulation and Unintended Liquidity Consequences)

Overview of Regulatory Responses
Dodd Frank Act in 2010
Reform of MMF Industry and Triggered Redemptions
Overview of Basel III
Case: Liquidity Coverage Ratio and Callable Commercial Papers

Report of the President’s Working Group on Financial Markets (2010); McNamara, Wedow and Metrick (2014); Namara, Bennett Metrick (2014)

Lecture 25 (Market Making and Risk Management of Banks)

Derivative Trading and Central Clearing
Bank Risk Management
Risk Measure: Value at Risk (VaR)
Case: JPM London Whale

Zeissler, Bennett and Metrick (2014b,d)

Lecture 26 (Risk Management of Banks and Most Recent Trends)

Case: JPM Hedging versus Proprietary Trading
Case: JMP Risk Limits and Metrics
Alternative Asset Managers as Credit and Liquidity Providers
Fintech

Zeissler, Bennett and Metrick (2014a,c)