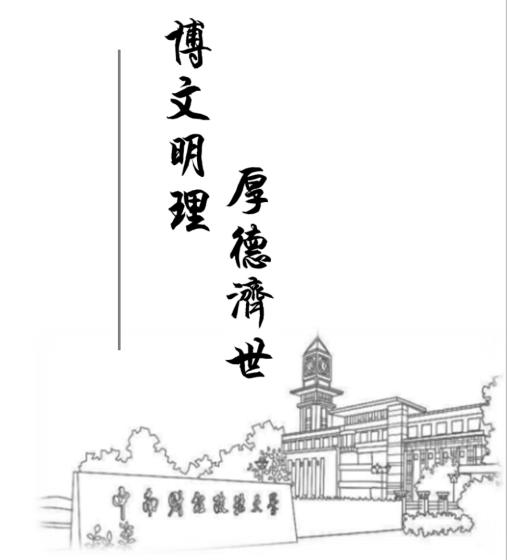


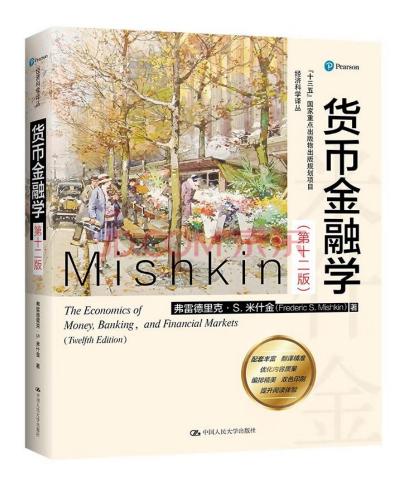
# Financial Markets

杨子超 yang\_zichao@outlook.com https://www.yzc.me



### **Recommended Textbooks**

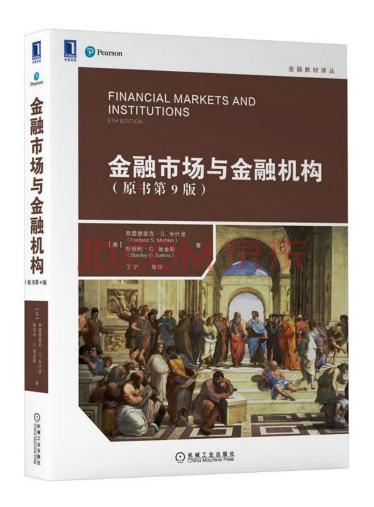
1. The Economics of Money, Banking, and Financial Markets by Frederic S. Mishkin



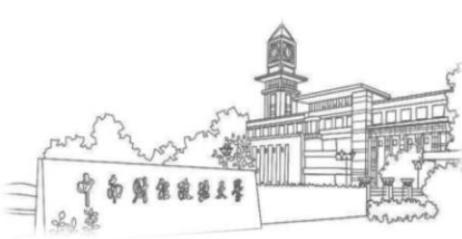


#### **Recommended Textbooks**

2. Financial Markets and Institutions by Frederic S. Mishkin & Stanley G. Eakins









#### **Grading Policy**

1. Homework (30%)

You will have 3-4 HW assignments throughout this semester.

HW can be done in groups but each of you need to turn in your own HW.

HW deadlines are **HARD** deadlines. If you do not have a good reason (e.g. medical emergency), I will deduct 10-50 points based on how late your HW is turned in.

2. Final Exam (70%)

I may curve your score based on the performance of the whole class.

Relax, I will not lower your score unless you are caught cheating in the exam.



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关于



2025年8月20日全国银行间同业拆借中心受权公布贷款市场报价利率 (LPR) 公告

2025-08-20 09:00

字号大小: A A A • 打印本页

中国人民银行授权全国银行间同业拆借中心公布,2025年8月20日贷款市场报价利率(LPR)为:1年期LPR为3.0%,5年期以上LPR为3.5%。 以上LPR在下一次发布LPR之前有效。



#### 国债买卖业务公告 [2024]第5号

字号 大 中 小 文章来源: 货币政策司 2024-12-31 17:00:00

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为加大货币政策逆周期调节力度,保持银行体系流动性充裕,2024年12月人民银行开展了公开市场国债买卖操作,全月净买入债券面值为3000亿元。

中国人民银行公开市场业务操作室

二〇二四年十二月三十一日

中国人民银行 货币政策司 THE PEOPLE'S BANK OF CHINA Monetary Policy Department										
信息公开	新闻发布	法律法规	货币政策	宏观审慎	信贷政策	金融市场	金融稳定	调查统计	银行会计	支付体系
后总公开	金融科技	人民币	经理国库	国际交往	人员招录	学术交流	征信管理	反洗钱	党建工作	
服务互动	政务公开	政策解读	公告信息	图文直播	央行研究	音頻视頻	市场动态	网上展厅	报告下载	报刊年鉴
	网送文告	办事大厅	在线申报	下载中心	网上调查	意见征集	金融知识	关于我们		
<b>首 页</b> 2025年8月31日 星期日   我的位置:首页 > 货币政策司 > 货币政策工具 > 公开市场业务 > 公开市场业务交易公告 请输入搜索关键字 <b>搜索</b> 高级搜索										

#### 公开市场业务交易公告 [2025]第168号

字号 大 中 小 文章来源: 货币政策司 2025-08-29 09:20:30

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2025年8月29日中国人民银行以固定利率、数量招标方式开展了7829亿元逆回购操作。具体情况如下:

#### 逆回购操作情况

期限	操作利率	投标量	中标量
7天	1.40%	7829亿元	7829亿元

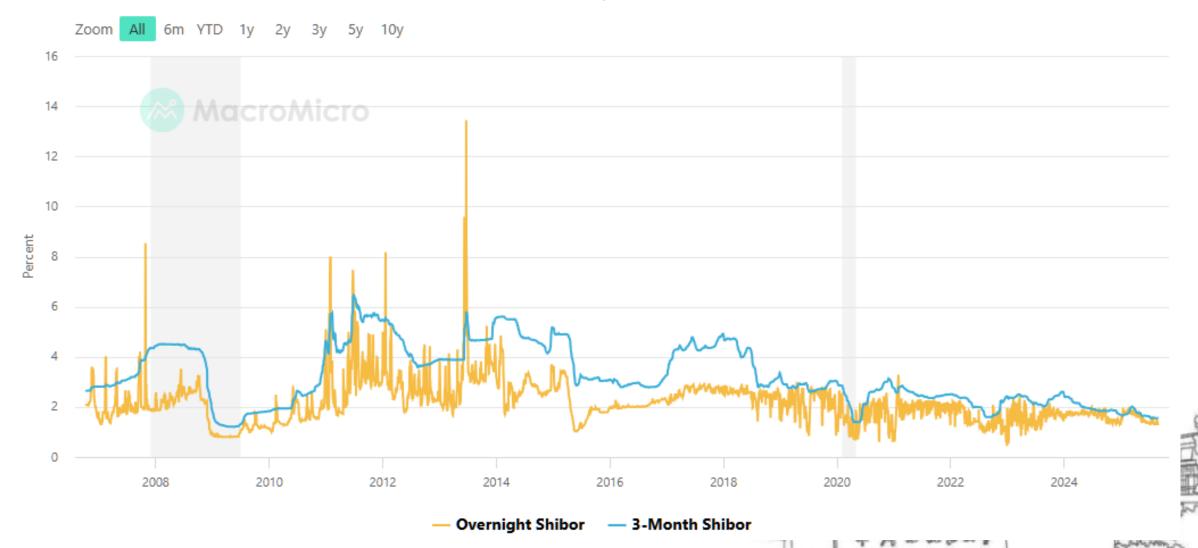
中国人民银行公开市场业务操作室

二〇二五年八月二十九日



#### China - SHIBOR

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**NEWS > ECONOMIC NEWS** 

### Traders Pricing in 100% **Chance Fed Will Cut Interest** Rates in September

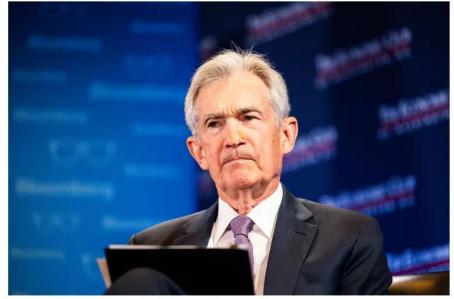
Fed Fund Futures Show Expectations for Multiple Cuts Before End of the Year

By TAYLOR TOMPKINS Published July 16, 2024 11:56 AM EDT









Federal Reserve Chair Jerome Powell, during an Economic Club of Washington event on July 15, 2024. Tierney L. Cross / Bloomberg / Getty Images

#### Firing of Fed Official Could **Give Trump Control Of** Interest Rates For Years

By DICCON HYATT Published August 28, 2025 04:53 PM EDT



Courts will decide whether President Donald Trump can remove Lisa Cook from the Federal Reserve Board of Credit: Saul Loeb / AFP via Getty Images

#### **KEY TAKEAWAYS**

- If courts allow President Donald Trump to remove a key Federal Reserve official, his nominees could have the power to set interest rates as Trump wishes.
- Trump will have appointed five of the seven Fed governors if he replaces Lisa Cook on the Fed board.
- That would not constitute a majority on the 12-member policy committee that sets interest rates, but the governors are empowered to influence who the remaining five voters are.
- Trump has repeatedly demanded that the Fed lower interest rates, which could boost the economy. However, experts say this would risk reducing the Fed's credibility and ability to control inflation.





#### What will we learn?

- Understand why financial markets and institutions exist
- Study the role of money in the economy
- Examine how financial markets such as bond, stock and foreign exchange markets work
- Examine how financial institutions such as banks, investment and insurance companies work



#### Roadmap

Introduction

Motivation, concepts, background knowledge, etc.

• Fundamentals of Financial Markets

Interest rates, risk, rational expectations, efficient market hypothesis

• Fundamentals of Financial Institutions

Lemons Problem, Moral Hazard, Financial Regulations, Financial Crises

Central Banking and Monetary Policy

Central Banks, Conduct of Monetary Policy

• Different Types of Financial Markets (FMI textbook)

Money Market, Bond Market, Stock Market, Mortgage Market, Foreign Exchange Market

- o Financial Institutions Industry (FMI textbook)
- Monetary Theory (EMBFM textbook)

## **Chapter 1: Why Study Financial Markets and Institutions?**





# Why Study Financial Markets?

**Financial markets** are markets in which funds are transferred from people and firms who have an excess of available funds to people and firms who have a need of funds

Financial markets, such as bond and stock markets, are crucial in our economy.

- 1. These markets channel funds from savers to investors, thereby promoting economic efficiency.
- 2. Market activity affects personal wealth, the behavior of business firms, and economy as a whole.



### The Bond Market and Interest Rates

A security (financial instrument) is a claim on the issuer's future income or assets.

A **bond** is a debt security that promises to make payments periodically for a specified period of time.

An **interest rate** is the cost of borrowing or the price paid

for the rental of funds.



#### The Bond Market and Interest Rates

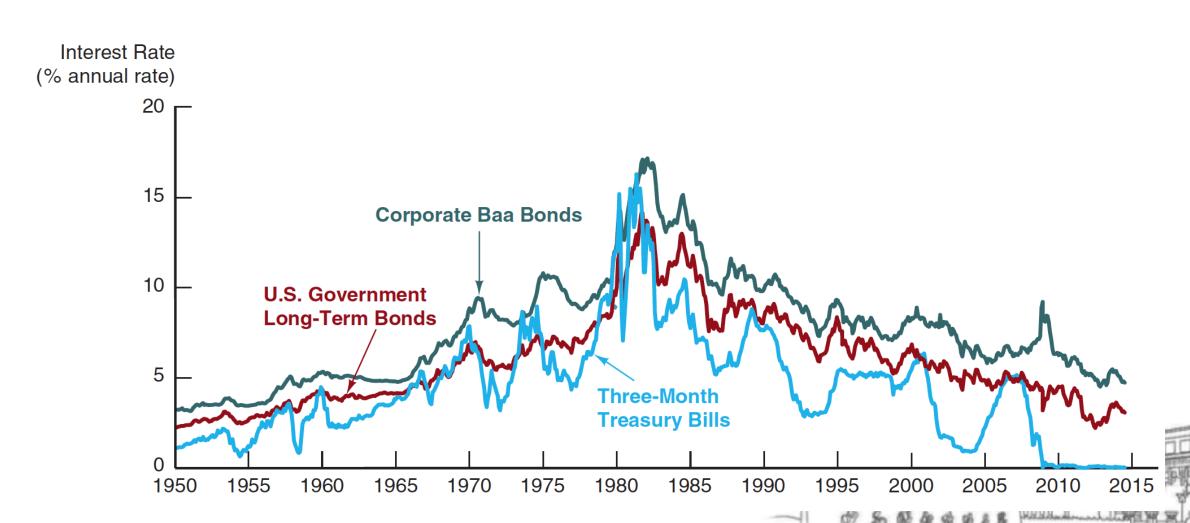
Bond markets allow **governments**, **corporations** to borrow to finance activities.

In this market, borrowers issue a **security**, called a **bond**, that promises the timely payment of interest and principal over some specific time horizon.

The **interest rate** is the cost of borrowing. There are many different types of market interest rates, including mortgage rates, car loan rates, etc.



## Interest Rates on Selected Bonds, 1950-2014





#### The Stock Market

**Stock market** is the market where common stock (or just stock), representing ownership in a company, are traded.

Common stock represents a share of ownership in a corporation.

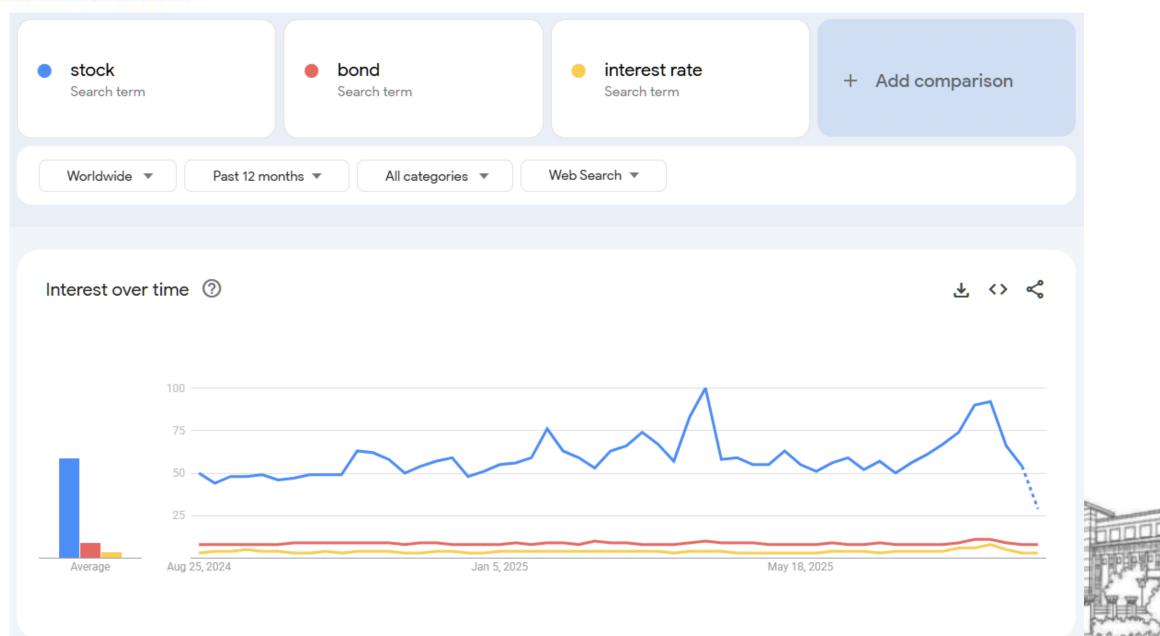
A share of stock is a security that claims on the residual earnings and assets of the corporation



#### The Stock Market

Companies initially sell stock (in the **primary market**) to raise money. But after that, the stock is traded among investors (**secondary market**).

Of all the active markets, the stock market receives the most attention from the media. Why?



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## Dow Jones Industrial Average, 2000–2025

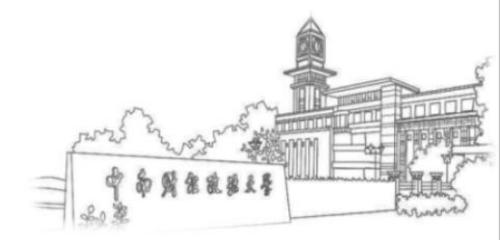




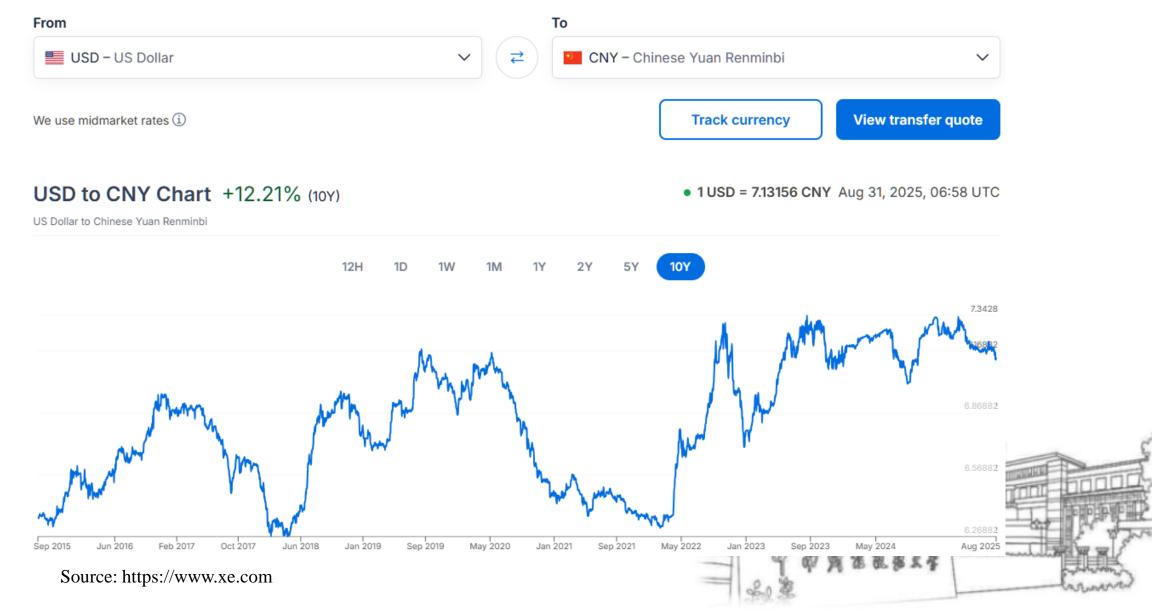
# Foreign Exchange Market

The foreign exchange market is where international currencies trade and exchange rates are set.

Although most people know little about this market, it has a daily volume around \$6.6 trillion in 2019! (Source: Bank for International Settlements)



# Foreign Exchange Market





# Why Study Financial Institutions?

**Financial institutions** are what make financial markets work. Without them, financial markets would not be able to move funds from people who save to people who have productive investment opportunities. Thus, financial institutions play a crucial role in the economy.

Types of financial institutions: banks, insurance companies, mutual funds, finance companies, and investment bank. All financial institutions are heavily regulated by the government.

Q: why do we need these financial institutions?



# Why Study Financial Institutions?

- Financial intermediaries: institutions that borrow funds from people who have saved and in turn make loans to other people.
  - >Banks: accept deposits and make loans
  - >Other financial institutions: insurance companies, finance companies, pension funds, mutual funds and investment companies
- Financial innovation: the development of new financial products and services
  - Can be an important force for good by making the financial system more

efficient



# Why Study Financial Institutions?

- Managing risk in financial institutions
  - Focusing on risk management in the financial institution.
- Financial crises
  - The financial crises of 2007–2009 was the worst financial crisis since the Great Depression. Why did it happen?

### 2008 Financial Crisis

VELLIAM HURT | EDWARD ASNER | BELLY CRUOUP | PAUL GLAMATTI | TOPHER GRACE CYNTHIA NIXON | BELL PULLMAN | TONY SHALHOUR | JAMES WOODS

MAIN STREET TOOK THE FALL. WALL STREET GOT THE CHECK.

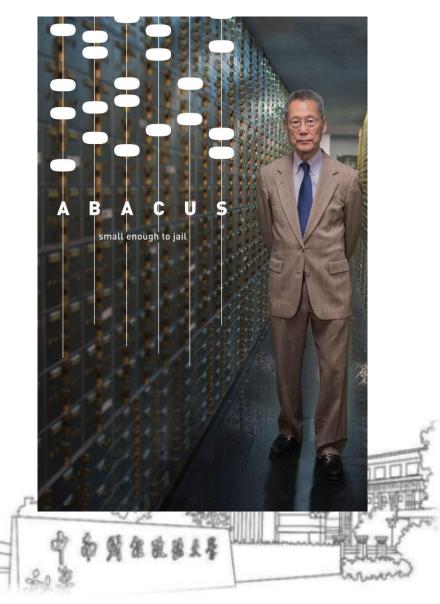


THE TRUE STORY BEHIND THE 2008 ECONOMIC CRISIS.

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# Why Study Money and Monetary Policy?

Evidence suggests that money plays an important role in generating business cycles.

Recessions (unemployment) and expansions affect all of us.

Monetary theory ties changes in the money supply to changes in aggregate economic activity and the price level.



# Money, Business Cycles, and Inflation

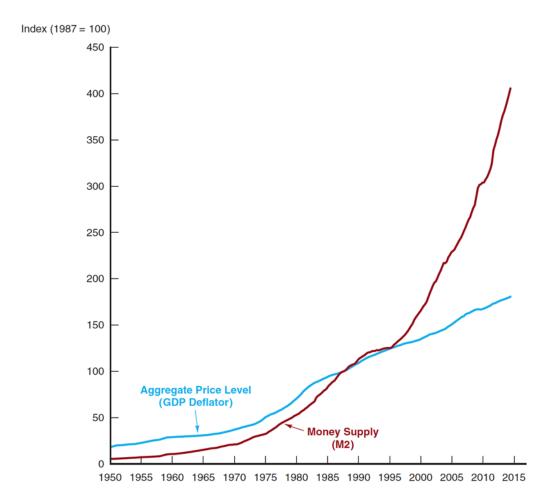
The aggregate price level is the average price of goods and services in an economy.

A continual rise in the price level (inflation) affects all economic players.

Data shows a connection between the money supply and the price level.



# Aggregate Price Level and the Money Supply in the United States, 1950–2014

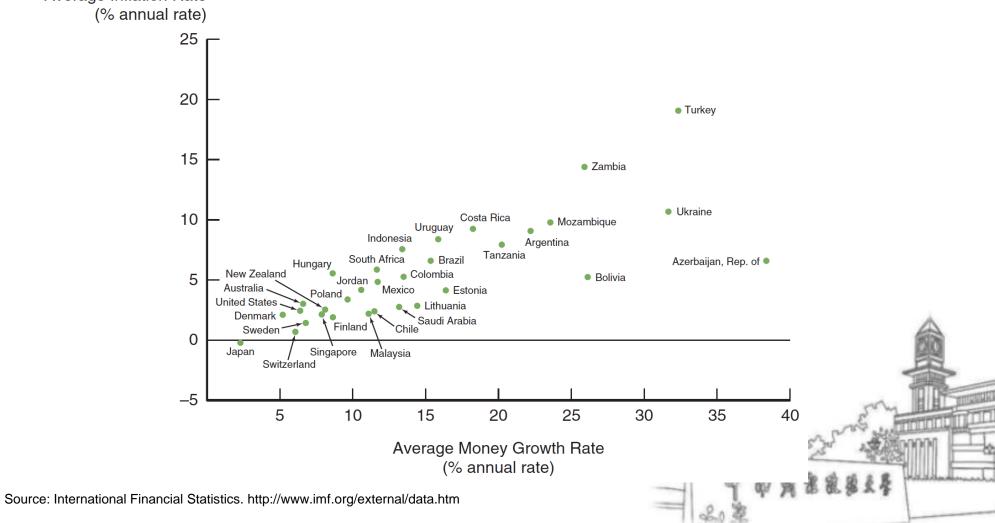






### Average Inflation Rate Versus Average Rate of Money Growth, Selected Countries, 2003-2013

Average Inflation Rate





# Money and Interest Rates

Q: why do we care about the price level when we study financial markets?





## Money and Interest Rates

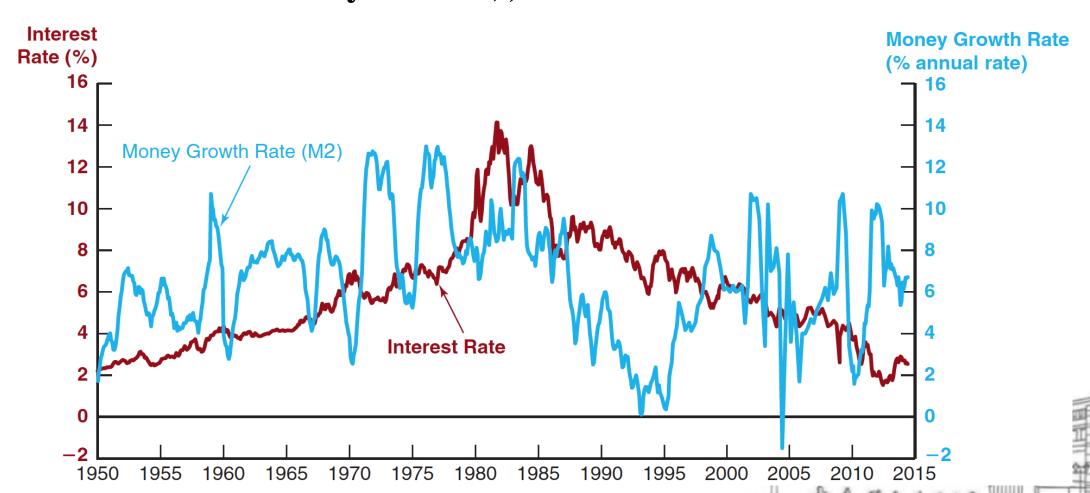
Interest rates are the price of money

Prior to 1980, the rate of money growth and the interest rate on long-term Treasury bonds were closely tied

Since then, the relationship is less clear but the rate of money growth is still an important determinant of interest rates



# Money Growth (M2 Annual Rate) and Interest Rates (Long-Term U.S. Treasury Bonds), 1950–2014



Source: Federal Reserve Bank of St. Louis, FRED database: http://research.stlouisfed.org/fred2

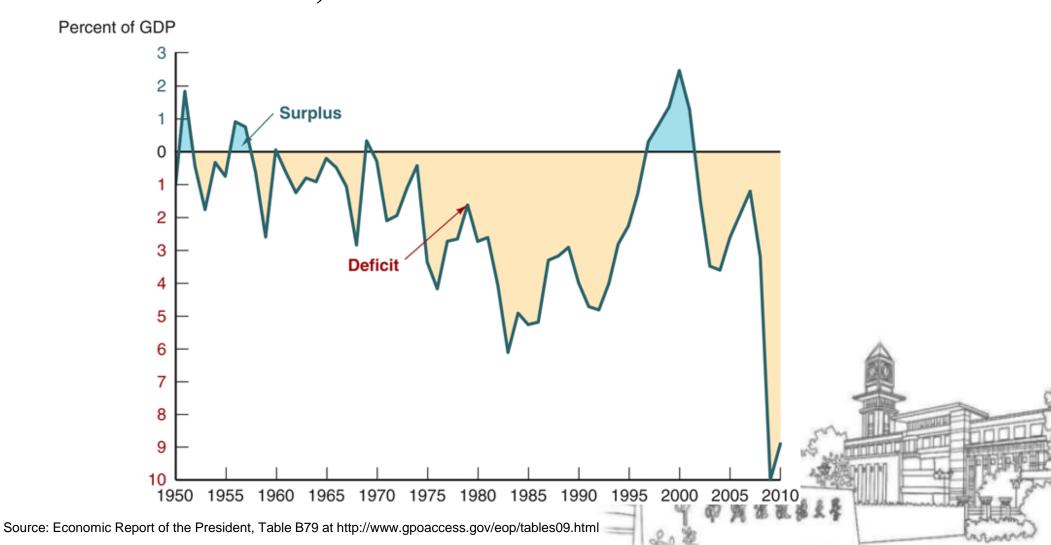


## Fiscal Policy and Monetary Policy

- Monetary policy is the management of the money supply and interest rates
  - Conducted in the U.S. by the Federal Reserve System (Fed)
- Fiscal policy deals with government spending and taxation
  - ➤ Budget deficit is the excess of expenditures over revenues for a particular year
  - >Budget surplus is the excess of revenues over expenditures for a particular year
  - particular year
  - Any deficit must be financed by borrowing



# Government Budget Surplus or Deficit as a Percentage of Gross Domestic Product, 1950–2013





## The Foreign Exchange Market

The **foreign exchange market**: where funds are converted from one currency into another

The **foreign exchange rate** is the price of one currency in terms of another currency.

The foreign exchange market determines the foreign exchange rate.



## Why Study International Finance?

- Financial markets have become increasingly integrated throughout the world.
- The international financial system has tremendous impact on domestic economies:
  - How a country's choice of exchange rate policy affect its monetary policy?
  - How capital controls impact domestic financial systems and therefore the performance of the economy?
  - Which should be the role of international financial institutions like the IMF?



### How We Study Financial Markets and Institutions

A simplified approach to the demand for assets

Basic supply and demand to explain behavior in financial markets

Equilibrium forces & profit seeking behavior

An approach to financial structure based on transaction costs and asymmetric information



### Concept: Aggregate Output and Income

- The most commonly reported measure of aggregate output, the **gross domestic product (GDP)**, is the market value of all final goods and services produced in a country during the course of a year.
- Aggregate income, the total income of factors of production (land, labor, and capital) from producing goods and services in the economy during the course of the year, is equal to aggregate output.



### Concept: Real versus Nominal Magnitudes

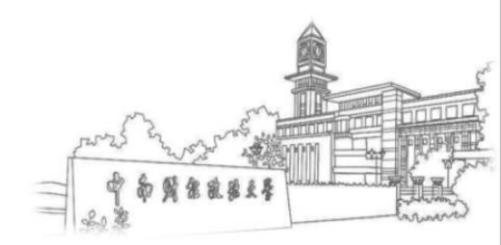
When the total value of final goods and services is calculated using **current prices**, the resulting GDP measure is referred to as **nominal GDP**. The word nominal indicates that values are measured using current prices.

A more reliable measure of economic production expresses values in terms of prices for an arbitrary **base year**. GDP measured with **constant prices** is referred to as **real GDP**, the word real indicating that values are measured in terms of fixed prices.



### Concept: Aggregate Price Level

- The aggregate price level is a measure of average prices in the economy.
- Three measures of the aggregate price level are commonly encountered in economic data:
  - The GDP deflator
  - ➤ The PCE deflator
  - ➤ The Consumer Price Index (CPI)





### Concept: Growth Rate and the Inflation Rate

A **growth rate** is defined as the percentage change in a variable. For example, if real GDP grew from \$9 trillion in 2020 to \$9.5 trillion in 2021, then the **real GDP growth rate** is:

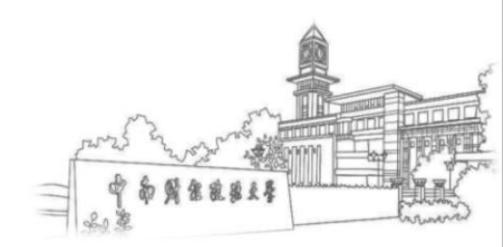
(\$9.5 trillion - \$9 trillion)/\$9 trillion \* 100%=5.6%

The **inflation rate** is defined as the growth rate of the aggregate price level. For example, if the GDP deflator rose from 111 in 2020 to 113 in 2021, the inflation rate is:

(113-111)/111\*100%=1.8%



## Chapter 2: An Overview of the Financial System





### **Chapter Question**

You recently developed a life-changing app that can benefit millions of lives in the world. But you need money to market this app and build your business upon this app.

At the same time, I have some money to invest for retirement.

If we could get together, perhaps both of our needs can be met. But how does that happen?

Can we just meet up in a café and figure out the rest boring transaction details by ourselves under the whiteness of the barista?



### Chapter Roadmap

In this chapter, we study the effects of financial markets and institutions on the economy, and look at their general structure and operations.

#### Topics include:

- Function and Structure of Financial Markets
- >Internationalization of Financial Markets
- >Types and Functions of Financial Intermediaries
- >Regulation of the Financial System





### **Function of Financial Markets**

Performs the essential function of channeling funds from economic players that have saved surplus funds to those that have a shortage of funds.

Promotes economic efficiency by producing an efficient allocation of capital, which increases production.

Directly improve the well-being of consumers by allowing them to time purchases better.

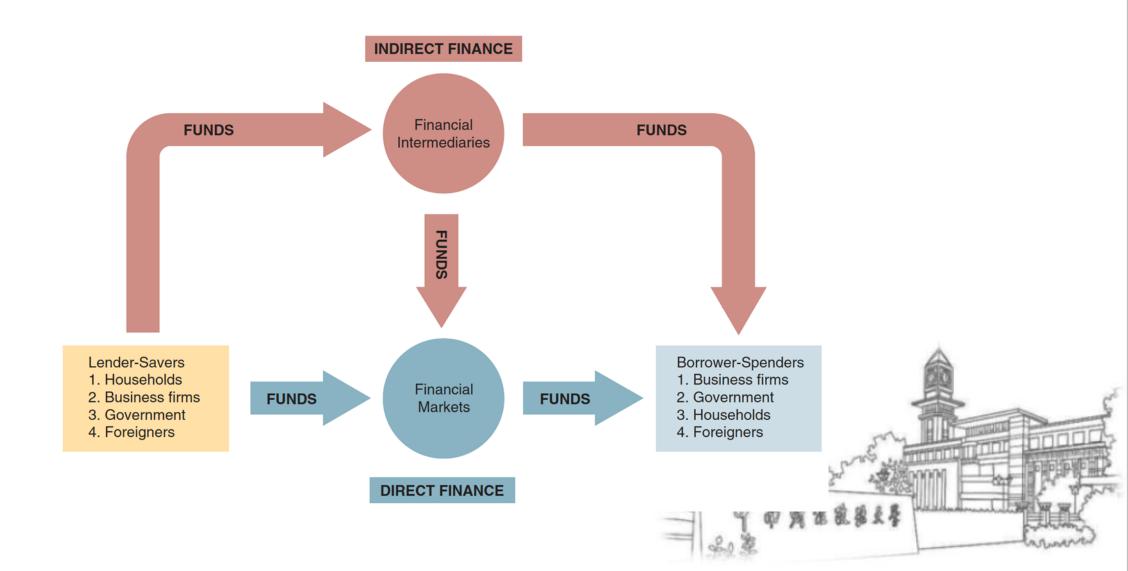


### Segments of Financial Markets

**Direct Finance**: borrowers borrow directly from lenders in financial markets by selling financial instruments which are claims on the borrower's future income or assets.

Indirect Finance: Borrowers borrow indirectly from lenders via financial intermediaries (established to source both loanable funds and loan opportunities) by issuing financial instruments which are claims on the borrower's future income or assets.

## Flows of Funds Through the Financial System



### Structure of Financial Markets

#### Debt Markets

- ➤ Short-Term (maturity < 1 year)
- ➤ Long-Term (maturity > 10 year)
- ➤Intermediate term (maturity in-between)

#### • Equity Markets

- Equity refers to a portion of a company that is owned by its investors.
- The most common equity is shares of stock
- ▶Pay dividends, in theory forever



### Structure of Financial Markets

#### • Primary Market

- New security issues sold to initial buyers
- >Who does the issuer sell to in the Primary Market?
- Investment bank underwrites securities: it guarantees a price for a corporation's securities and then sells them to the public.

#### Secondary Market

Securities previously issued are bought and sold here. Examples

include the NYSE and Nasdaq

➤ Who trades?



### Why the secondary market exists?

Even though firms don't get any money, per se, from the secondary market, it serves two important functions:

- 1. Provide liquidity, making it easy to buy and sell the securities of the companies
- 2. Establish a price for the securities





### More on Secondary Markets

We can further classify secondary markets as follows:

### Exchanges

- >Trades conducted in central locations
- For example, NYSE, Chicago Board of Trade

### • Over-the-Counter (OTC) markets:

- > Dealers at different locations buy and sell
- Foreign exchange, Federal funds





### Classifications of Financial Markets

We can also further classify markets by the maturity of the securities:

Money markets deal in short-term debt instruments (maturity <= 1 year)

Capital markets deal in longer-term debt (maturity > 1 year) and equities



### Financial Market Instruments

#### **TABLE 1** Principal Money Market Instruments

Type of Instrument	Amount				
	(\$ billions, end of year)				
	1980	1990	2000	2013	
J.S. Treasury bills	216	527	647	1,591	

Negotiable bank certificates of 317 543 1,053 1,762 deposit (large denominations)

Commercial paper 122 557 1,619 951

Federal funds and security 64 388 768 1,919 repurchase agreements

Source: Federal Reserve Flow of Funds Accounts; http://www.federalreserve.gov



## **Financial Market Instruments**

TABLE 2	Principal Capital Market Instruments

	Amount (\$ billions, end of year)			
			, end of yea	ar)
Type of Instrument	1980	1990	2000	2013
Corporate stocks (market value)	1,601	4,146	17,627	21,363
Residential mortgages	1,106	2,886	5,463	9,863
Corporate bonds	366	1,008	2,230	6,436
U.S. government securities (marketable long-term)	407	1,653	2,184	4,359
U.S. government agency securities	193	435	1,616	6,199
State and local government bonds	310	870	1,192	2,925
Bank commercial loans	459	818	1,091	1,175
Consumer loans	355	813	536	679
Commercial and farm mortgages	352	829	1,214	2,463

Source: Federal Reserve Flow of Funds Accounts; http://www.federalreserve.gov.



### Internationalization of Financial Markets

- Foreign Bonds: sold in a foreign country and denominated in that country's currency
- Eurobond: bond denominated in a currency other than that of the country in which it is sold
- Eurocurrencies: foreign currencies deposited in banks outside the home country
  - Eurodollars: U.S. dollars deposited in foreign banks outside the U.S. or in foreign branches of U.S. banks
- World Stock Markets:

> Help finance foreign entities, like Japanese investors can provide funds to corporations in the U.S.



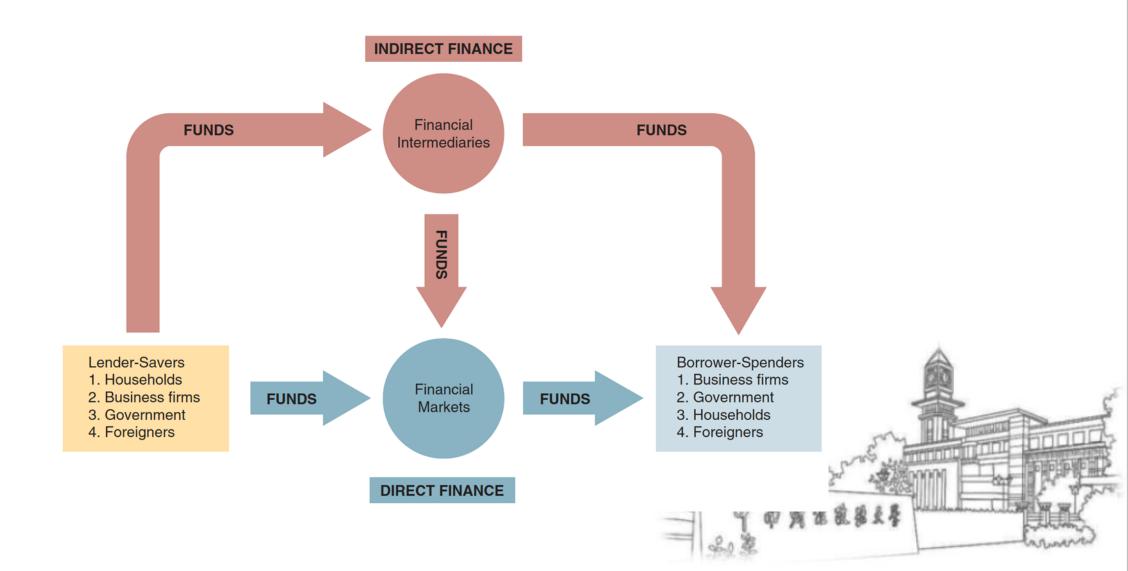
#### Function of Financial Intermediaries: Indirect Finance

Instead of savers lending/investing directly with borrowers, a **financial intermediary** (such as a bank) plays as the middleman:

- >the intermediary obtains funds from savers
- >the intermediary then makes loans/investments with borrowers

This process, called **financial intermediation**, is actually the primary means of moving funds from lenders to borrowers. And indirect finance is a more important source of finance than securities markets (such as stocks).

## Flows of Funds Through the Financial System





Lower transaction costs (time and money spent in carrying out financial transactions)

Reduce transactions costs by developing expertise and taking advantage of economies of scale

Financial intermediaries make profits by reducing transactions costs (service fee)



A financial intermediary's low transaction costs mean that it can provide its customers with **liquidity services**:

- ➤ Banks provide depositors with checking accounts that enable them to pay their bills easily
- Depositors can earn interest on checking and savings accounts and yet still convert them into goods and services whenever necessary



Financial intermediaries (FI) can help reduce the exposure of investors to risk through the process known as **risk sharing**:

FI sells assets with lesser risk to one party in order to buy assets with higher risk from another party. FI earns a profit on the spread between the returns on risky assets and the payments they make on the lesser risk asset they sold.

This process of risk sharing is also referred as asset transformation.



Thanks to low transaction costs, financial intermediaries also help by providing the means for individuals and businesses to diversify their asset holdings.

**Diversification** entails investing in a collection (**portfolio**) of assets whose returns do not always move together, with the result that overall risk is lower than for individual assets.



Deal with asymmetric information problems:

- Adverse Selection (before the transaction): try to avoid selecting the risky borrower by gathering information about them
- ➤ Moral Hazard (after the transaction): ensure borrower will not engage in activities that will prevent him/her to repay the loan.

Another view of moral hazard is conflicts of interest.



# Types of Financial Intermediaries

Type of Intermediary	Primary Liabilities (Sources of Funds)	Primary Assets (Uses of Funds)
Depository institutions (banks)		
Commercial banks	Deposits	Business and consumer loans, mortgages, U.S. government securities, and municipal bonds
Savings and loan associations	Deposits	Mortgages
Mutual savings banks	Deposits	Mortgages
Credit unions	Deposits	Consumer loans
Contractual savings institutions		
Life insurance companies	Premiums from policies	Corporate bonds and mortgages
Fire and casualty insurance companies	Premiums from policies	Municipal bonds, corporate bonds and stock, and U.S. government securities
Pension funds, government retirement funds	Employer and employee contributions	Corporate bonds and stock
Investment intermediaries		
Finance companies	Commercial paper, stocks, bonds	Consumer and business loans
Mutual funds	Shares	Stocks, bonds
Money market mutual funds	Shares	Money market instruments
Hedge funds	Partnership participation	Stocks, bonds, loans, foreign currencies, and many other assets



# Types of Financial Intermediaries

		Value of Assets (\$ billions, end of year)		
Type of Intermediary	1980	1990 2000		2013
Depository institutions (banks)				
Commercial banks	1,481	3,334	6,469	12,670
Savings and loan associations and mutual savings banks	792	1,365	1,218	2,157
Credit unions	67	215	441	1,005
Contractual savings institutions				
Life insurance companies	464	1,367	3,136	6,035
Fire and casualty insurance companies	182	533	862	1,527
Pension funds (private)	504	1,629	4,355	7,966
State and local government retirement funds	197	737	2,293	4,846
Investment intermediaries				
Finance companies	205	610	1,140	1,474
Mutual funds	70	654	4,435	11,527
Money market mutual funds	76	498	1,812	2,678



### Importance of Financial Markets

Now let us go back to the beginning question. Will financial markets help us to meet our needs?





### Regulation of the Financial System

To increase the information available to investors:

- > Reduce adverse selection and moral hazard problems
- ➤ Reduce insider trading (SEC)

To improve monetary control:

> Reserve requirements

> Deposit insurance to prevent bank panics

### Regulation of the Financial System

To ensure the soundness of financial intermediaries:

- > Restrictions on entry (chartering process).
- Disclosure of information.
- >Restrictions on Assets and Activities (control holding of risky assets).
- Deposit Insurance (avoid bank runs).
- Limits on Competition (mostly in the past):
  - □ Branching
  - □Restrictions on Interest Rates





## Regulation of the Financial System

TABLE 5 Principal Regulatory Agencies of the U.S. Financial System				
Regulatory Agency	Subject of Regulation	Nature of Regulations		
Securities and Exchange Commission (SEC)	Organized exchanges and financial markets	Requires disclosure of information; restricts insider trading		
Commodities Futures Trading Commission (CFTC)	Futures market exchanges	Regulates procedures for trading in futures markets		
Office of the Comptroller of the Currency	Federally-chartered com- mercial banks and thrift institutions	Charters and examines the books of federally-chartered commercial banks and thrift institutions; imposes restrictions on assets they can hold		
National Credit Union Administration (NCUA)	Federally-chartered credit unions	Charters and examines the books of federally-chartered credit unions and imposes restrictions on assets they can hold		
State banking and insurance commissions	State-chartered depository institutions and insurance companies	Charter and examine the books of state-chartered banks and insurance companies, impose restrictions on assets they can hold, and impose restrictions on branching		
Federal Deposit Insurance Corporation (FDIC)	Commercial banks, mutual savings banks, savings and loan associations	Provides insurance of up to \$250,000 for each depositor at a bank, examines the books of insured banks, and imposes restrictions on assets they can hold		
Federal Reserve System	All depository institutions	Examines the books of commercial banks and systemically important financial institutions; sets reserve requirements for all banks		

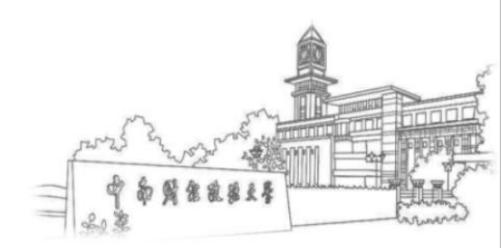


### Financial Institutions in China

	类型	组成
	行当局	中国人民银行;国家外汇管理局
<u></u> 温	i管当局	中国银行业监督管理委员会;中国证券监督管理委员会;中国保险监督管理委员会
	银行业存款类	银行;城市信用合作社;农村信用合作社;农村资金互助社;财务公司;村镇
银行业	金融机构	银行
金融机构	银行业非存款类	信托公司;金融资产管理公司;金融租赁公司;汽车金融公司;贷款公司;货
	金融机构	币经纪公司
证券公	业金融机构	证券公司;证券投资基金管理公司;期货公司;投资咨询公司
保险业金融机构		财产保险公司;人身保险公司;再保险公司;保险资产管理公司;保险经纪
	1E 3E 1947 1173	公司;保险代理公司;保险公估公司;企业年金
交易及结	i算类金融机构	交易所;证券结算类机构
金融	控股公司	中央金融控股公司;其他金融控股公司
	其他	小额贷款公司



# Chapter 3: What Is Money?





# Meaning of Money

- Money (or the "money supply"): anything that is generally accepted as payment for goods or services or in the repayment of debts. (A rather broad definition)
- Money (a stock concept) is different from:
  - >Wealth: the total collection of pieces of property that serve to store value
  - ➤Income: flow of earnings per unit of time (a flow concept)





## **Functions of Money**

- Medium of Exchange:
  - Eliminates the trouble of finding a double coincidence of needs (reduces transaction costs)
  - ➤ Promotes specialization
- A medium of exchange must:
  - ▶ be easily standardized
  - > be widely accepted
  - > be divisible
  - > be easy to carry
  - > not deteriorate quickly





#### **Functions of Money**

#### • Unit of Account:

- >Used to measure value in the economy
- > Reduces transaction costs

#### • Store of Value:

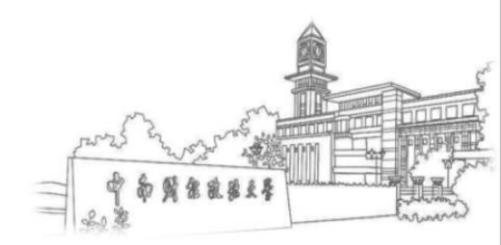
- >Used to save purchasing power over time
- >Other assets also serve this function.
- >Money is the most liquid of all assets but loses value during inflation



# **Evolution of the Payments System**

Commodity Money: valuable, easily standardized and divisible commodities (e.g. precious metals, cigarettes)

Fiat Money: paper money decreed by governments as legal tender





# **Evolution of the Payments System**

- Checks: an instruction to your bank to transfer money from your account
- Electronic Payment (e.g. online bill pay).
- E-Money (electronic money):
  - > Debit card
  - >Stored-value card (smart card)
  - >E-cash





# Are We Heading for a Cashless Society?

Predictions of a cashless society have been around for decades, but they have not come to fruition.

Although e-money might be more convenient and efficient than a payments system based on paper, several factors work against the disappearance of the paper system.

However, the use of e-money will likely still increase in the future.

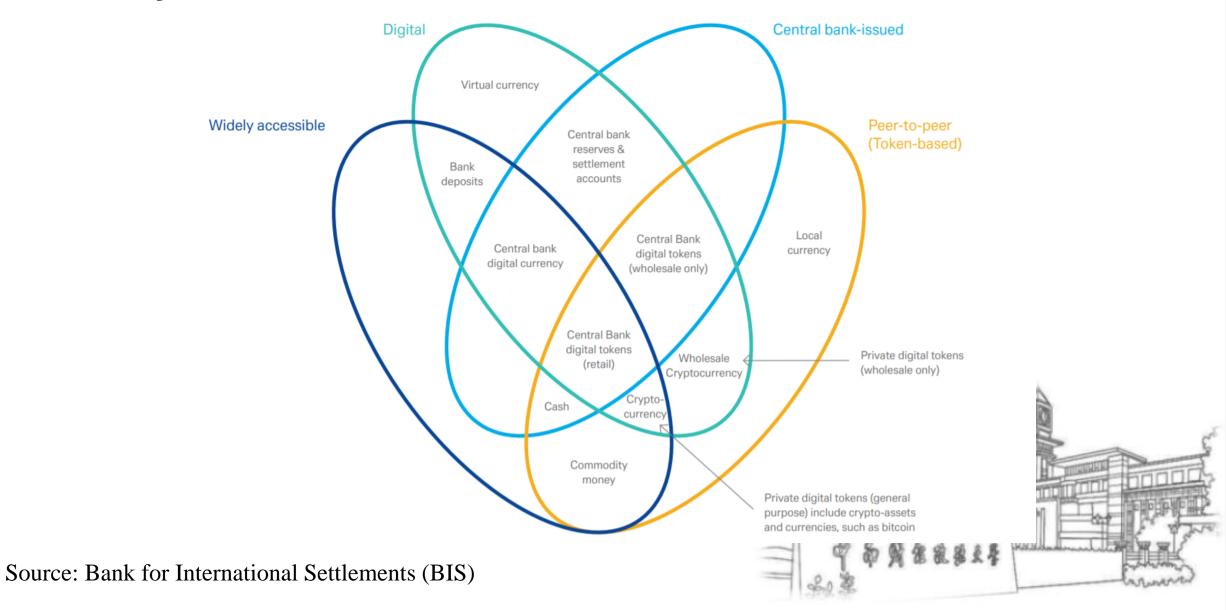
What do you think?



# Will Bitcoin Become the Money of the Future?

- Bitcoin is type of electronic money created in 2009.
- By "mining," Bitcoin is created by decentralized users when they use their computing power to verify and process transactions.
- Although Bitcoin functions as a medium of exchange it is unlikely to become the money of the future because it performs less well as a unit of account and a store of value.

# **Money Flower**



## **Measuring Money**

How do we measure money? Which particular assets can be called "money"?

Construct monetary aggregates using the concept of liquidity:

- ► M0: currency (in the hand of public + commercial bank deposits)
- ➤M1 (most liquid assets) = currency + traveler's checks + demand deposits + other checkable deposits
- ➤M2 = M1 + small denomination time deposits + savings deposits and money market deposit accounts + money market mutual fund shares

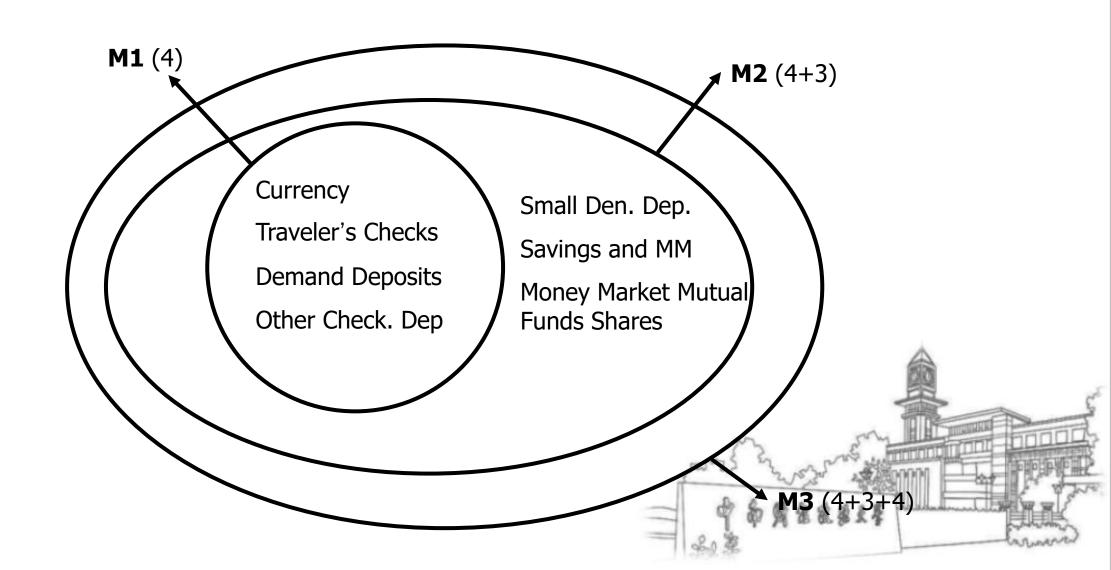


# The Federal Reserve's Monetary Aggregates

TABLE 1	Measures of the Monetary Aggregates	
		Value as of August 18, 2014, (\$ billions)
M1 = Currency		1,206.1
+ Traveler's checks		3.3
+ Demand deposits		1,089.9
+ Other checkable deposits		<u>477.4</u>
Tota	al M1	2,776.7
M2 = M1		
+ Small-denomination time deposits		533.0
+ Savings deposits and money market deposit accounts		7,338.2
+ Money market mutual fund shares (retail)		642.5
Tota	al M2	11,290.4
Source: http:	//www.federalreserve.gov/releases/h6/hist.	



## The Federal Reserve's Monetary Aggregates





# The Federal Reserve's Monetary Aggregates

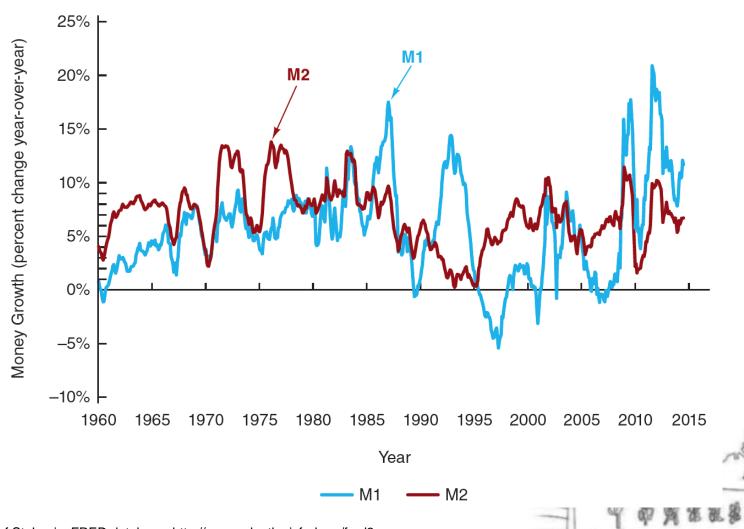
M1 versus M2: Does it matter which measure of money is considered?

➤M1 and M2 can move in different directions in the short run (see figure).

Conclusion: the choice of monetary aggregate is important for policymakers.



#### Growth Rates of the M1 and M2 Aggregates, 1960-2014





#### Where Are All the U.S. Dollars?

The more than \$4,000 of U.S. currency held per person in the United States is a surprisingly large number.

Where are all these dollars and who is holding them?

- >Criminals
- >Foreigners

Q: Will this phenomenon also be observed on CNY?



# Acknowledgment

Slides here are adopted from the official slides published by Pearson Education Ltd.

