

Chapter 1:

The Financial Sector

- ❖ Brings savers and investors together
- ❖ Divided into two parts:
 - Financial Markets
 - Direct finance. Gives investor opportunity to participate in markets
 - Stocks and bonds, securities
 - Financial Intermediaries
 - Indirect finance.
 - Banks, mutual funds, insurance companies, pension funds, investment companies
- The Shadow Banking System
 - Banks sell shares to investors instead of taking deposits, not subject to regulation

Basic Definitions

- Security (financial instrument) - is a claim on the issuer's future income or assets
- Bond - a debt security that promises to make payments periodically for a specified period of time.
- Interest rate - the cost of borrowing or the price paid for the rental of funds
- Share of stock - a claim on the residual earnings and assets of the corporation

Bond Market

- Short term treasuries are closest to 0 risk
- Bonds represent corporate debt
- Long term bonds have to pay higher interest rates than short term bonds
- During a recession, interest rates go down on treasuries, but goes up on corporate bonds

Stock Market

- Is more volatile than bond market



- Interest rates spread between three month treasury bills and corporate Baa bonds during recession and the spread reduces during economic expansion

Financial Institutions

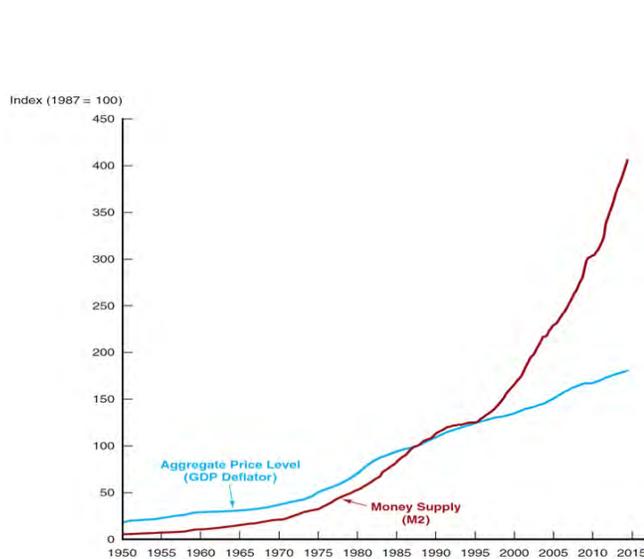
- Institutions that borrow funds from people who have saved and in turn make loans to other people.
 - Banks: accept deposits and make loans
 - Other financial institutions: mutual funds, insurance companies, pension funds, investment companies
- In recent times:
 - Financial innovation: the development of new financial products and services
 - Can be an important force for good by making the financial system more efficient
 - Changes in regulation: killing glass-steagall
 - Financial crises: major disruptions in financial markets that are characterized by sharp declines in asset prices and the failures of many financial and nonfinancial firms. 2008 financial crisis

Why study?

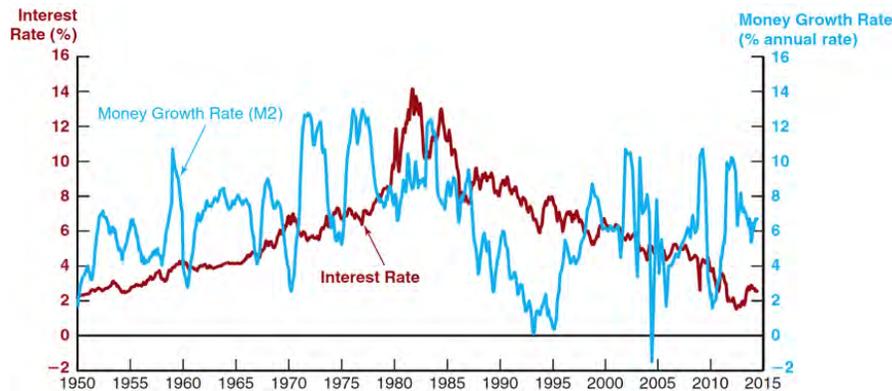
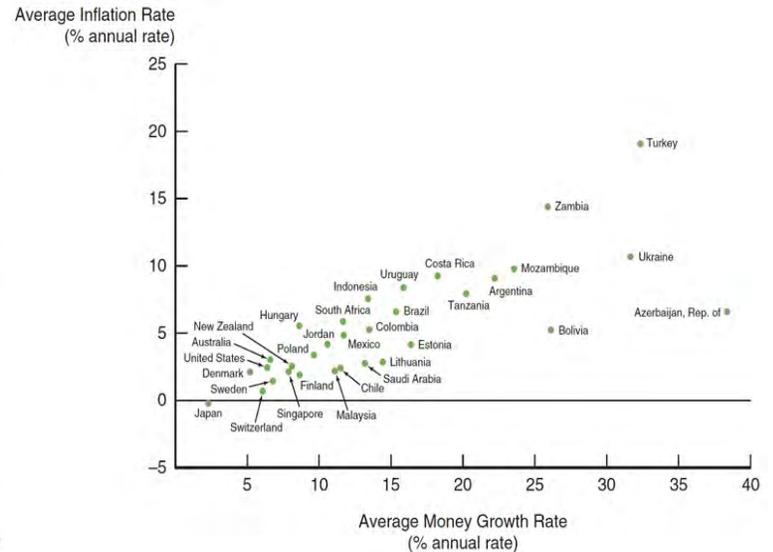
- The financial sector is the primary window for the effectiveness of monetary policy. Factors of interest are:
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- M2 growth rate increases dramatically during recession and decreases during economic expansion



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- Money growth and interest rates



- The rate of money growth is still an important determinant of interest rates, especially before 1980
- As money supply growth rate increases, interest rates increase
- The foreign sector:
 - 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 affects its monetary policy
 - How capital controls impact domestic financial systems and therefore the performance of the economy

- **Direct Finance** - stock and bond markets
- **Indirect Finance** - banks, insurance companies, mutual funds, finance companies, et.

Functions 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

Structure of financial markets

- Debt and equity markets
 - Debt instruments (maturity) + (interest)
 - Equities (dividends)
- Primary and Secondary markets
 - Investment banks underwrite securities in primary markets
 - Brokers and dealers work in secondary markets.
- Exchanges and Over-the-Counter (OTC) markets
 - Exchanges: NYSE, Chicago Board of Trade
 - OTC markets: foreign exchange, federal funds
- Money and Capital Markets
 - Money markets deal in short-term debt instruments
 - Capital markets deal in longer-term debt and equity instruments

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: US dollars deposited in foreign banks outside the US or in foreign branches of US banks
- World Stock Markets: also help the federal government

Functions of Financial Intermediaries

1. **Lower transaction costs (time and money spent in carrying out financial transactions)**
 - a. Economies of scale
 - b. Liquidity services
2. **Reduce the exposure of investors to risk**
 - a. Risk sharing (Asset transformation)
 - b. Diversification
3. **Deal with asymmetric information**
 - a. **Adverse Selection** (before transaction): try to avoid selecting the risky borrower by gathering information about them
 - b. **Moral Hazard** (after transaction): ensure borrower will not engage in activities that will prevent him/her to repay the loan.
 - i. Sign a contract with restrictive covenants.

Conclusion

- Financial intermediaries allow "small" savers and borrowers to benefit from the existence of financial markets
 - Depository institutions (banks), contractual savings institutions, investment intermediaries.
- Reasons for regulation of the financial system
 - To increase the information available to investors:
 - Reduce adverse selection and moral hazard problems
 - Reduce insider trading (SEC)
 - 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

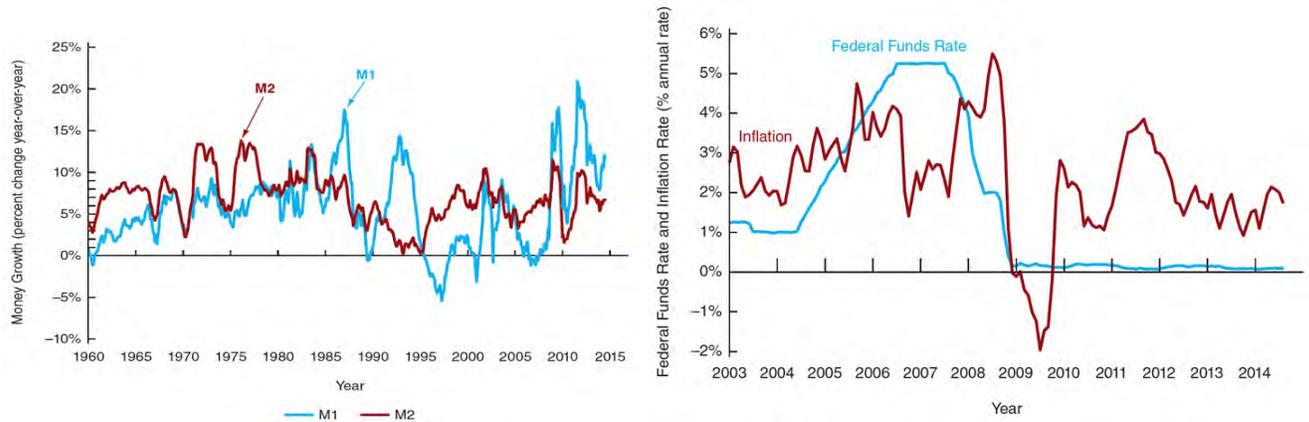
Regulatory agencies of the financial system:

- SEC, CFTC, Office of the Comptroller of the Currency, NCUA, State banking and insurance commissions, FDIC, Fed

Chapter 3: What is Money?

- ❖ **Money**: anything that is generally accepted as payment for goods or services or in the repayment of debts
- ❖ 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)

- ❖ Basic types of money
 - Commodity money: has intrinsic value (shells, gold, silver, copper, rice, salt)
 - Representative money: backed up by and can be exchanged for a commodity (coins, certificates, etc.)
 - Fiat money: government decreed, not backed by gold
 - Electronic money: computerized banking, evolving
- ❖ **The Basic 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
 - **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
 - Barter: exchange one item for another, no common currency
 - Commodity money: valuable, easily standardized and divisible commodities (precious metals, cigarettes)
 - Representative: backed up
 - Fiat money: paper money decreed by governments as legal tender
 - Checks: an instruction to transfer money from your account
 - Electronic payment: online bill payment
 - Emoney (bitcoin, debit card, smart card, e-cash)
 - Innovation will continue
- ❖ Will bitcoin become the money of the future?
 - Bitcoin is a 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
- ❖ Are we headed 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
- ❖ Measuring money
 - Construct money aggregates using the concept of liquidity (M1 and M2)
 - **M1 (most liquid assets): currency + travelers checks + demand deposits + other checkable deposits**
 - **M2 (adds to M1 other assets that are not so liquid): M1 + small denomination time deposits + savings deposits + money market deposit accounts + money market mutual fund shares**
 - M1 and M2 can move in different directions in the short run, but for the most part move together in the long run
 - Conclusion: the choice of monetary aggregate is important for policymakers
 - Why: ???



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- ❖ Where are all the US dollars?
 - The more than \$4000 of US currency per person in the US is mostly held by criminals and foreigners

Chapter 4: The Meaning of Interest Rates

Yield to maturity - most accurate measure of interest rate, this the term economists use for it.

- ❖ Measuring interest rates
 - Present value: a dollar paid to you one year from now is less valuable than a dollar paid to you today. Why: a hundred dollars deposited to you today can earn interest and become $\$100 \times (1 + i)^n$ one year from today. (Future value)

PV = today's (present) value

CF = future cash flow (payment)

i = the interest rate

$$PV = \frac{CF}{(1 + i)^n}$$

- ❖ Four types of credit market instruments

- **Simple loan**
- **Fixed payment loan**
- **Coupon bond** - a bond sold when interest rates are high will sell for more when interest rates are lower
- **Discount bond** -

- ❖ **What is yield to maturity?**

- **The interest rate that equates the present value of cash flow payments received from a debt instrument with its value today. YTM refers to the rate of return you get if you buy a bond and hold it to maturity. Yield to maturity (YTM) is the total return anticipated on a bond if the bond is held until it matures. Yield to maturity is considered a long-term bond yield but is expressed as an annual rate**

- **Yield to maturity on a simple loan**

PV = amount borrowed = \$100

CF = cash flow in one year = \$110

n = number of years = 1

$$\$100 = \frac{\$110}{(1 + i)^1}$$

$$(1 + i) \$100 = \$110$$

$$(1 + i) = \frac{\$110}{\$100}$$

$$i = 0.10 = 10\%$$

For simple loans, the simple interest rate equals the yield to maturity

- **Yield to maturity of a fixed payment loan**

- Yield to Maturity is the rate of interest that equates LV to its P
- The i that makes LV equal to the actual loan is the Yield to Maturity