Introduction to Financial and Money Markets

Economics 301: Money and Banking

Goals and Learning Outcomes

- Goals:
  1. Gain familiarity with money and financial market concepts
  2. Define what is money and describe how quantity of money in the economy is measured
  3. Define financial crisis and broadly describe 2009 financial crisis
  4. Appreciate the importance of studying these markets.
- Learning Outcomes:
  - LO1: Describe how financial markets affect the overall functioning of the economy.
  - LO2: Define different measures of money, and analyze a market for money to predict changes in interest rates and the quantity of money in the economy.
  - LO3: Predict changes in interest rates using fundamental economic theories including present value calculations, behavior towards risk, and supply and demand models of money and bond markets.

Reading and Exercises

- Key components of the financial system: Chapter 1, pp. 2-5
- Financial institutions: Chapter 1, pp. 4-15
- Financial crises: Chapter 1, pp. 15-18
- Functions of money: Chapter 2, pp. 28-32
- Payments systems: Chapter 2, pp. 32-29
- Money supply: Chapter 2, pp. 40-48
- **Canvas quiz on financial and monetary markets due Wed 11:59 PM**.
  Quizzes are multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
- **Homework/Exercise due Fri 11:59 PM**. We will work together in class on Thursday

Financial Markets

Financial Markets: markets in which funds are transferred from people or institutions that save to those who want to borrow.

Banking and financial institutions: These are what make financial markets work. These businesses make a profit by moving funds around the economy.

New York Stock Exchange

Market for Money

Market for Money: supply and demand framework for money.

Money: Something generally accepted as a means of payment, typically earning little to no interest.

Monetary Policy: actions by a *country's central bank* to influence interest rates and/or change the money supply.

Assets

Asset: Anything of value that can be owned. That is anything that can be converted for a means of payment.

Security: *tradable* asset issued by an institution which is a claim on the institution's assets or future income.

Financial Intermediaries

Financial intermediary: A financial firm such as a bank which borrows money from savers and lends money to borrowers.

Most common source of financing for individuals and small businesses.

Financial Markets

Financial Markets: A market for businesses to obtain funds *directly from savers*.

Common for large, widely recognized businesses that can credibly communicate its profitability.

Primary markets: markets where stocks, bonds, or other securities are sold for the first time.

Secondary markets: markets where stocks, bonds, and other securities are traded.

New York Stock Exchange

Bond Markets

- **Bond:** Debt security that promises to make payments periodically for a specified period of time.
- **Interest rate:** cost of issuing a bond, or income received from owning a bond. Typically expressed as a percentage of the bond price.
- Lots of different interest rates:
  - Consumer interest rates: mortgage rates, car loan rates, credit card rates, savings account rates, certificates of deposit rates etc.
  - Government bond rates: Treasury bill rate (Federal government debt), state and local government bonds.
  - Corporate bond rates.
  - Federal reserve rates: discount rate, federal funds rate.

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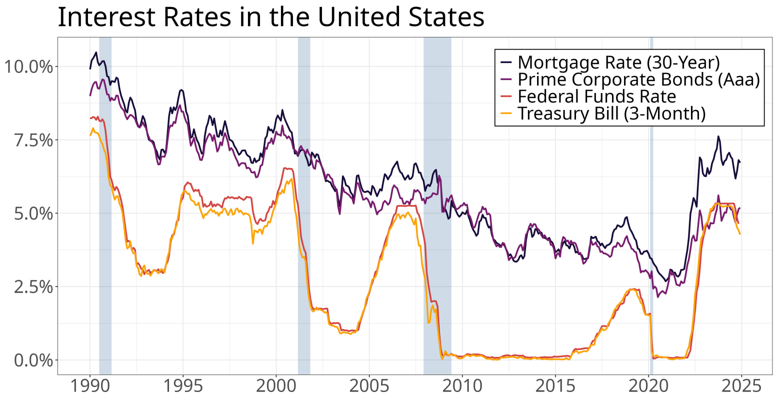
Interest Rates



Importance of Interest Rates

- Interest rates affect the macroeconomy through producers.
  - What do macroeconomists mean by the word, "investment"?
  - An increase in interest rates causes firms to _______ their investment spending.
  - An increase in investment spending causes a(n) _______ in future production possibilities.
- Interest rates affect the macroeconomy through consumers.
  - What impact does an increase in interest rates have on consumers?

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Macroeconomic Activity

- The market for money is very closely linked to economic variables that influence the health of the economy.
- **Business Cycles:** upward and downward movement over time of measures of the health of the economy.
- **Aggregate output**, aka **aggregate production**, aka **real gross domestic product:** measure of the total amount of production of goods and services in an economy.
- **Unemployment rate:** percentage of the *labor force* that is not employed.
- **Recession:** broadly defined as a significant decline in economic activity that is spread across the economy and lasts more than a few months.

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What is a recession?

- The National Bureau of Economic Research's (NBER) Business Cycle Dating Committee maintains a history of U.S. business cycles.
- NBER identifies dates of peaks and troughs. Peak generally interpreted as the start of the recession, trough is the end.
- They consider dozens of variables related to production, employment, and earnings.
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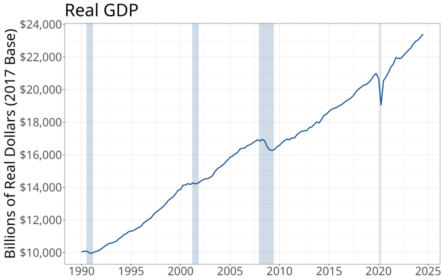
Business Cycles in the United States



"Well, so long, Eddie. The recession's over."

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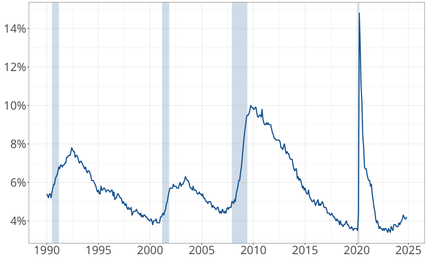
Unemployment Rate



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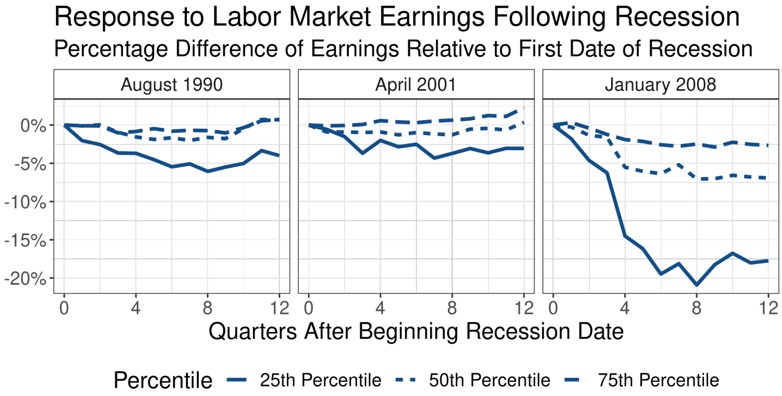
Recession Experiences Across Income Distributions



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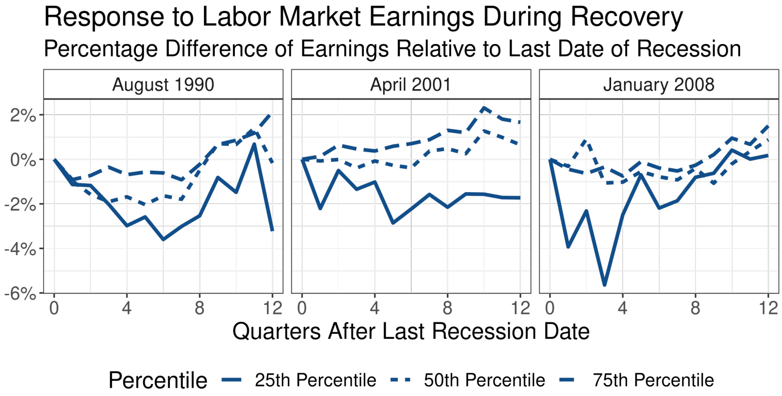

Price Level and Inflation

- **Price level:** measure of the overall level of prices in the economy.
  - Consumer Price Index: Price of a "basket of goods", scaled to equal 100 in base year.
  - GDP Deflator: Ratio of nominal GDP to real GDP, scaled to equal 100 in base year.
- **Inflation:** growth rate of price level.
  - In long run, money growth rate tends to equal inflation rate.
  - In short run though, there can be big fluctuations.
- **Stagflation:** When there is stagnation & inflation. Happens with cost/supply shocks.

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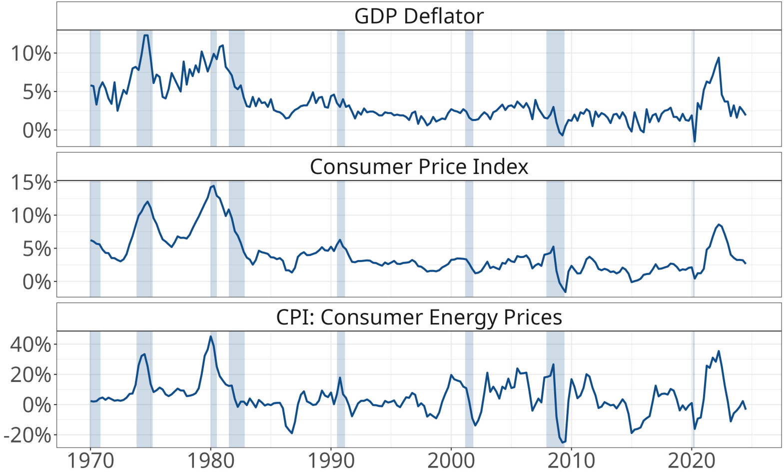
Measures of U.S. Inflation



Financial Crisis

- **Financial Crisis:** Widespread steep decline in asset values throughout the economy, causing financial institutions, businesses, and consumers unable to pay much of their debts.
- Prices of financial assets are often based on expectations of value. Shocks to the economy can cause sudden large reverses in expectations.
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Origins of the 2009 Financial Crisis

- Housing market bubble: ever-rising house prices led banks/borrowers to expect:
  - borrowers to be able to pay off or refinance adjustable rate mortgages.
  - even sub-prime borrowers could sell their house and avoid default.
  - valuable collateral in event of a default.
- Securitization of mortgages.
  - **Mortgage-Backed Securities (MBS):** Tradeable financial assets constructed from a pool of mortgages.
  - **Collateralized Debt Obligations (CDO):** Tradeable financial assets constructed from a pool of loans and other assets.
  - These can be good. They pool risk.
  - These can be bad. They can *mask* risk. Eg: CDO's with other CDO's in the pool.

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What is Money?

- Money is a commodity or token that is generally acceptable as a means of payment
- **Fiat currency:** Currency with no inherent value
- **Commodity money:** Opposite of a fiat currency, using something with an inherent value as currency
- Today the U.S. dollar is a fiat currency
- Informal markets using commodity money:
  - WW2 prisoners of war used to use cigarettes as currency
  - Recent times: Prisoners have used Ramen noodles as currency
  - NPR Story: Ramen Noodles...
- From 1889-1932 and from 1946-1971 the U.S. would redeem dollars for gold (Gold Standard)
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  - NPR Story: Ramen Noodles...
- From 1889-1932 and from 1946-1971 the U.S. would redeem dollars for gold (Gold Standard)
- Since the late 1970s most world currencies are fiat currencies

What is Money?

- Money is a commodity or token that is generally acceptable as a means of payment
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- **Commodity money:** Opposite of a fiat currency, using something with an inherent value as currency
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Functions of Money

- Money has three important functions:
  - Medium of exchange
  - Unit of account
  - Store of value.
- **Legal tender:** Government recognized currency to be widely used for payments, and is accepted for payments to the government taxes, fees, payments for services, etc.

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Functions of money

- Medium of exchange: eliminate the need for a double coincidence of wants.
- Unit of account: an agreed measure for stating the relative prices of goods and services.
- Store of value:
  - Money can be held and used for later consumption.
  - Money is not unique in this aspect. Stamps, baseball cards, houses, even computers and TV's can be stores of value.
  - With inflation, the value of money falls. Therefore, currencies that undergo hyperinflation cannot meet this function.

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Official Measures of money

- Two primary forms of money: Currency and Deposits.
- Two measures of money called **M1** and **M2**
- M1: currency + demand deposits (eg: checkable deposits) + other liquid deposits (eg: savings accounts).
  - These are immediate means of payment
- M2: M1 + time deposits + money market mutual funds.
  - The additional items in M2 can *quickly* be converted into a means of payment.
- **Liquidity**: the property of an asset being quickly converted to a means of payment, with little to no cost.

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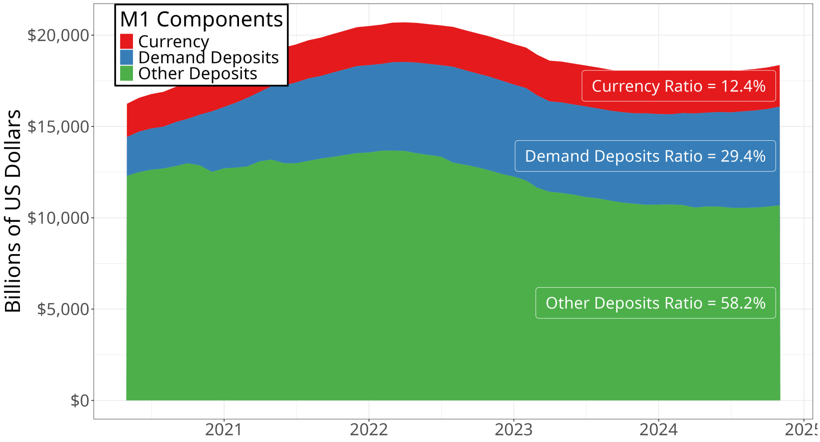
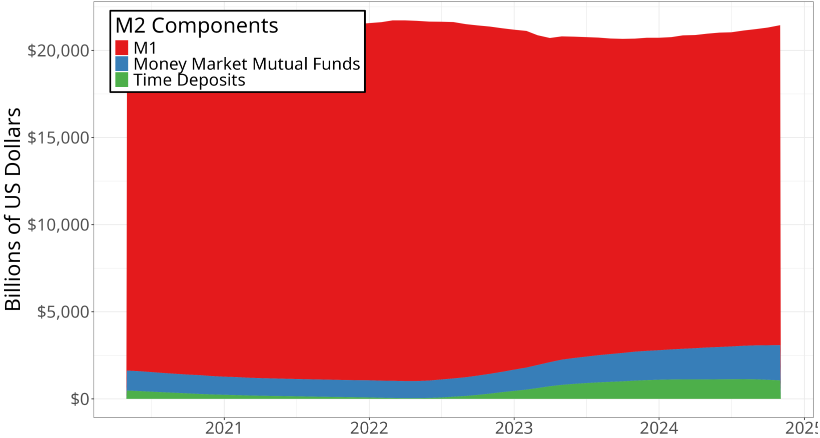
Official M1 Measures of Money



Official M2 Measure of Money



Hyperinflation in Venezuela

- The inflation rate in Venezuela in varied from 5,000% - 2,000,000% in 2018-2019
- Country in an economic and financial crisis since 2012
- President Nicolas Maduro introduced new 100,000 Bolívar note in Nov 2017
  Nov 2017: 1 USD $\approx$ 2.5 VES
- Sept 2018: 1 USD $\approx$ 250,000 VES
- Informal dollarization began in 2019: Many transactions use USD.
- Introduced 1 million Bolívar in 2021
- Re-denominated in Oct 2021, 100 Bolívar new note = 100,000,000 old denomination

Hyperinflation in Zimbabwe

- The inflation rate in Zimbabwe reached a high November 2008 at 89,700,000,000,000,000,000,000%
- Prices doubled or even quadrupled *each day*
- In 2007, a loaf of bread cost 5 ZWD
- Nine months later loaf of bread cost 50 billion ZWD
- In 2015, 35 quadrillion ZWD (35,000,000,000,000,000 ZWD) traded for 1.00 USD

Forms of Payment

- Checks: Contracts to pay on demand deposits held in a bank or financial institution.
  - Checks are not money, but the balance of demand deposits is part of M1
- Debit cards: Look like credit cards but function as checks with greater speed, pay deposits held in a bank to a merchant
- Credit cards: Loans from a financial institution to pay to a merchant.
  - Credit cards aren't money, but each transaction *eventually* involves multiple transactions involving money.
  - When you pay with a credit card to don't give the merchant money, the credit card company does.
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Modern Forms of Payment

- Payment apps such as Apply Pay, Google Pay, Venmo: Function like debit cards, connect your checking account information to the app.
- ACH transactions (Automatic Clearing House): Electronic transactions in and out of checking or savings accounts
- Private cryptocurrencies such as Bitcoin. Is it money?
  - Electronically-defined asset with limited quantity
  - (1) Medium of exchange, (2) store of value, and (3) unit of account
  - Legal tender in El Salvador and Central African Republic
  - It's not a U.S. official measure of money
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Reading and Exercises

- Key components of the financial system: Chapter 1, pp. 2-5
- Financial institutions: Chapter 1, pp. 4-15
- Financial crises: Chapter 1, pp. 15-18
- Functions of money: Chapter 2, pp. 28-32
- Payments systems: Chapter 2, pp. 32-29
- Money supply: Chapter 2, pp. 40-48
- **Canvas quiz on financial and monetary markets due Wed 11:59 PM**.
  Quizzes are multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
- **Homework/Exercise due Fri 11:59 PM**. We will work together in class on Thursday