

International Financial System

Financial Markets

- What are Financial markets?
- Mechanisms where funds are transferred
 - from a surplus of liquidity
 - To a deficit of liquidity
- But who is holding the liquidity?
 - people and firms

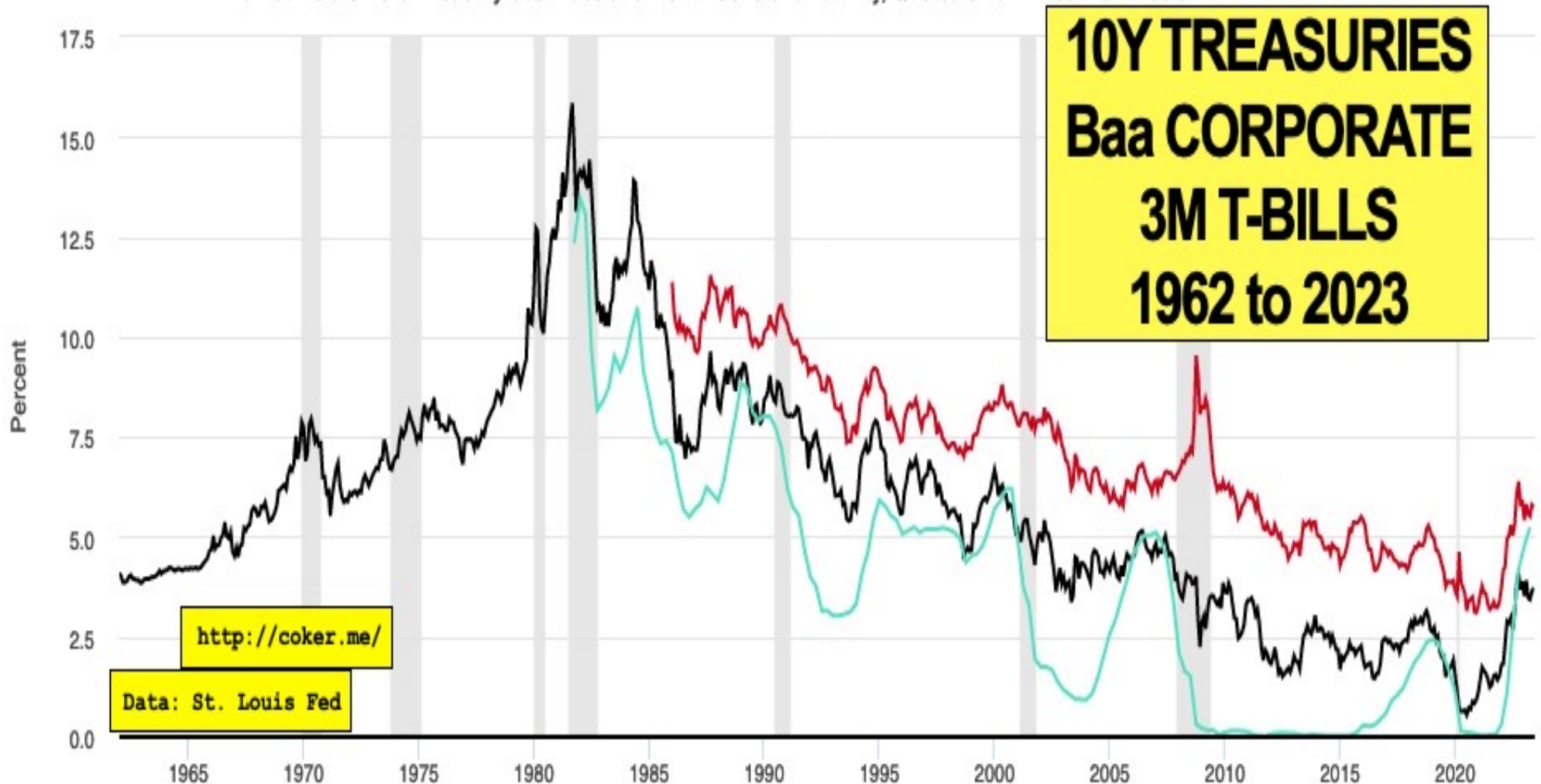
The Bond Market and Interest Rates

- A **security** (financial instrument) is a claim
 - on the issuer's future income or assets
- A **bond** is a debt security
 - 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

Interest Rates on Selected Bonds, 1950–2017

FRED 

- Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity, Quoted on an Investment Basis
- Moody's Seasoned Baa Corporate Bond Yield
- Market Yield on U.S. Treasury Securities at 3-Month Constant Maturity, Quoted on an Investment Basis



Shaded areas indicate U.S. recessions.

Sources: Board of Governors; Moody's

fred.stlouisfed.org

How do interest rates impact availability of funds?

- Factors that drive savings or borrowing?
- What do people do when rates are high?
- What do businesses do when rates are low?
- Where does the money originate from?

Aggregate Supply for Loanable Funds

– Supply of loanable funds

- Funds are provided to financial markets by:
 - **Households** (net suppliers of funds)
 - **Government** units and **businesses** (by a smaller amount as they are net borrowers of funds)
- Suppliers of loanable funds supply more funds at higher interest rates

Aggregate Supply for Loanable Funds

- **Supply of loanable funds**
 - Foreign households, governments, and corporations supply funds by purchasing domestic **corporate and Treasury securities**
 - Supply is influenced by **monetary policy**
 - implemented by the Central Bank (BoE)
 - BoE controls reserves held by depository institutions
 - Supply curve shifts in response to **economic conditions**
 - Economic growth, taxation etc.,

Equilibrium of Loanable Funds-interest rate

- **Equilibrium interest rate** - algebraic
 - The aggregate demand can be written as

$$D_A = D_h + D_b + D_g + D_f$$

- The aggregate supply can be written as

$$S_A = S_h + S_b + S_g + S_f$$

Economic Forces Affecting Interest Rates

- **Fisher effect**

- Fisher effect equation:

$$i = E(INF) + i_R$$

- The difference between the nominal interest rate and the expected inflation rate is the **real interest rate**:
$$i_R = i - E(INF)$$

- Real interest rate more accurately reflects true cost of borrowing
- When real rate is low, greater incentives to borrow and less to lend

Economic Forces That Affect Interest Rates (cont'd)

- **Fisher effect**
- If the actual inflation rate is **higher** than anticipated then **borrowers benefit** : $i_{t+1} < E_t(i_{t+1})$
- If the actual inflation rate is **lower** than anticipated then **lenders benefit** : $i_{t+1} > E_t(i_{t+1})$
- Forecasting inflation is crucial

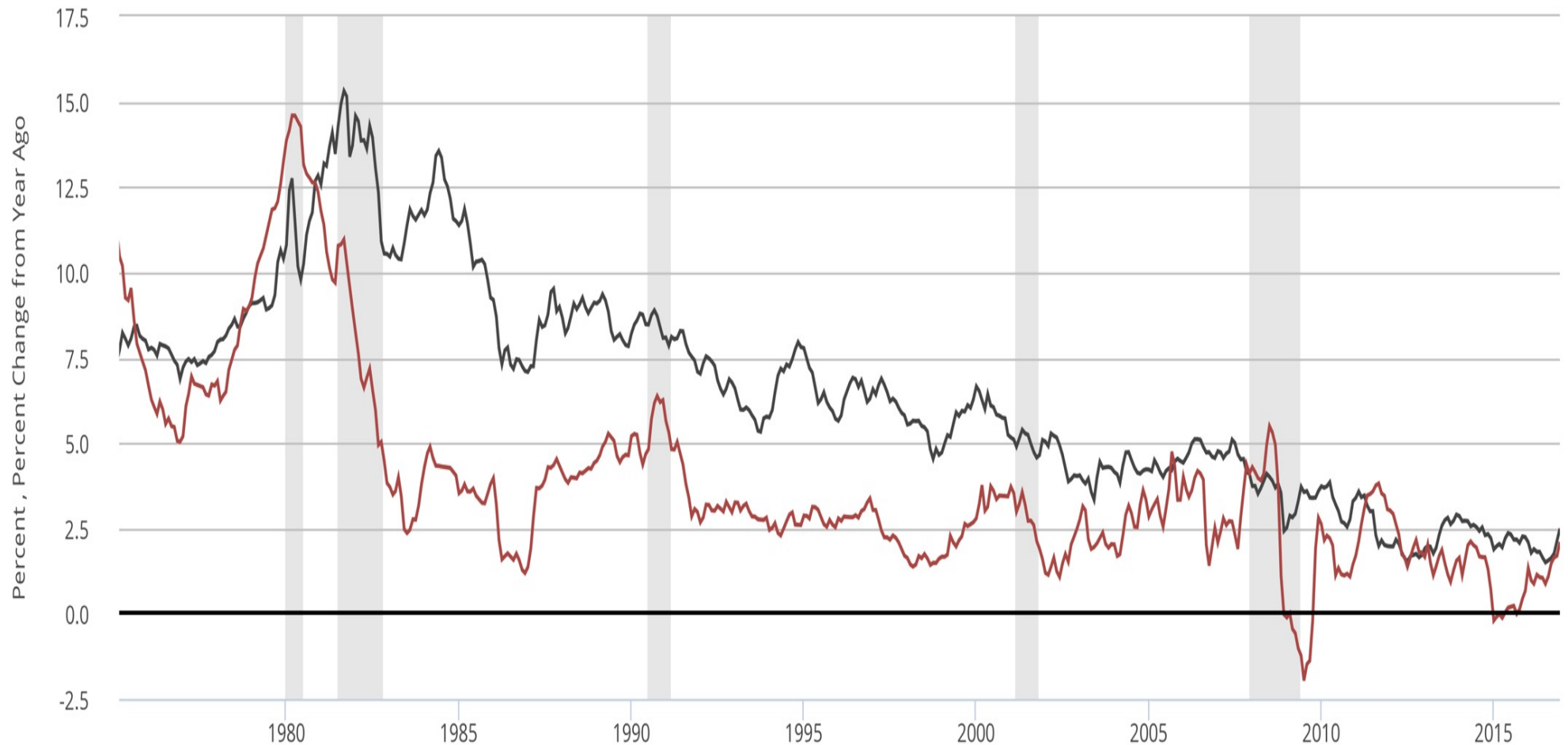
Distinction Between Real and Nominal Interest Rates

- If $i = 3\%$ and $E(\text{inflation}) = 1\%$ then
 - $i_r = 3\% - 1\% = 2\%$
- If $i = 3\%$ and $E(\text{inflation}) = 3.5\%$ then
 - $i_r = 3\% - 3.5\% = -0.5\%$

Distinction Between Real and Nominal Interest Rates



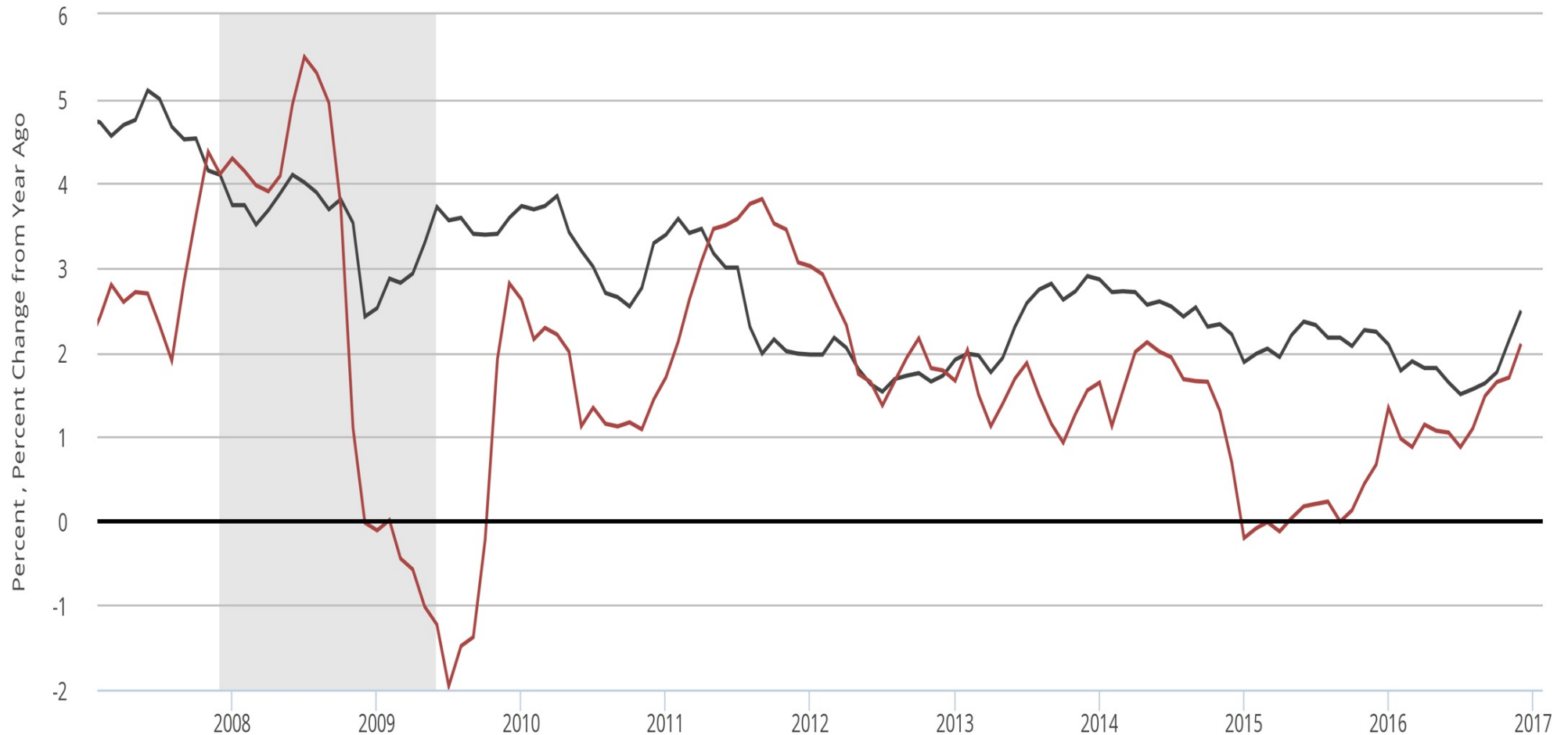
— 10-Year Treasury Constant Maturity Rate
— Consumer Price Index for All Urban Consumers: All Items



Distinction Between Real and Nominal Interest Rates



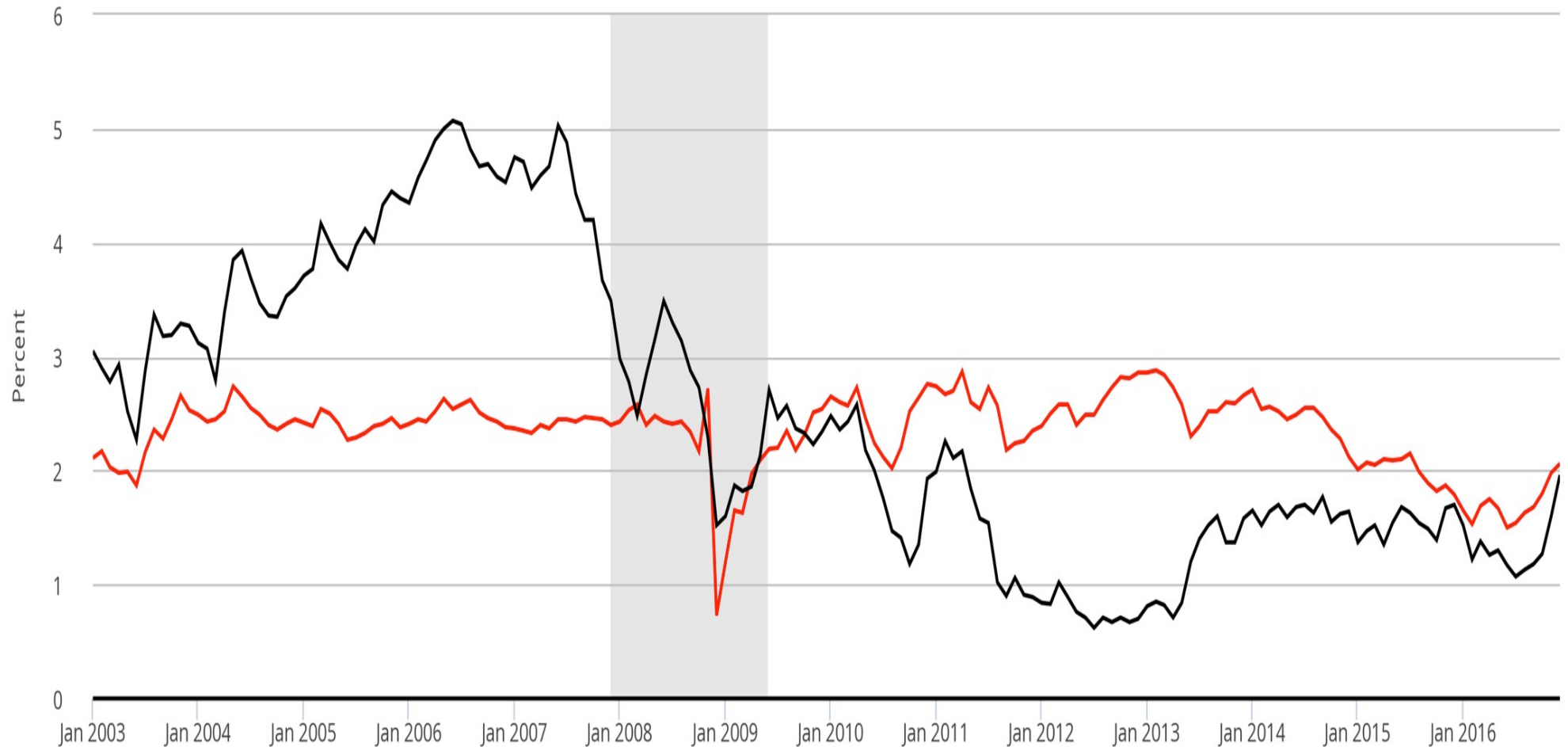
— 10-Year Treasury Constant Maturity Rate
— Consumer Price Index for All Urban Consumers: All Items



Distinction Between Real and Nominal Interest Rates



— 5-Year, 5-Year Forward Inflation Expectation Rate
— 5-Year Treasury Constant Maturity Rate



20M break

The Stock Market

- **Common stock** represents a share of ownership in a corporation.
- A **share of stock** is a claim on the residual earnings and assets of the corporation.

Background on Stocks

- **A stock is a certificate representing partial ownership in a corporation**
- **Stock is issued by firms to obtain long-term funds**
- **Owners of stock:**
 - Can benefit from the growth in the value of the firm
 - Are susceptible to large losses
- **Individuals and financial institutions are common purchasers of stock**
- **Private Equity**
- **Public Equity**

BACKGROUND

- What do we mean by Equities?
- Instrument denoting ownership
- Entitles holder to claim on profits
- A way for entities to raise money
- Significant component of the firm's capital structure

TERMINOLOGY

- Par aka face
 - de minimis smallest amount shares can be sold for
 - represents original capital
 - may be fully or partially paid
- Share certificate
 - issued by the registrar
 - denotes ownership
 - Declining in favour of book entry

TERMINOLOGY

- Classes
 - Ordinary or Preference (UK)
 - Common or Preferred (US)
- Dividend
 - Owners claim on profits
 - Not always cash
- Finer notes about dividends
 - UK must be paid from operating income
 - US can be paid from retained earnings

CLASSES

- Ordinary (common)
 - Carries voting rights (but may be distorted)
 - Entitled to a dividend
 - High risk (what about reward?)
- Preference (preferred)
 - Debt equity hybrid
 - Carries coupon
 - Can't vote but higher in liquidation
 - Lower risk than common (and reward?)
- Each class is attractive to specific investors
- There may be multiple issues of each class

MARKET CHARACTERISTICS

- Exchange driven
 - US (NYSE, AMEX, NASDAQ)
 - UK (LSE, AIM)
- Some OTC
 - “dark pools of liquidity”
 - Very centralised market
 - Ample derivatives - “complete market”

Factors impacting the Price of Common Stock

- GDP
- CPI
- Currency exchange rates
- Interest (risk free) rates

20M break

Computing the Price of Common Stock

- Valuing common stock
 - Similar to valuing debt securities
 - **determine future cash flows & discount**
 - at an appropriate discount rate
- Price Earnings Method
- Dividend Discount Model
- Free Cash Flow Model

Initial Public Offerings

- An IPO
 - **first-time offering** of shares by a specific firm to the public
 - If additional funds needed there are be other offers
- An IPO
 - May be used to obtain new funding
 - Offer VC firms a way to cash in their investment

Initial Public Offerings

- **Process of going public**

- An **investment banking firm** normally serves as the **lead underwriter for the IPO**
- Developing a **prospectus**
 - The issuing firm develops **and files it with the SEC**
 - **Aka, S-1**
 - Contains **detailed information** about the firm, includes **financial statements** and a discussion of **risks**
 - Once approved by the FA, the prospectus is **sent to institutional investors**
 - Underwriters and managers meet with institutional investors in the form of a **“road show”**

Initial Public Offerings

– Process of going public

– Pricing

- The offer price is determined by the **lead underwriter**
- During the **road show**, the number of shares demanded at various prices is assessed
- Builds up demand curve
- Risk of leaving “**money on the table**”

– Transaction costs

- The issuing firm typically pays **7% of the funds** raised
- Additional costs from **legal and financial advisers**
- **Total cost** may reach **10% of total offering**

- BUT – highly negotiable

- Facebook went public and paid zero

Initial Public Offerings

■ Underwriter efforts to ensure price stability

□ The lead **underwriter's performance** can be measured by the **movement in the IPO shares following the IPO (reputation)**

■ If stocks placed by a securities firm perform poorly, **investors may no longer purchase shares underwritten by that firm**

□ The underwriter may require a **lockup provision**

■ Prevents the original owners from selling shares for a specified period (downward pressure on the price)

■ **When the lockup period expires the share price commonly declines significantly**

Initial Public Offerings

- Timing of IPOs
 - IPOs tend to occur more frequently during **bullish stock markets**:
Prices are typically higher
 - In the 2008 crisis, low EPS, many firms withdrew their IPO plans
- Initial returns of IPOs
 - First-day return **averaged about 20 percent** over the last 30 years
 - In 1998, the mean one-day return for Internet stocks was 84 percent (e.g. Market Watch.com \$17, \$130, \$97.5. One day return= 474%).
Indicates underpricing
- Long-term performance following IPOs
 - IPOs **perform poorly on average over a period of a year or longer**: (Many IPOs are overpriced at the time of issue: Market Watch,com->\$3 in few years)

Initial Public Offerings

Abuses in the IPO Market

- **Spinning**
 - Underwriters give shares of an IPO, especially a popular issue, to major executives in some company unrelated to the company issuing the IPO. These executives return the favour by recommending that their clients do business to the underwriter or broker
- **Laddering**
 - Underwriters require their customers to buy additional shares of the issuer in the aftermarket as a condition for receiving shares at the offer price. Can create upward price momentum
- **Excessive commissions**
 - Brokers charge high commissions when demand is high. Investors are willing to pay hoping they can recover the costs from the returns of the first day

Secondary Stock Offerings

- A secondary stock offering is:
 - A new stock offering by a firm whose stock is already publicly traded
 - Undertaken to raise more equity to expand operations
 - Usually facilitated by a **securities firm**
- **Timing:** when the market price is relatively high and the prospects are favorable. (price initially falls)
- Existing shareholders often have the **preemptive right** to purchase newly-issued stock
 - Will protect their position
 - Prevents *dilution*

NASDAQ, S&P 100, S&P 500

\$COMPQ Nasdaq Composite INDX

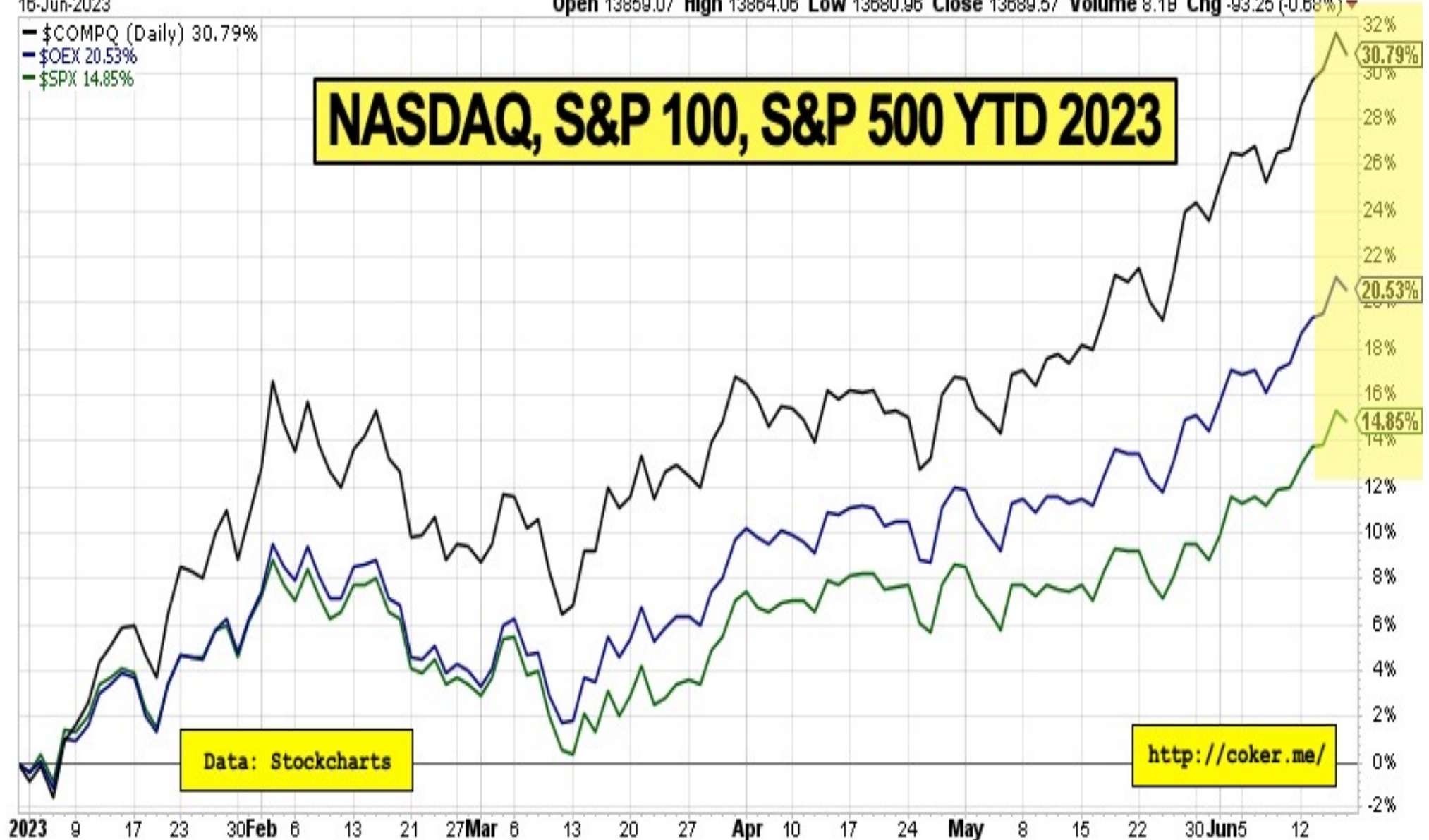
16-Jun-2023

Open 13859.07 High 13864.06 Low 13880.96 Close 13889.57 Volume 8.1B Chg -93.25 (-0.68%)

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— \$COMPQ (Daily) 30.79%
— \$OEX 20.53%
— \$SPX 14.85%

NASDAQ, S&P 100, S&P 500 YTD 2023



Private Equity

- Owners cannot sell their shares to the public
- Common for **new businesses**: large amount of stock needed to go public (\$50m)
- **Venture Capital Funds**
 - Willing to invest for long periods (5-10 years)
 - Venture capital conferences
 - VC investors set requirements on performance and strategy
 - Exit: VC sells its stake back to the firm or to the public if IPO
- **Private Equity Funds**
 - Take over firms and manage them (restructuring).
 - Sell their stake to other firms for much higher price

Financial Institutions and Banking (1 of 3)

- **Financial intermediaries:** institutions that borrow funds from people who have saved and in turn make loans to people who need funds.
 - **Banks:** accept deposits and make loans
 - Other financial institutions: insurance companies, pension funds, mutual funds

Financial Institutions and Banking (2 of 3)

- **Financial innovation:** the development of new financial products and services
 - Can be an important force for good by making the financial system more efficient
 - E-finance: the ability to deliver financial services electronically

Financial Institutions and Banking (3 of 3)

- **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.

20M break

Money and Monetary Policy

- Evidence suggests that money (or money supply), defined as anything that is generally accepted as payment for goods or services or in the repayment of debts, 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 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, Business Cycles, and Inflation

- Evidence suggests that money plays an important role in generating business cycles.
- The rate of money growth has declined before almost every recession, indicating that changes in money might be a driving force behind business cycle fluctuations

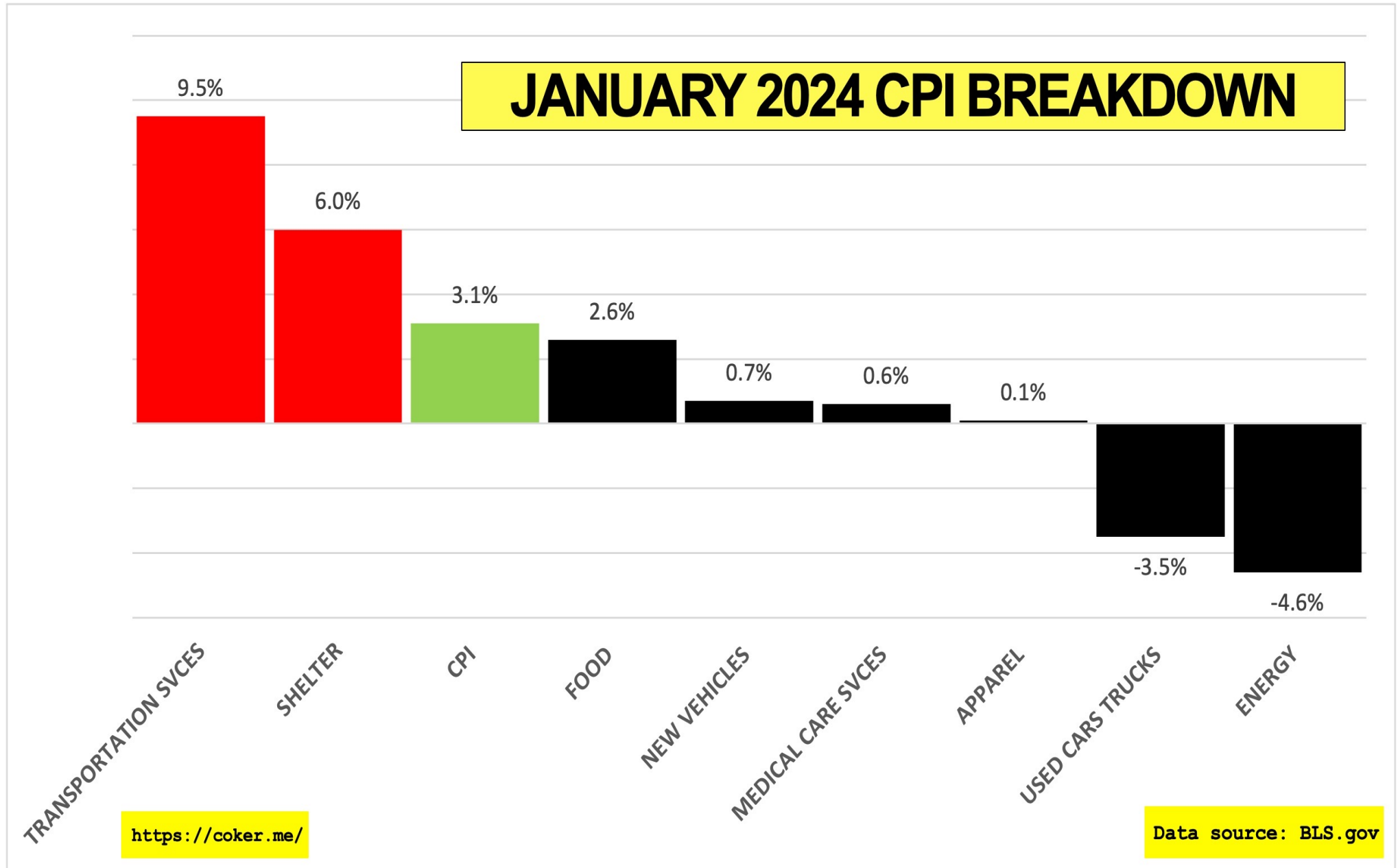
Money, Business Cycles, and Inflation

- 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 show a connection between the money supply and the price level

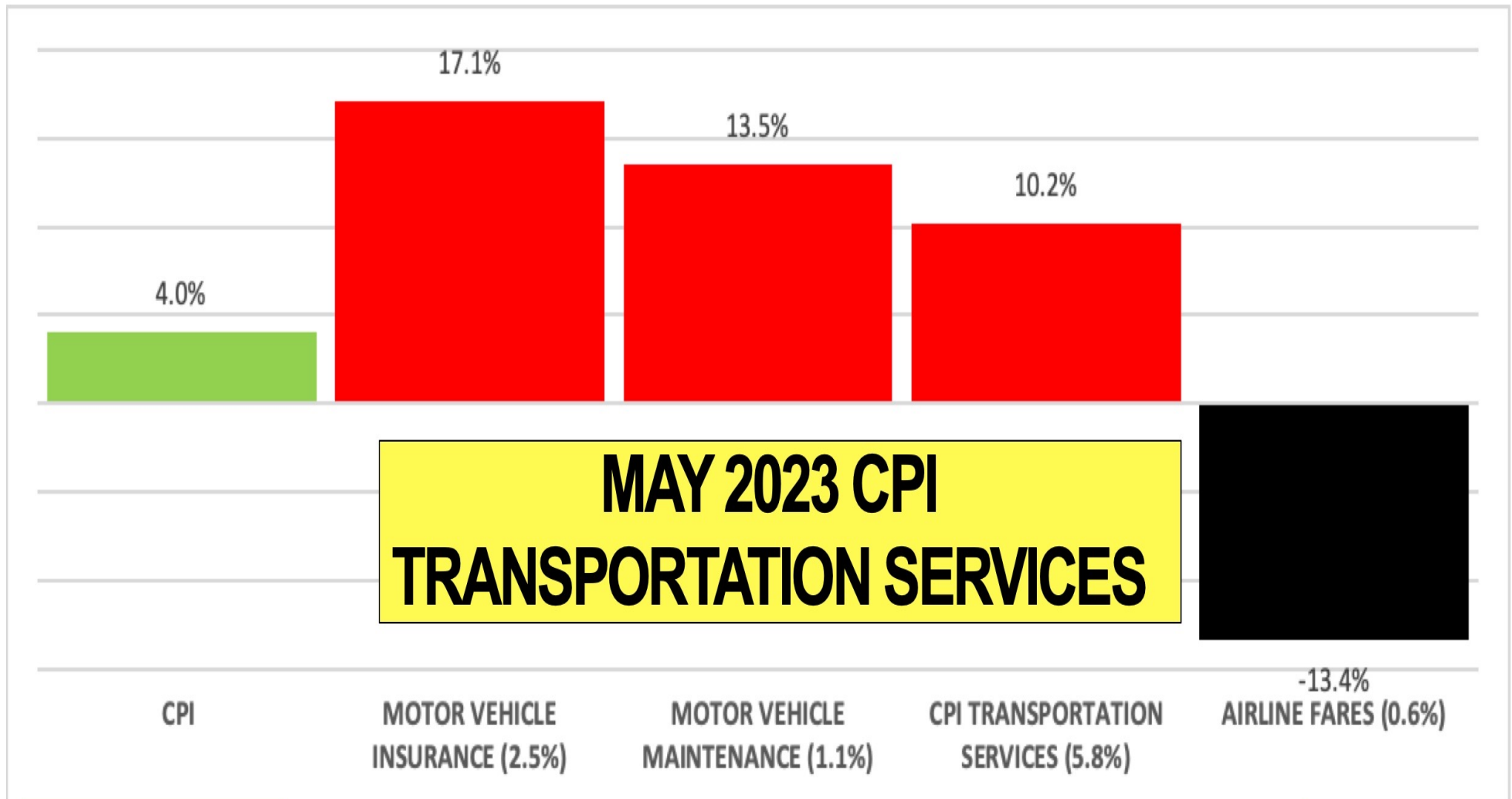
Inflation

- Is inflation good or bad?
- Producer and consumer price indexes
 - The **PPI** measures prices at the wholesale level
 - The **CPI** measures prices on the retail level
 - Both indexes are used to forecast inflation
 - Agricultural and housing price indexes also exist
- Other indicators
 - Wages, oil prices, transportation costs, the price of gold, indicators of economic growth

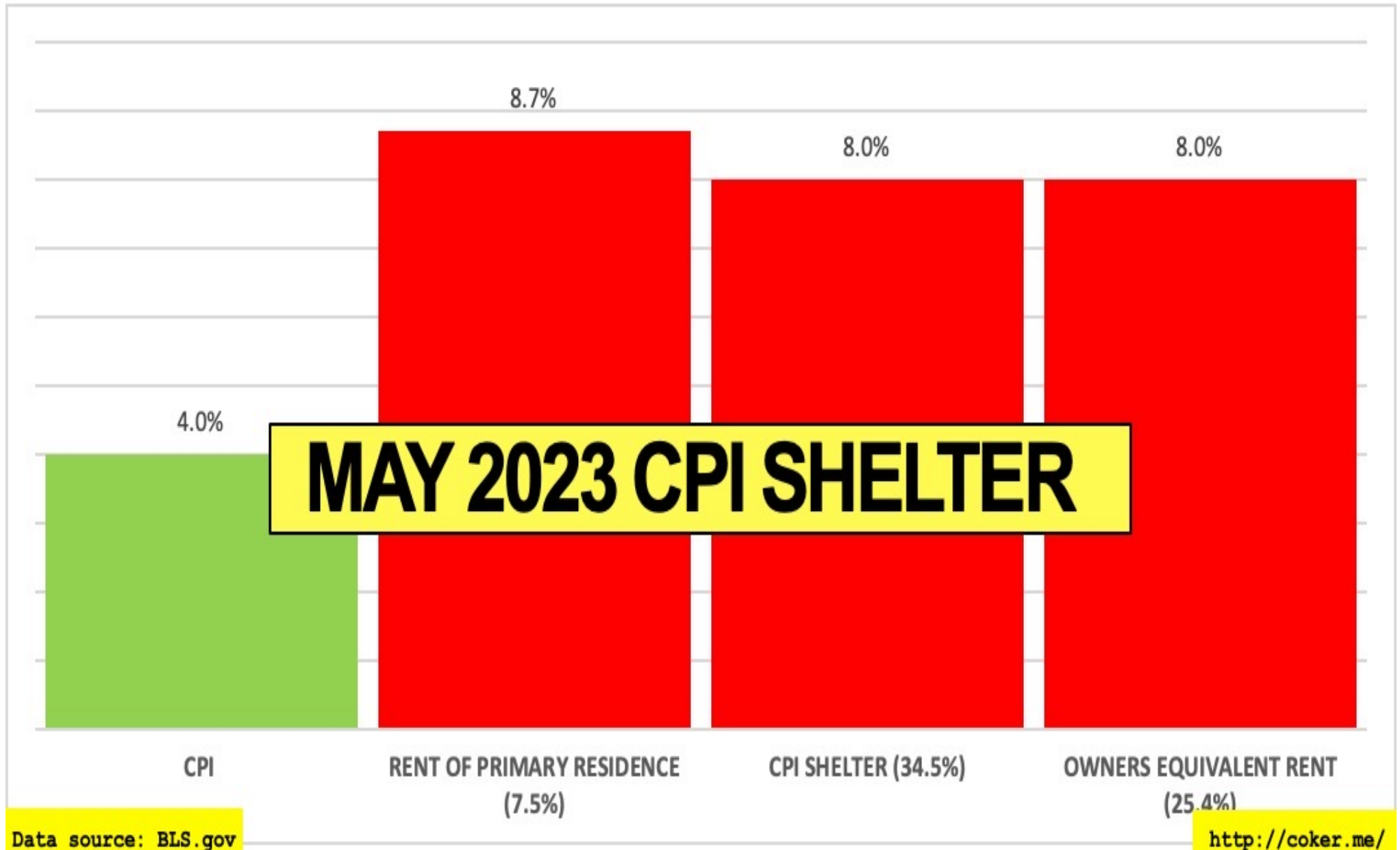
Inflation - Overall



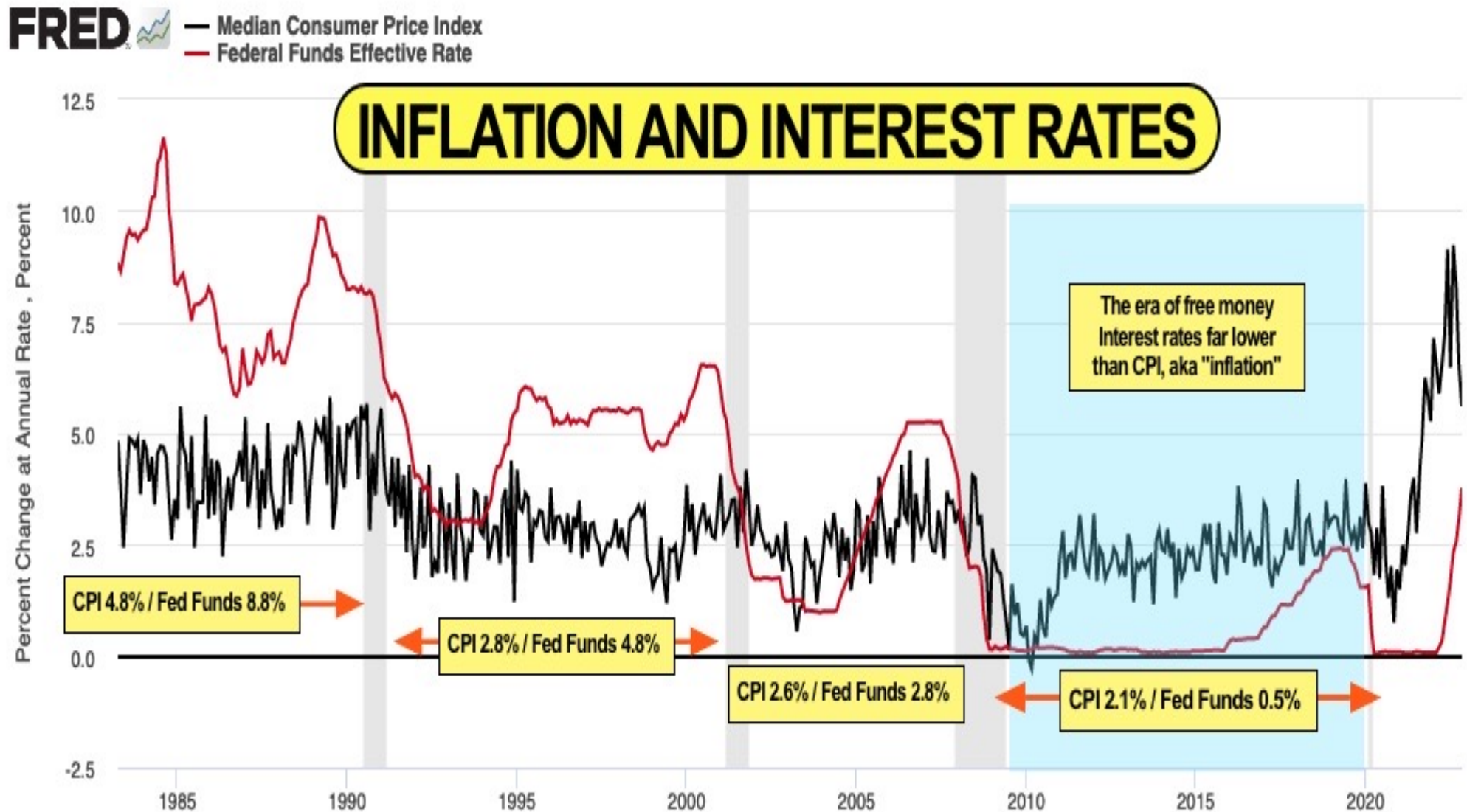
Inflation – Transportation Services



Inflation - Shelter



Money and Interest Rates



Shaded areas indicate U.S. recessions.

Sources: Cleveland Fed; Board of Governors

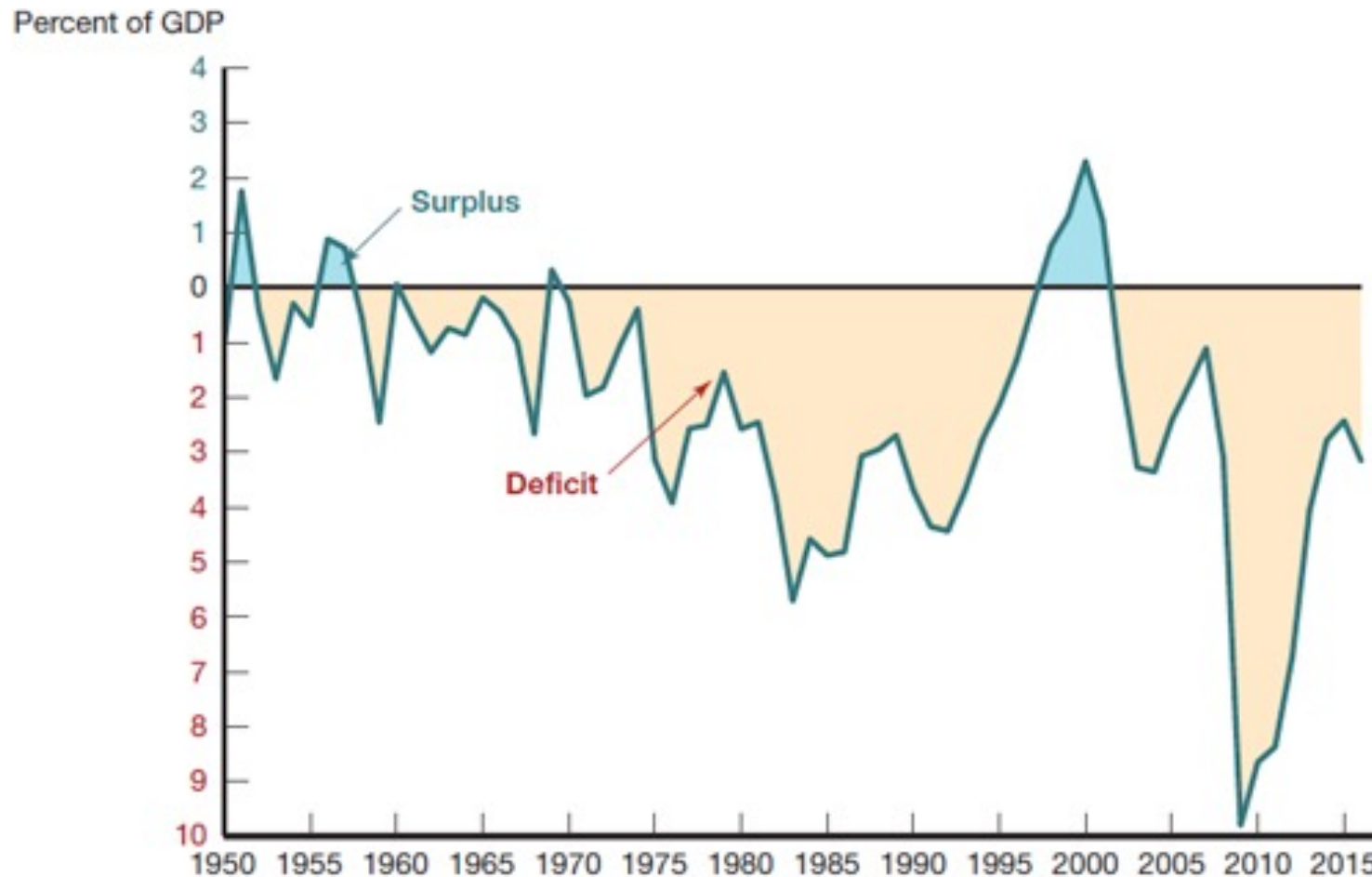
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Fiscal Policy and Monetary Policy

- **Monetary policy** is the management of the money supply and interest rates
 - Conducted in the United States 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
 - Any deficit must be financed by borrowing

Figure 7 Government Budget Surplus or Deficit as a Percentage of Gross Domestic Product, 1950–2016



Source: Federal Reserve Bank of St. Louis, FRED database: <https://fred.stlouisfed.org/series/M2SL>;
<https://fred.stlouisfed.org/series/FYFSGDA188Sl>

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.

Figure 8 Exchange Rate of the U.S. Dollar, 1973–2017



Source: Federal Reserve Bank of St. Louis, FRED database: <https://fred.stlouisfed.org/series/TWEXMMTH>

The International Financial System

- 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?

Money, Banking, and Financial Markets and Your Career

- Understanding monetary policy may help you predict when interest rates will rise or fall, help you make decisions about whether it is better to borrow now or to wait until later, know how banks and other financial institutions are managed which may help you get a better deal when you need to borrow from them and may enable you to make better investment decisions, whether for yourself or for the company you work for

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.

Real Versus Nominal Magnitudes (1 of 2)

- 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.

Real Versus Nominal Magnitudes (2 of 2)

- A more reliable measure of economic production expresses values in terms of prices for an arbitrary base year, currently 2005. GDP measured with constant prices is referred to as real GDP, the word real indicating that values are measured in terms of fixed prices.

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 personal consumption expenditure (PCE) deflator
 - The Consumer Price Index (CPI)

International Financial System