Econ 2
Principles of Macroeconomics

Lecture 16:
Aggregate Demand/Aggregate Supply

Money Market Equilibrium

Changing the Interest Rate

- Federal Reserve buys/sells bonds
  - Changes the interest rate

- 1-Year Bond with a value of $100
  - Buyer purchases bond today, gets $100 in 1 year
  - Price of bond today is less than $100

- Interest Rate = (Return on the bond/Price of bond) x 100
- Bond Price Change→ Return on bond Change→ r* Change

Carrying out Monetary Policy

- How does the Fed enact monetary policy?
- Example: r_1 = 5%, Fed wants to decrease r_2 = 4%

Carrying out Monetary Policy

- How does the Fed enact monetary policy?
- Example: r_1 = 5%, Fed wants to increase r_3 = 6%

Why is the interest rate so important?

- What changes when r decreases?
- 1.

- 2.
- 3.

Monetary Policy in Action

- Example 1: $Y_1 = 8{,}000$, $r_1 = 6\%$ and $M_1 = 1$ trillion
- $\overline{Y} = 10{,}000$ (full employment GDP)

Monetary Policy in Action

- Example 1: Y_3 = 12,000, r_3 = 2% and M_3 = 4 trillion
- $\overline{Y}$ = 10,000 (full employment GDP)

Effects of Inflation

- Example: $\overline{Y}$ = 10,000 (full employment GDP), r_1 = 5%, M_1 = 1 trillion, CPI_1 = 100

Aggregate Demand Curve

- How are prices and levels of Y=AE related?

- Aggregate Demand Curve: “Equilibrium Level of Spending at Every Price Level” Curve
  As general level of prices rise, equilibrium level of spending (Y*=AE*) decreases
- Moving along the aggregate demand curve?

Aggregate Demand Curve

- Shifts in the AD Curve

Aggregate Supply Curve

- Aggregate Supply: The amount that firms are willing and able to produce at various price levels
- In the short-run:
  - -firms respond to the costs of production
  - -production costs are determined by level of Y in short-run
  - -as Y increases, new (less productive) workers are hired
  - -additional Y costs more than previous Y

Aggregate Supply Curve

- Movement Along vs. Shifts in Supply
- What shifts AS?
- Anything that changes the amount firms are willing to produce that is not the price
- Examples:

Complete Macroeconomic Equilibrium

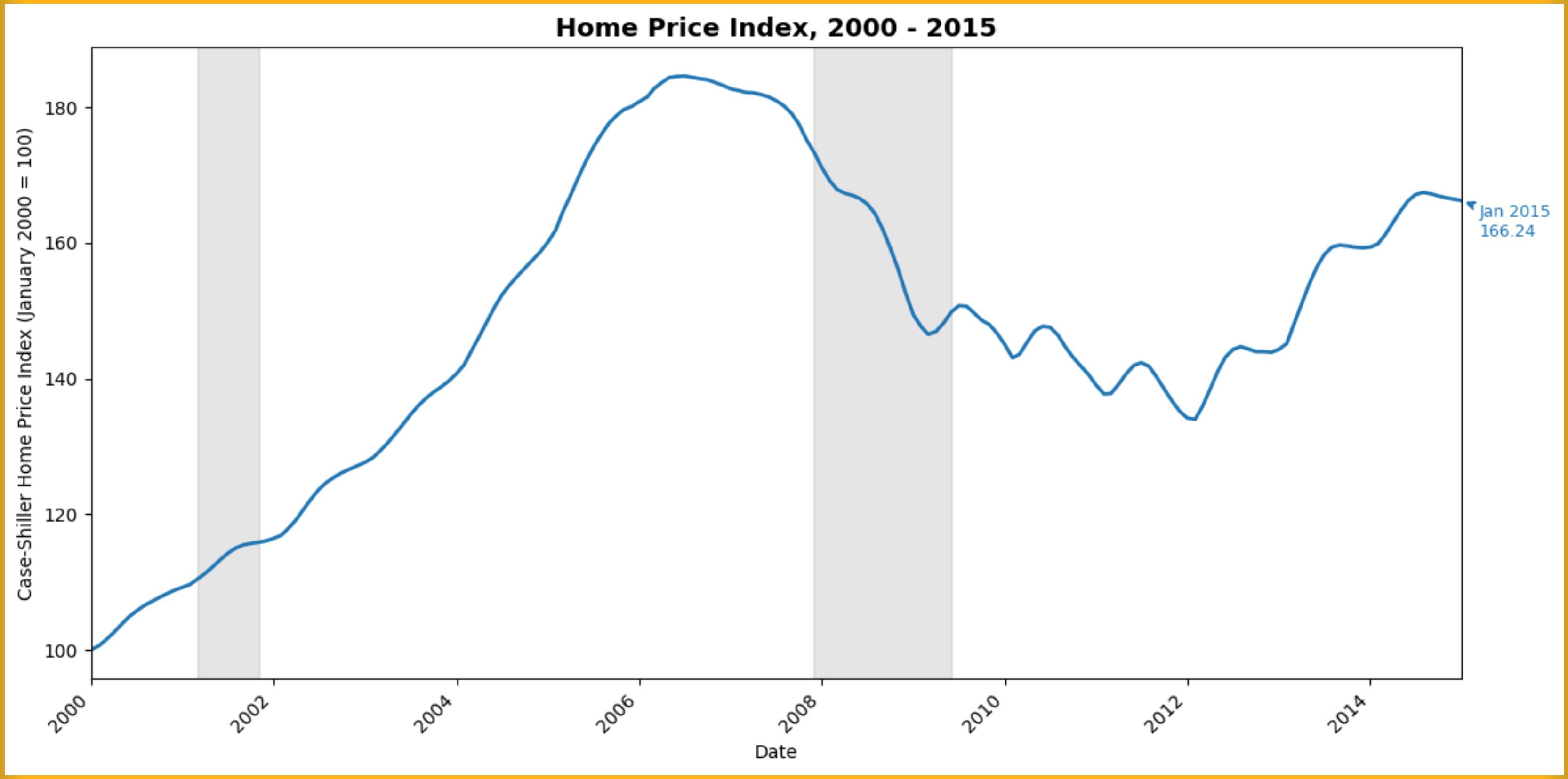
Entire Macroeconomy

- Money Supply = 1 trillion
  Interest Rate = 5%
  Price Level = 100
  Y=Y-bar = 10,000

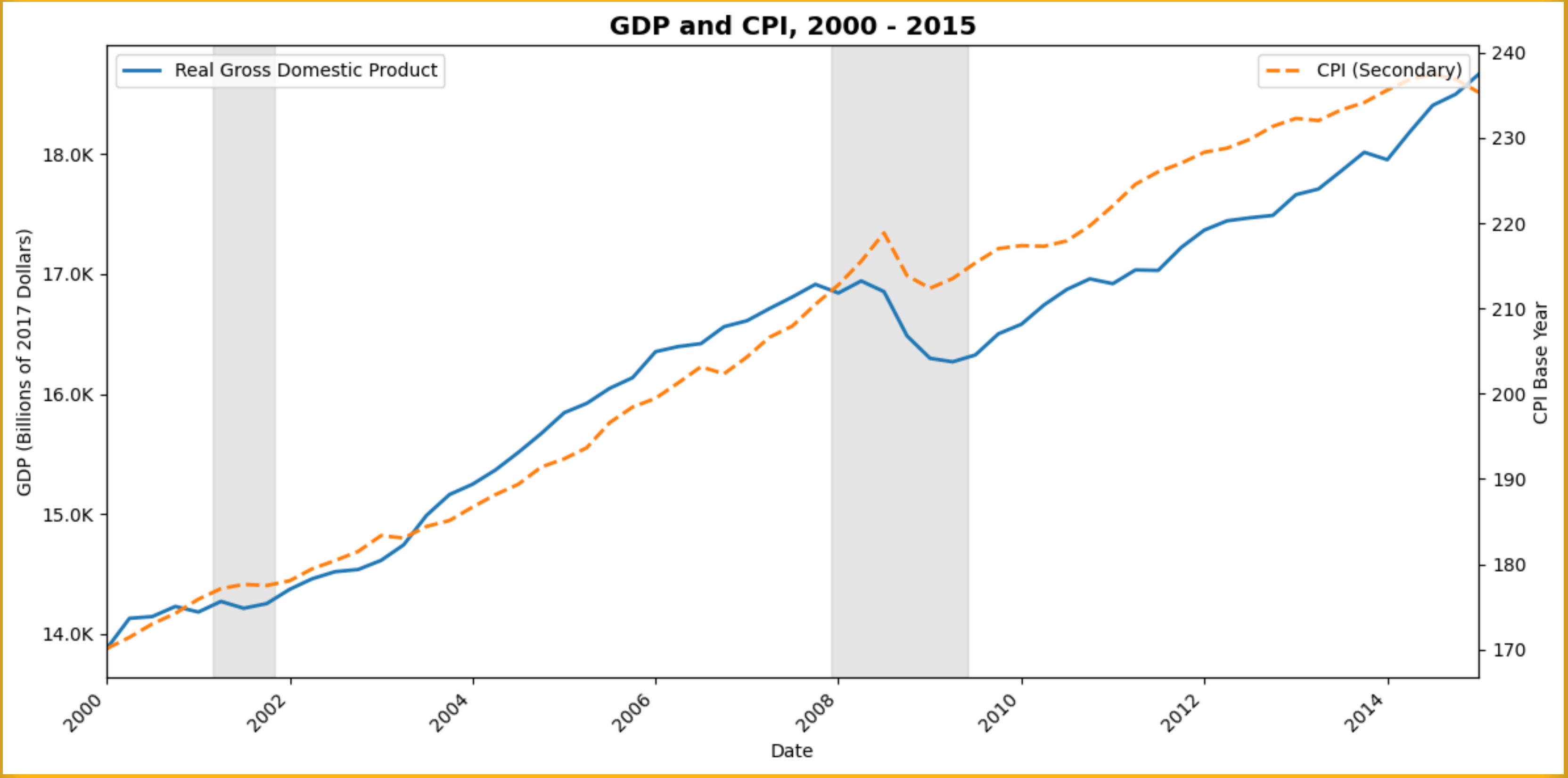
Shocks to the Macroeconomy

- Connect model to real-world data
- During the Great Recession, is there evidence that:
  - housing prices fell
  - output and CPI decreased
  - government spending increased
  - tax revenue decreased
  - interest rates decreased (money supply increased)

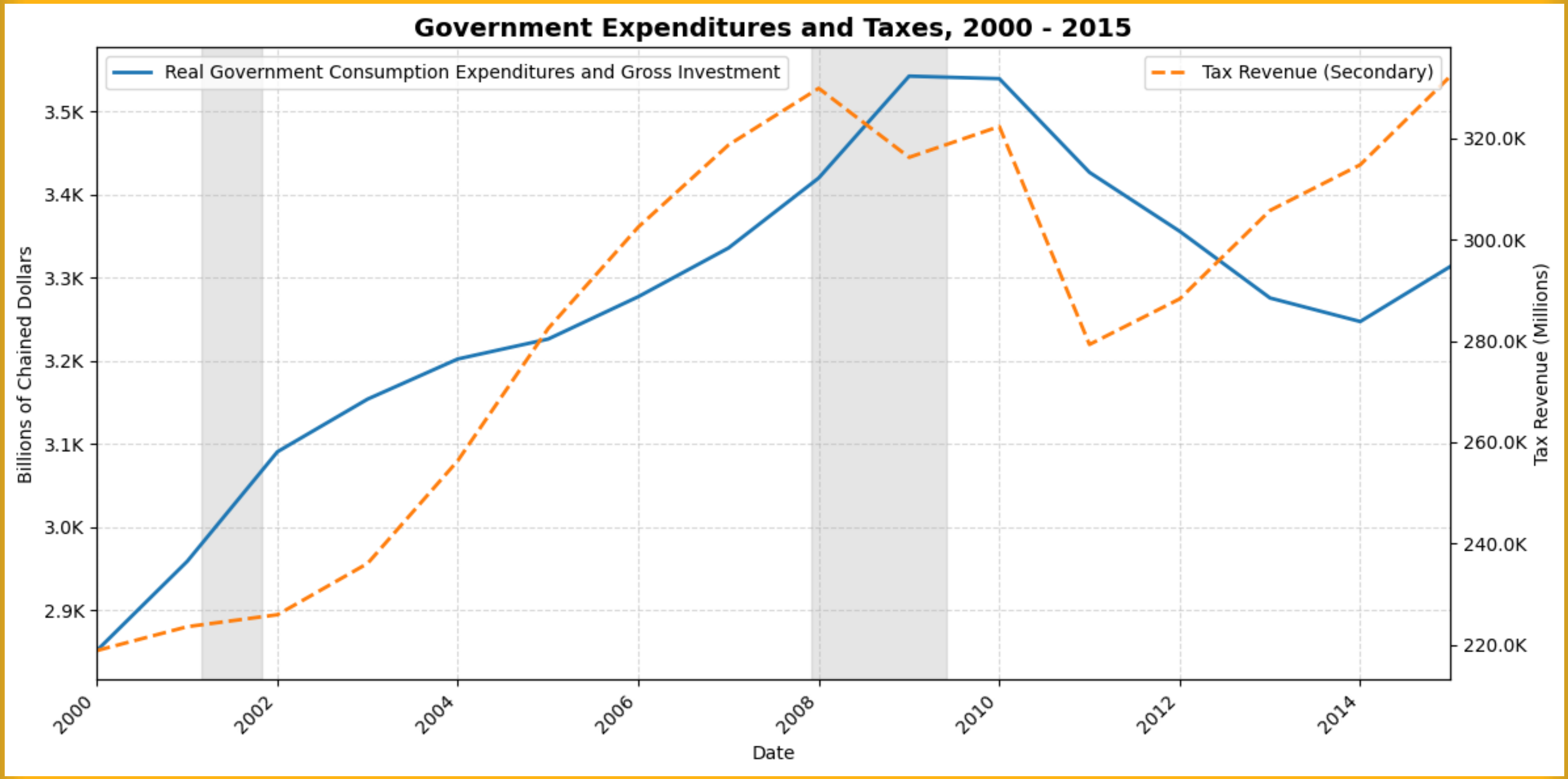
Housing Prices



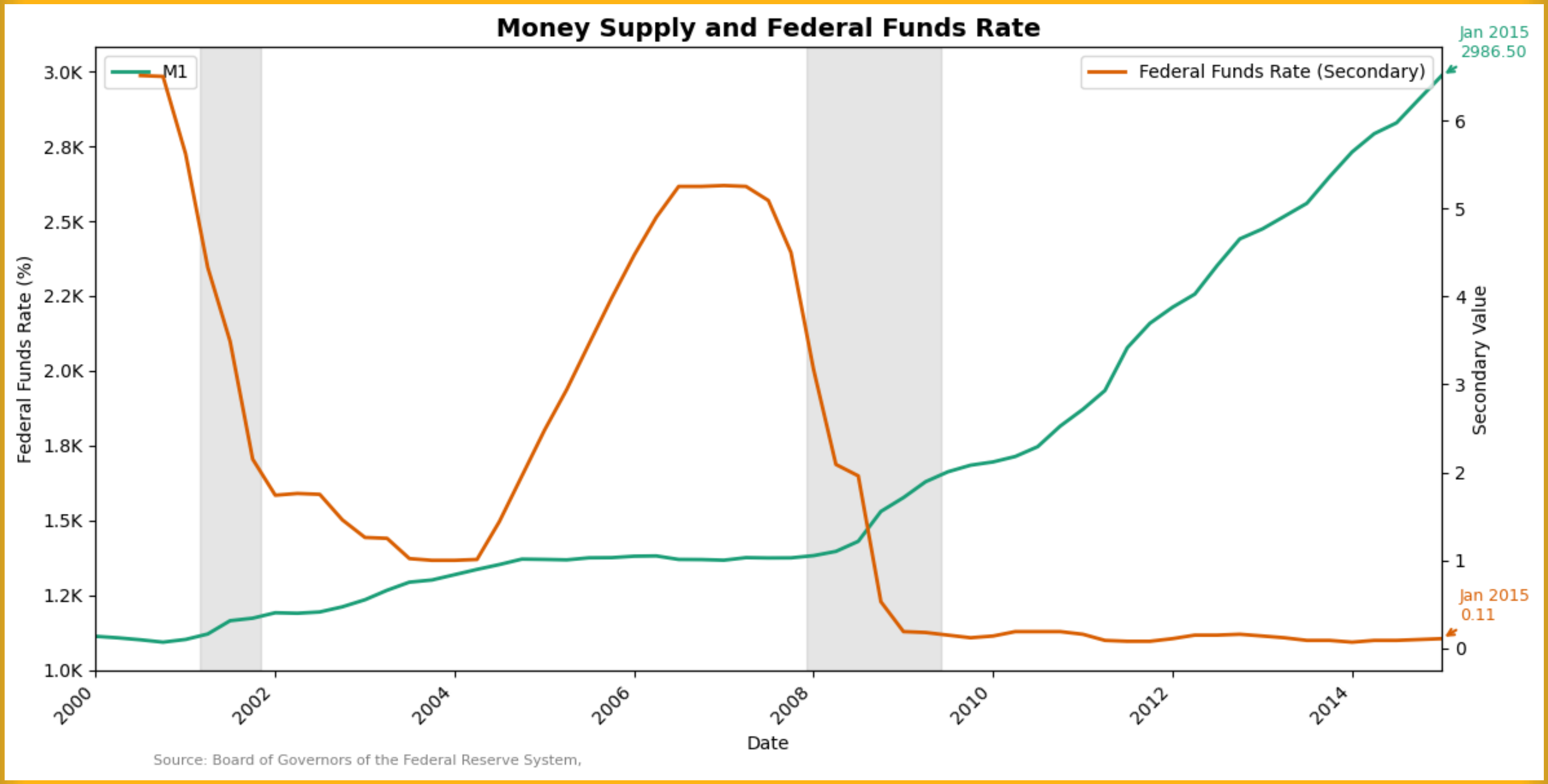
GDP/CPI


GDP and CPI, 2000 - 2015
Real Gross Domestic Product
CPI (Secondary)
GDP (Billions of 2017 Dollars)
CPI Base Year
Date
14.0K
15.0K
16.0K
17.0K
18.0K
170
180
190
200
210
220
230
240
2000
2002
2004
2006
2008
2010
2012
2014

Taxes and Government Expenditures



Interest Rate and Money Supply



Shocks to the Macroeconomy

- Start at Full-Employment output
- Housing Market Crash-how does P* and Y* change?

Shocks to the Macroeconomy

- Start at Full-Employment output
- Housing Market Crash-how does P* and Y* change?
- How should the government or Fed respond?

Demand Shocks to the Macroeconomy

- Demand Shock:
- Counter-Cyclical Policy:

The Federal Reserve During COVID

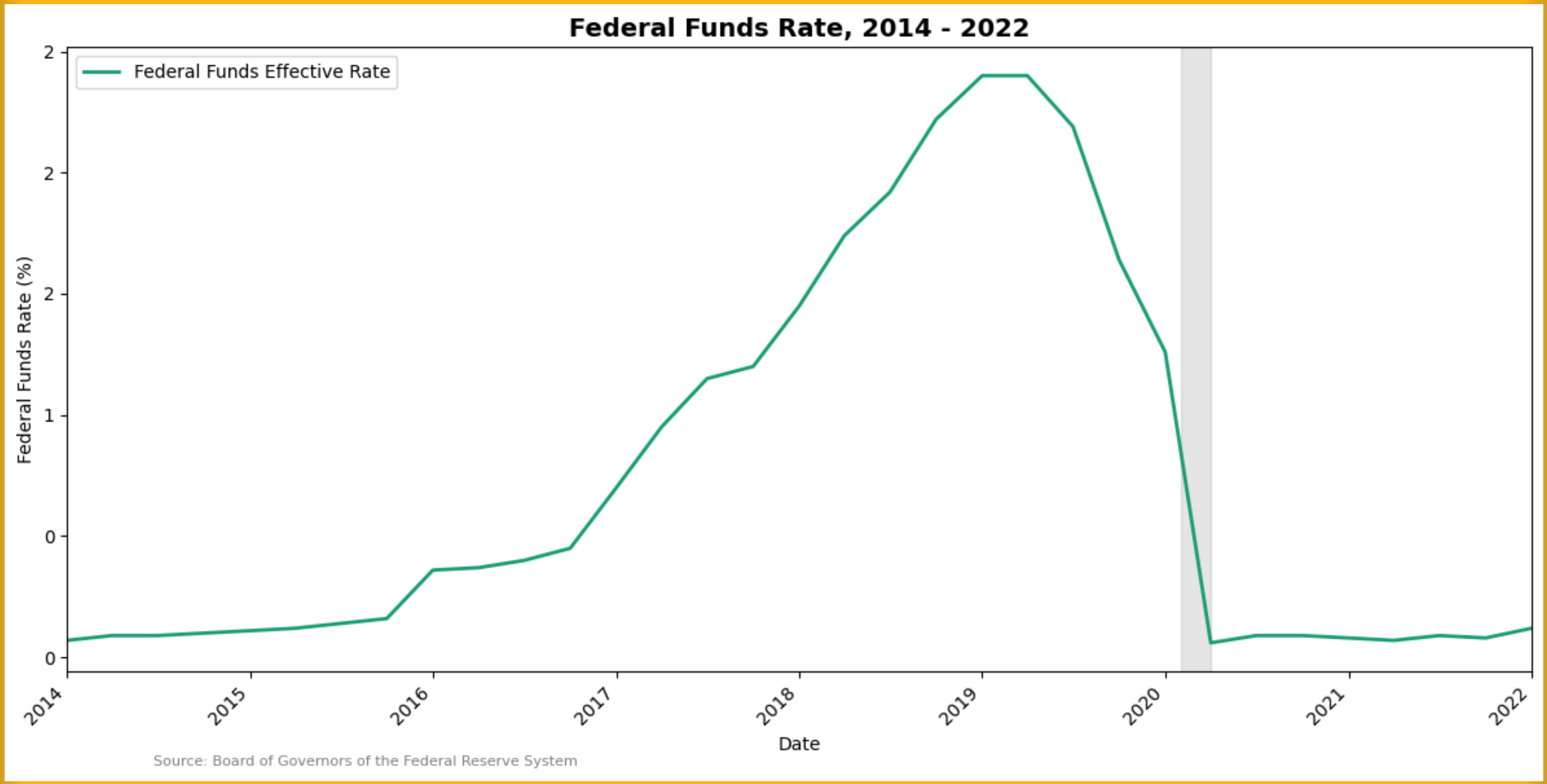
- Emergency Rate Cut I on March 3rd, 2020
  - Fed Funds Rate: 1.0 to 1.25%

- Emergency Rate Cut II on March 15th, 2020
  - Fed Funds Rate: 0 to 0.25%

- Only unconventional tools remain
  - Buying mortgage-backed securities
  - Lower reserve requirements for banks

- All meant to increase AC, I^P

Federal Funds Rate, 2014-2022



Supply Shocks

- Supply Shock: Change in AS that moves economy away from full-employment equilibrium
- How do we know if a recession is caused by a supply shock instead of demand shock?

Supply Shock

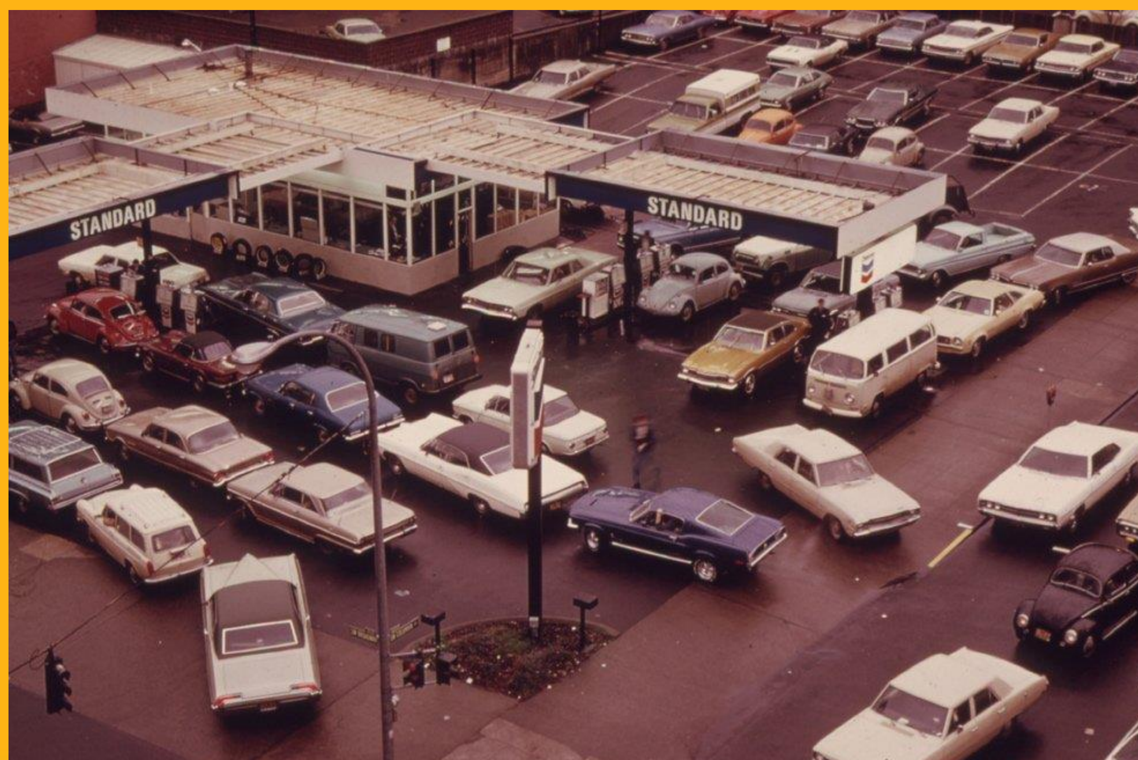
- How should the government respond to a recession driven by a decrease in AS?
- Option 1: Fight unemployment, bring economy back to Y-bar

Supply Shock

- How should the government respond to a recession driven by a decrease in AS?
- Option 2: Fight rising prices, bring prices back to P*

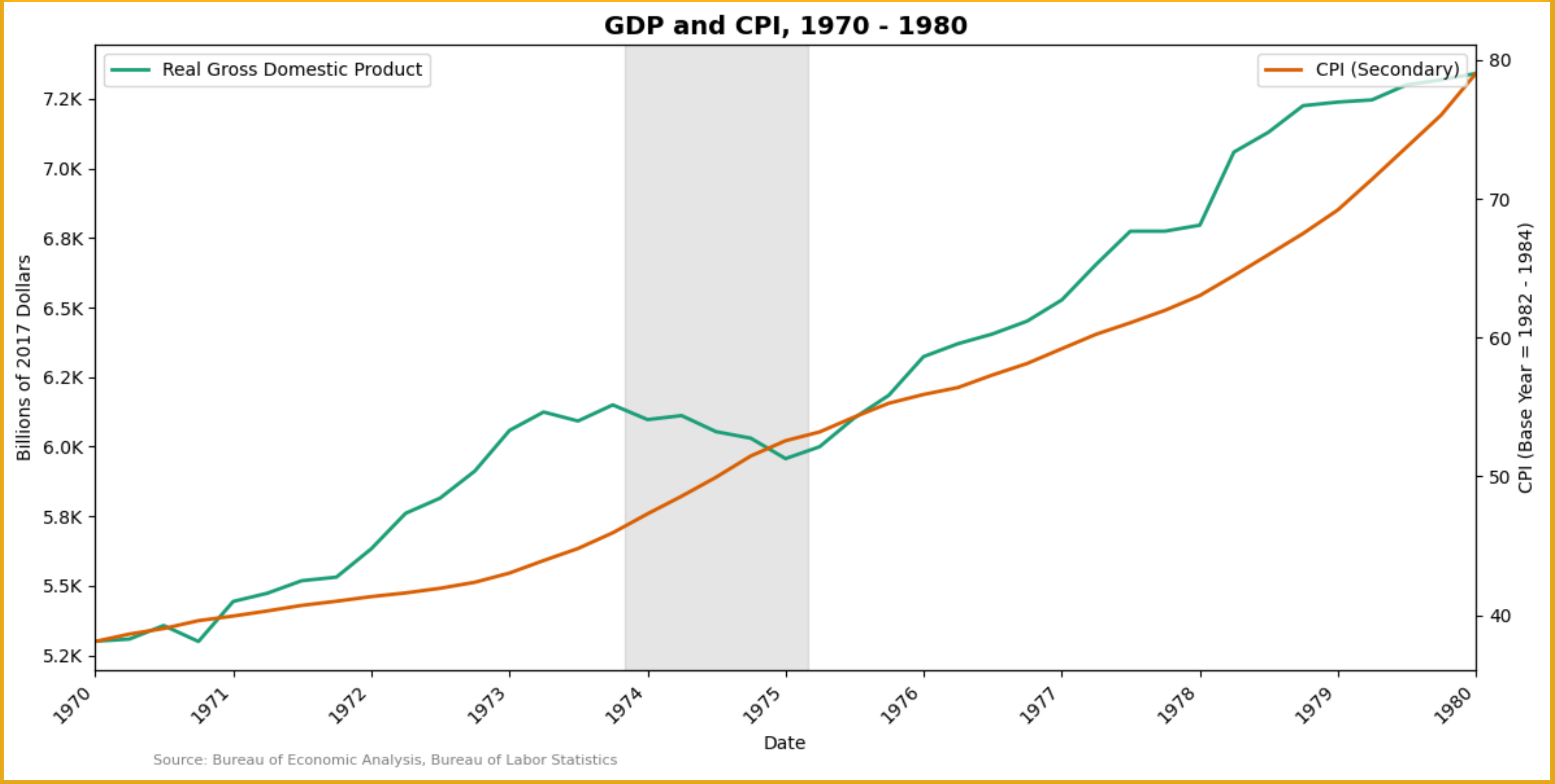
Historical Supply Shocks

- OPEC Oil Embargo in the early 1970s
- Microeconomic Consequences: Gasoline shortage



Historical Supply Shocks

- Did prices rise as output fell?



Historical Supply Shocks

- How did the Federal Reserve respond?