

LECTURE 9

THE CONDUCT OF POSTWAR MONETARY POLICY FEBRUARY 14, 2018

I. OVERVIEW

- A. Where we have been
- B. Where we are headed

II. DESCRIBING POLICY CHOICES USING A MONETARY POLICY RULE

- A. Overview
- B. Taylor's specification of a monetary policy rule
- C. Monetary policy rules in a variety of regimes
- D. Parameter estimates
 - 1. Taylor's preferred coefficients
 - 2. Importance of real rates rising in response to inflation
- E. Parameter estimates from different sample periods
- F. Deducing policy mistakes using deviations from a Taylor Rule
- G. Are Taylor's estimates likely to suffer from omitted variable bias?

III. ROLE OF IDEAS IN DETERMINING MONETARY POLICY ACTIONS AND OUTCOMES

- A. Overview
 - 1. Romer and Romer's thesis
 - 2. Romer and Romer's approach
- B. Examples of policymakers' ideas
- C. Examples of effects of policymakers' ideas
- D. Ideas and recent monetary policy

Economics 134
Spring 2018

David Romer

LECTURE 9

The Conduct of Postwar Monetary Policy



February 14, 2018

Announcements

- Please fill out the “Early Feedback Form” that is being distributed.
- Monday is Presidents Day – no class.

LECTURE 8

Review of Open Economy IS-MP and the AD-IA Framework (concluded)



IV. INFLATION ADJUSTMENT

Key Assumptions about Inflation Behavior

- At a point in time, inflation is given.
- When $Y > \bar{Y}$, inflation gradually rises.
- When $Y < \bar{Y}$, inflation gradually falls.
- When $Y = \bar{Y}$, inflation is constant.

- Note: \bar{Y} is normal or potential output – the level of output that prevails when prices are fully flexible.

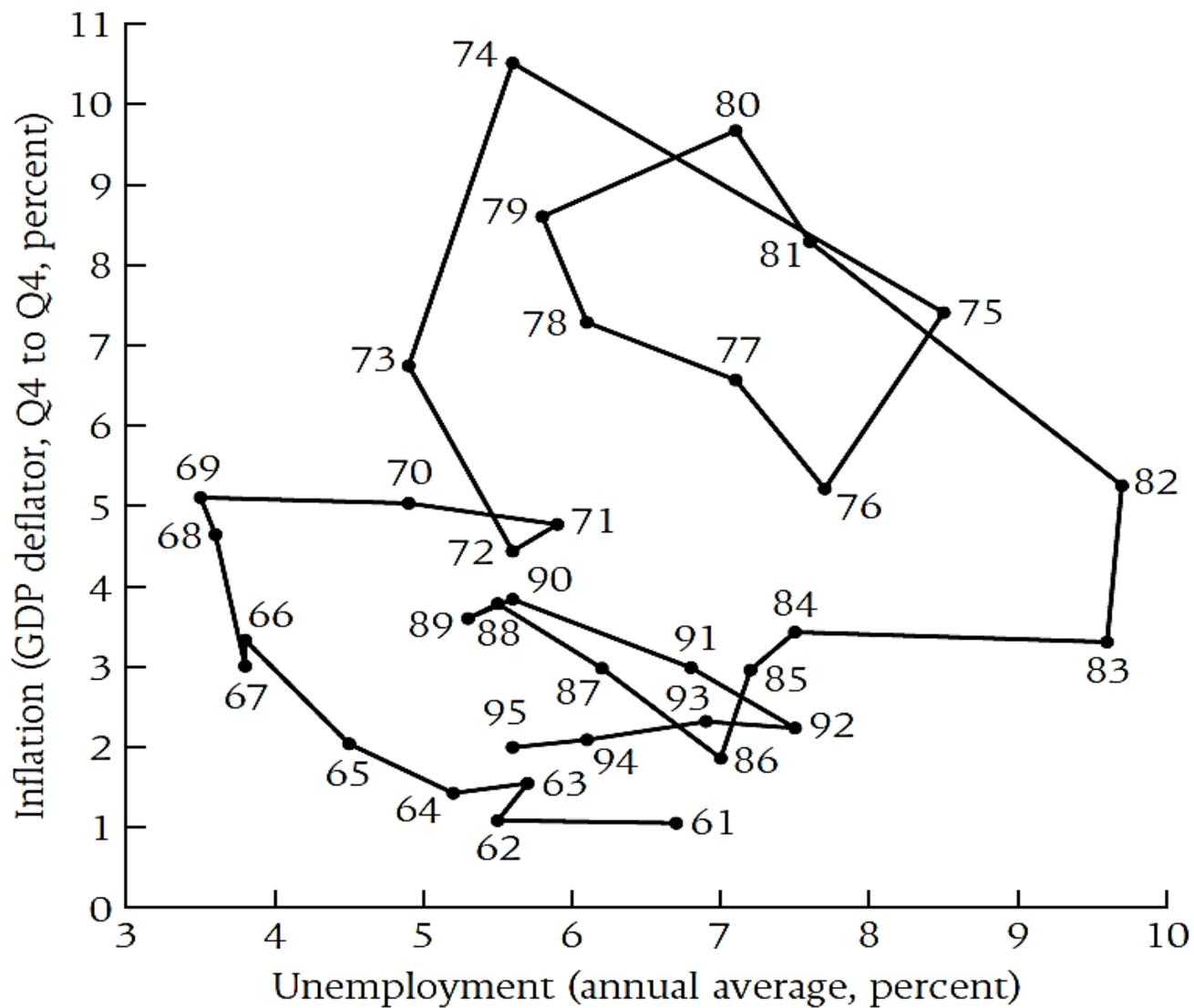
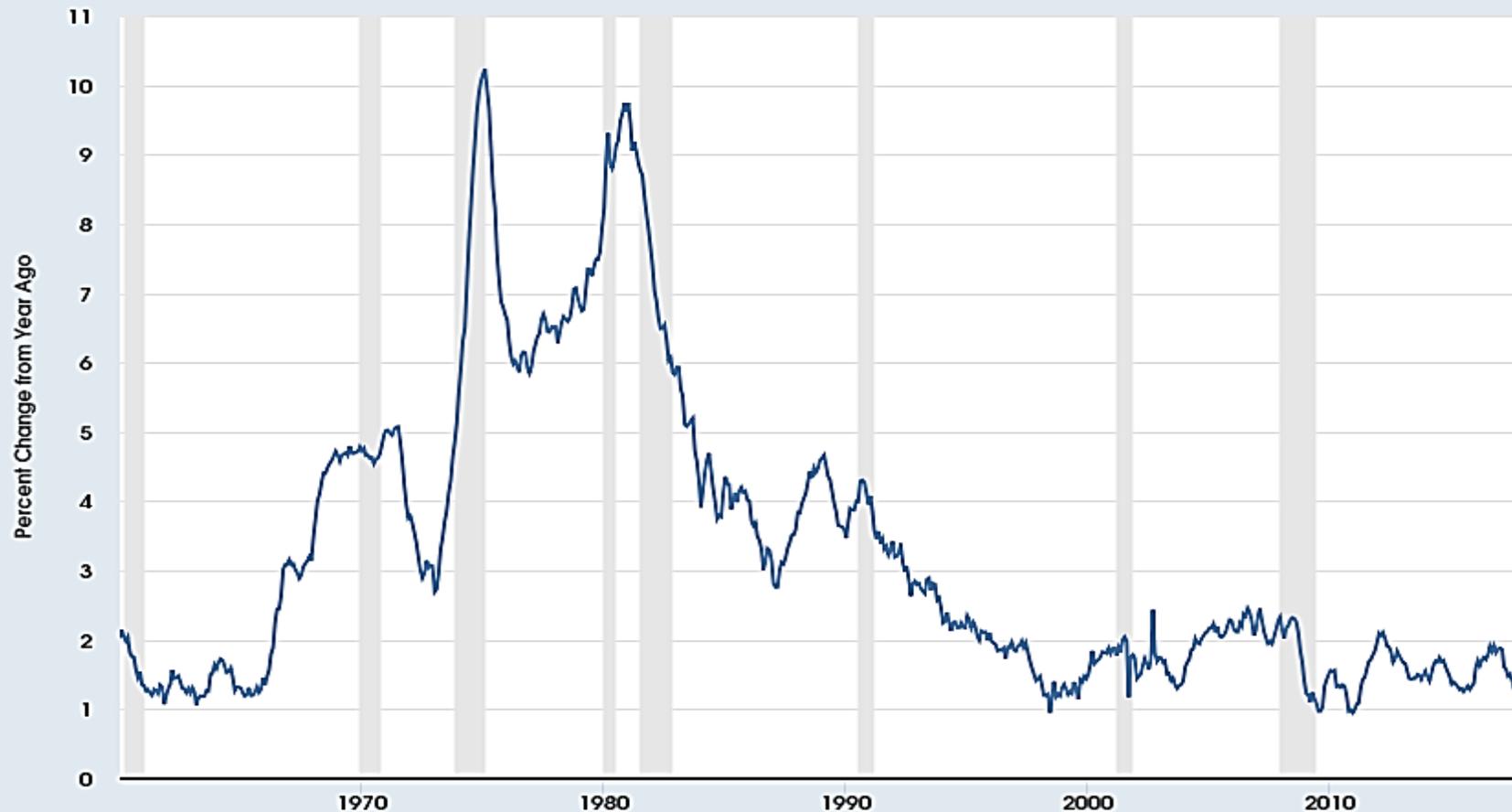


FIGURE 6.7 Unemployment and inflation in the United States, 1961–1995



Shaded areas indicate U.S. recessions

Source: U.S. Bureau of Economic Analysis

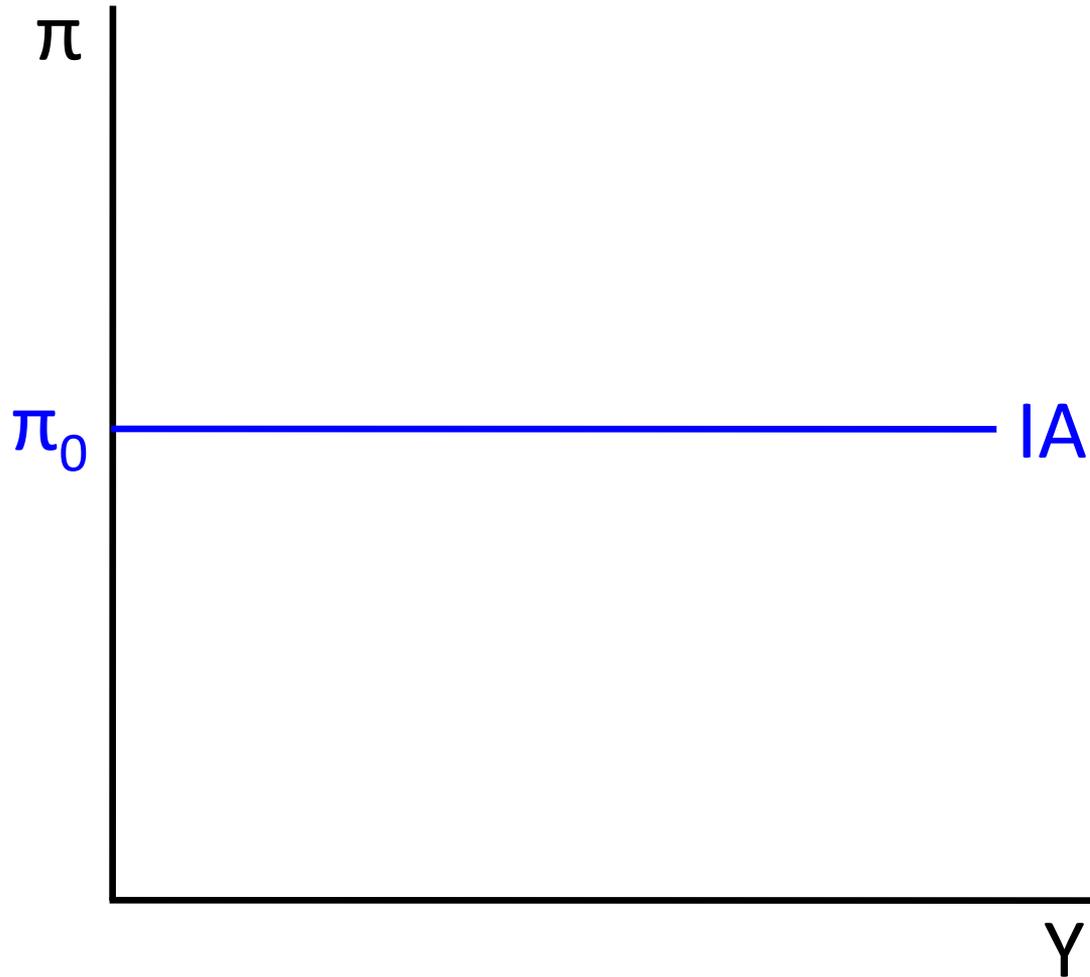
myf.red/g/ikJh

Inflation fell less in the Great Recession and the (subsequent period of continued high unemployment) than in previous recessions.

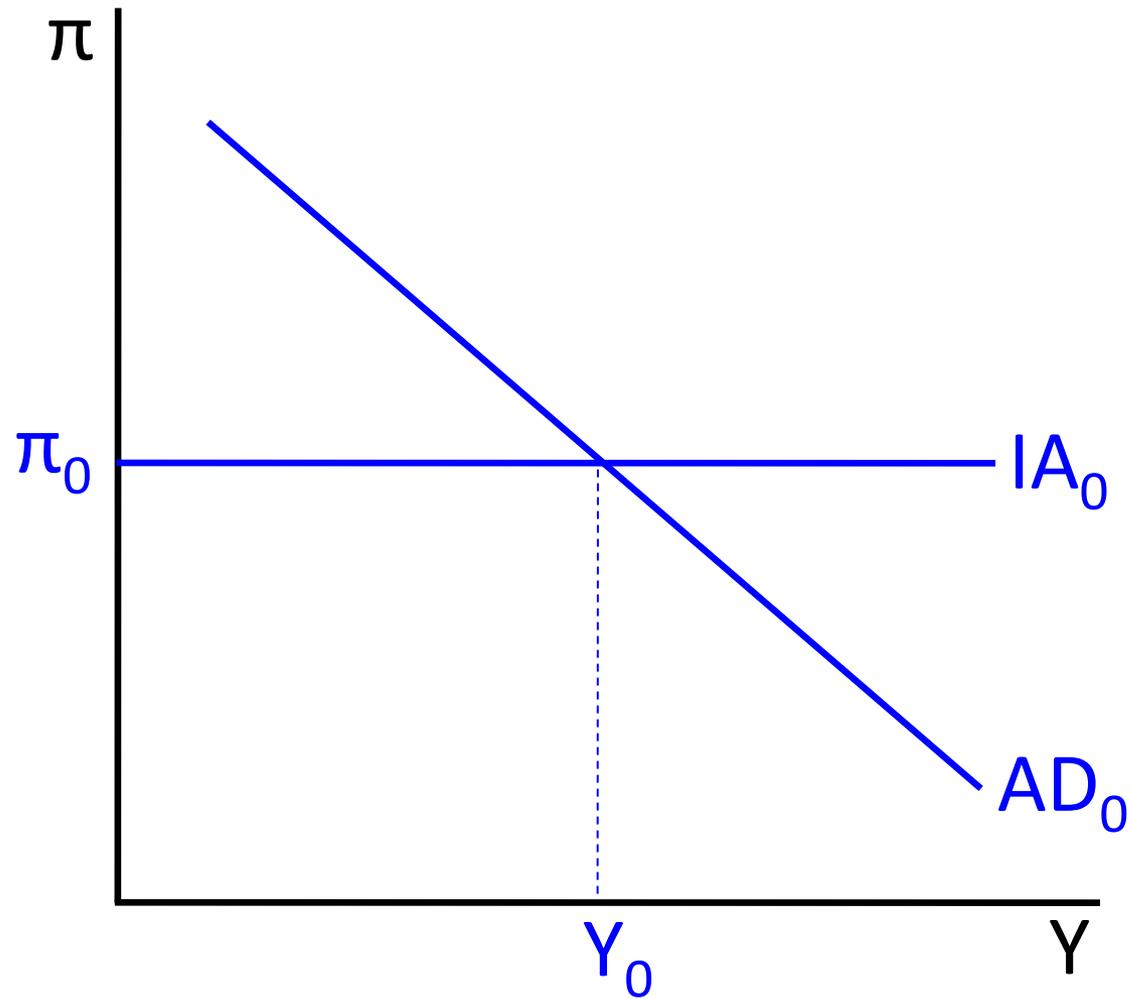
Two Important Points

- Inflation does not respond immediately to deviations of output from potential.
- We are talking about inflation, not prices. Output below potential causes the rate of inflation to fall from one positive number to a smaller positive number.

Inflation Adjustment Curve (IA)

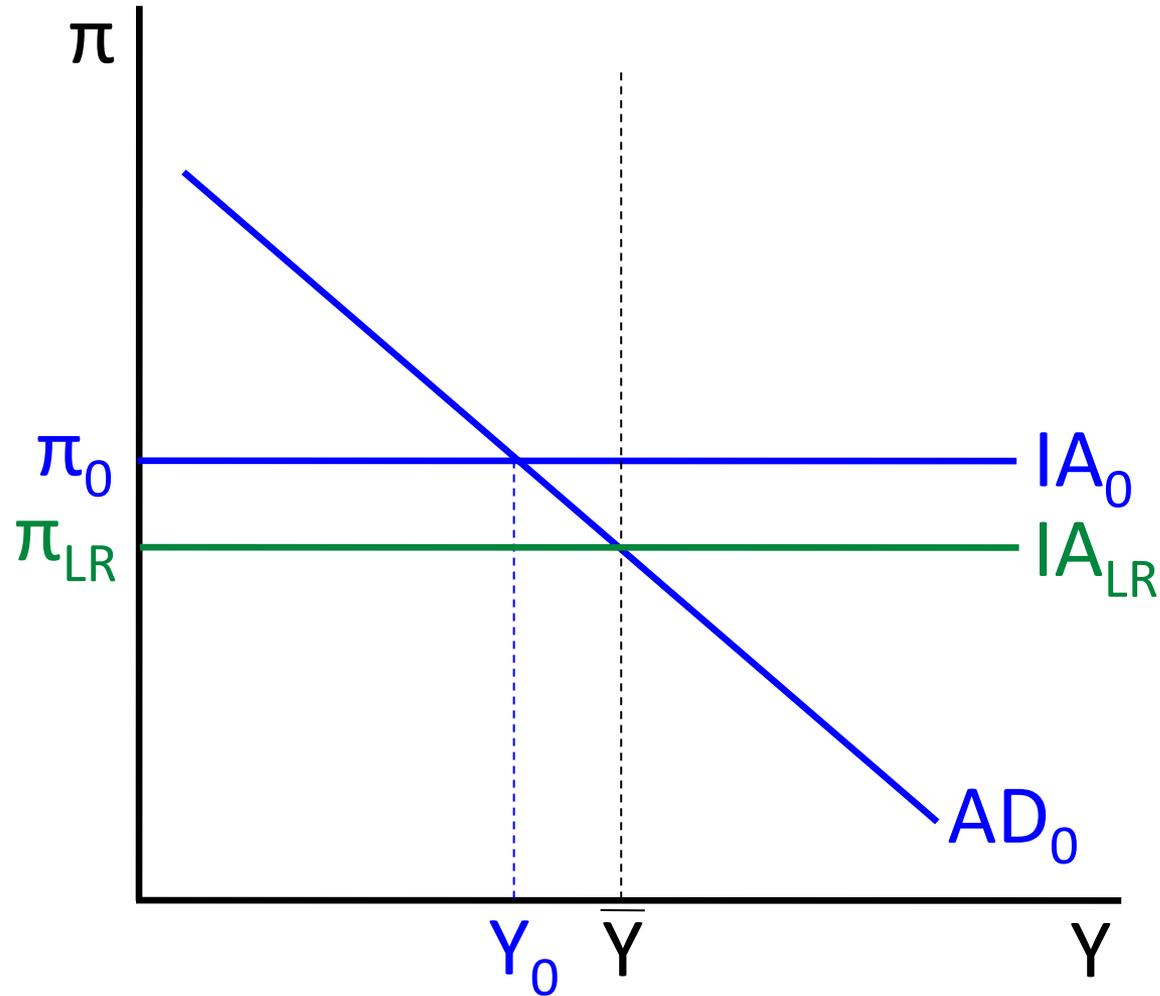


Short-Run Equilibrium

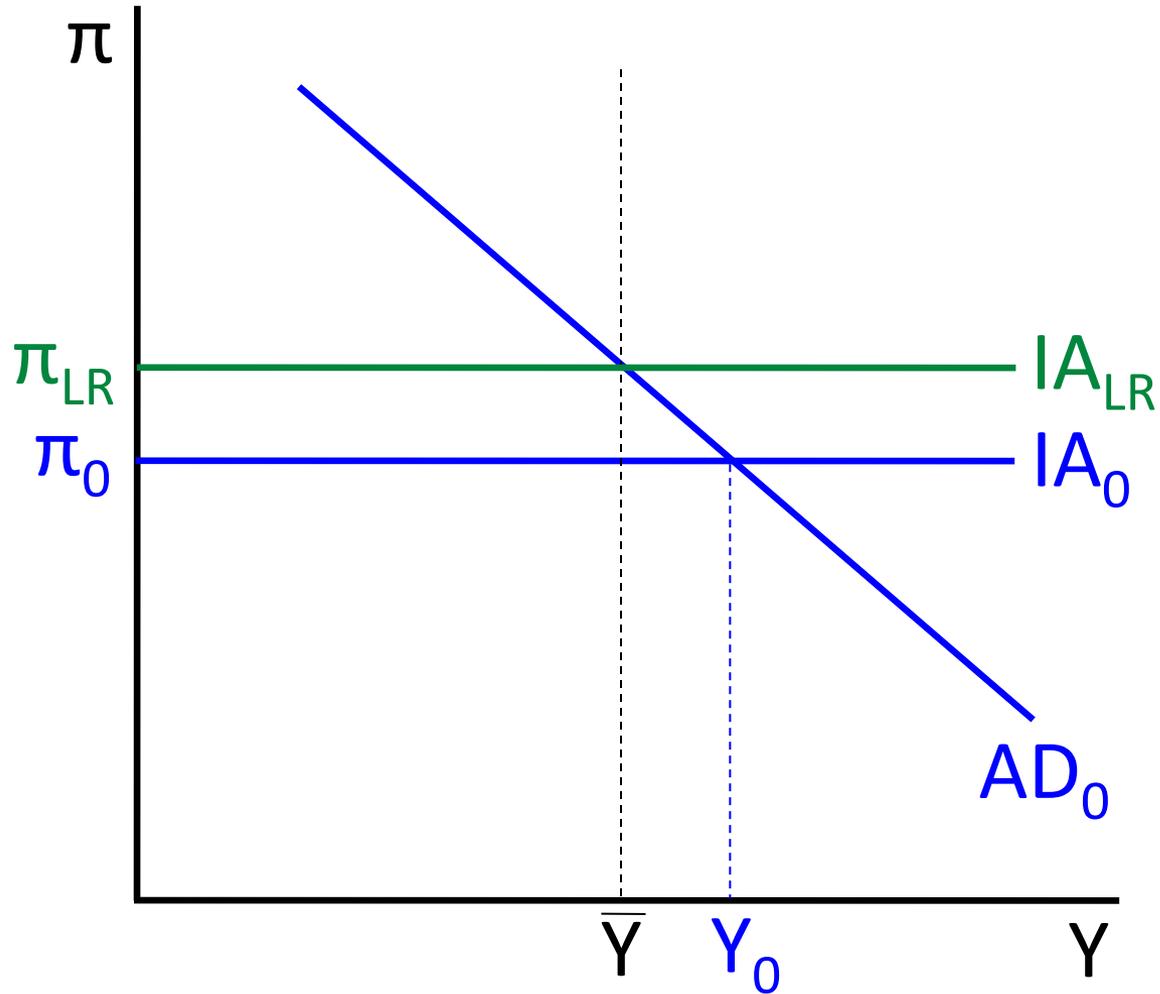


AD/IA Intersect below \bar{Y}

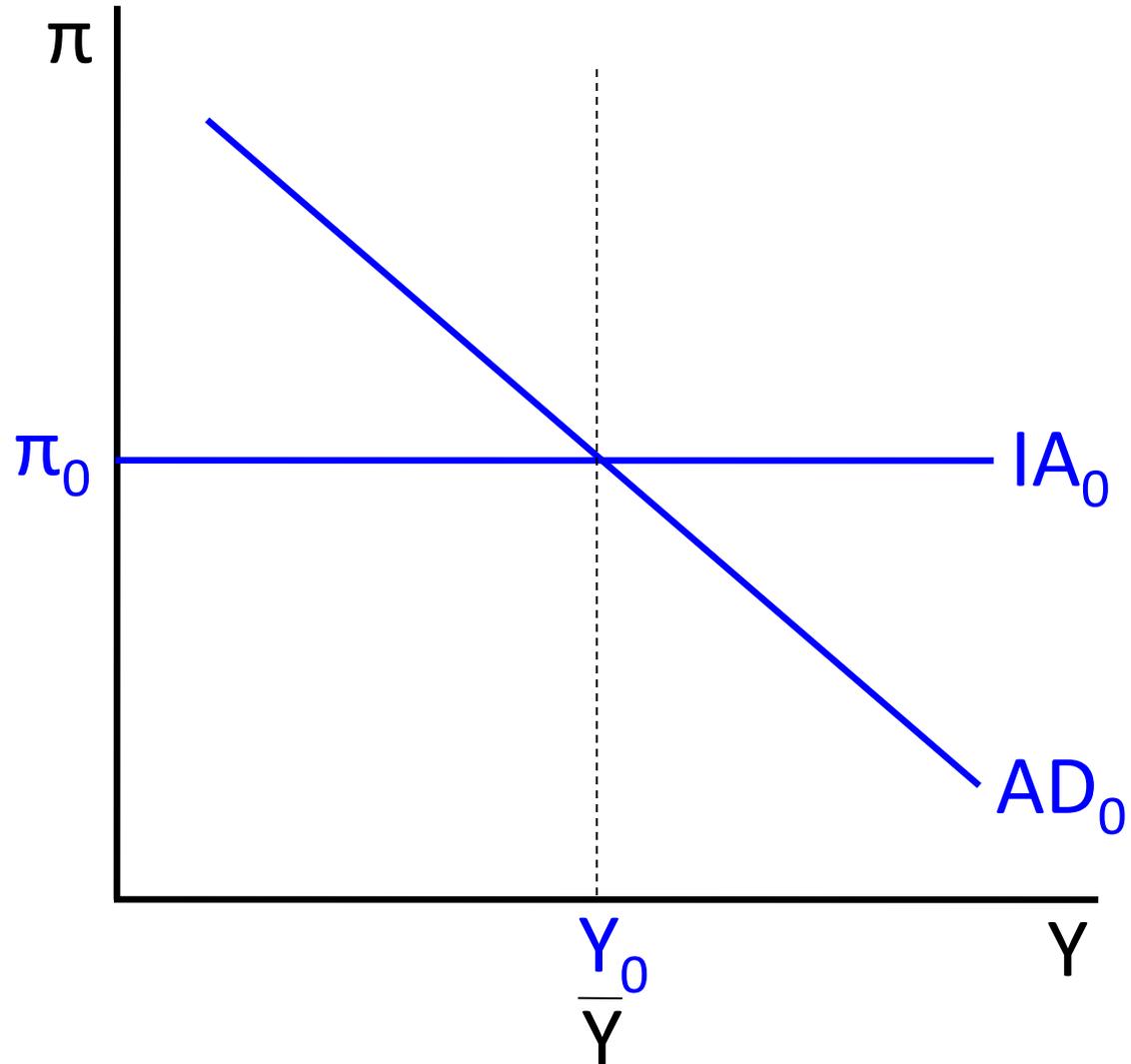
IA will shift down.



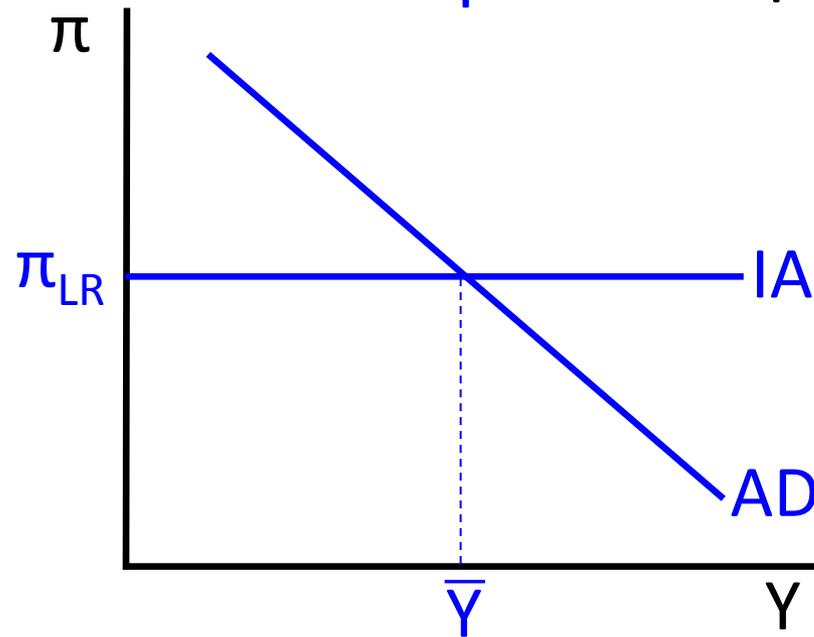
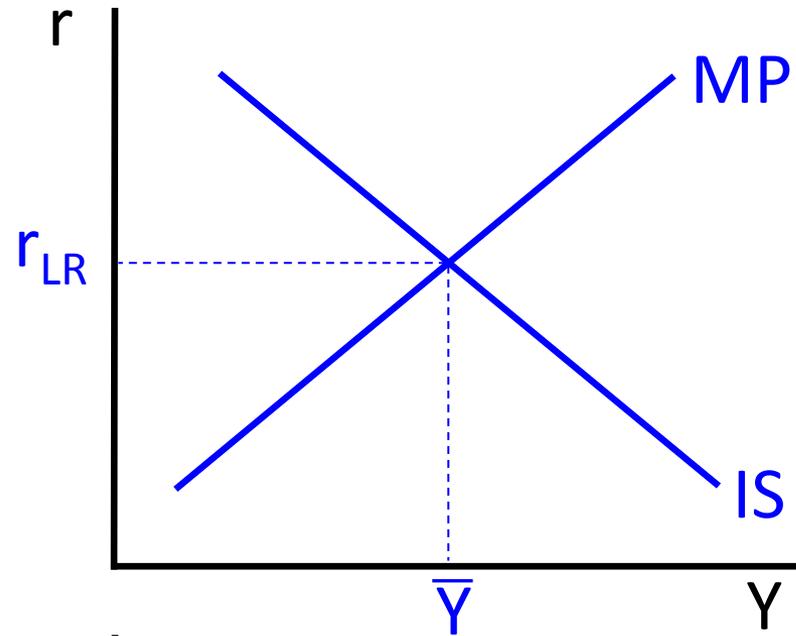
AD/IA Intersect above \bar{Y}
IA will shift up.



AD/IA Intersect at \bar{Y}
Long-Run Equilibrium



Long-Run Equilibrium r

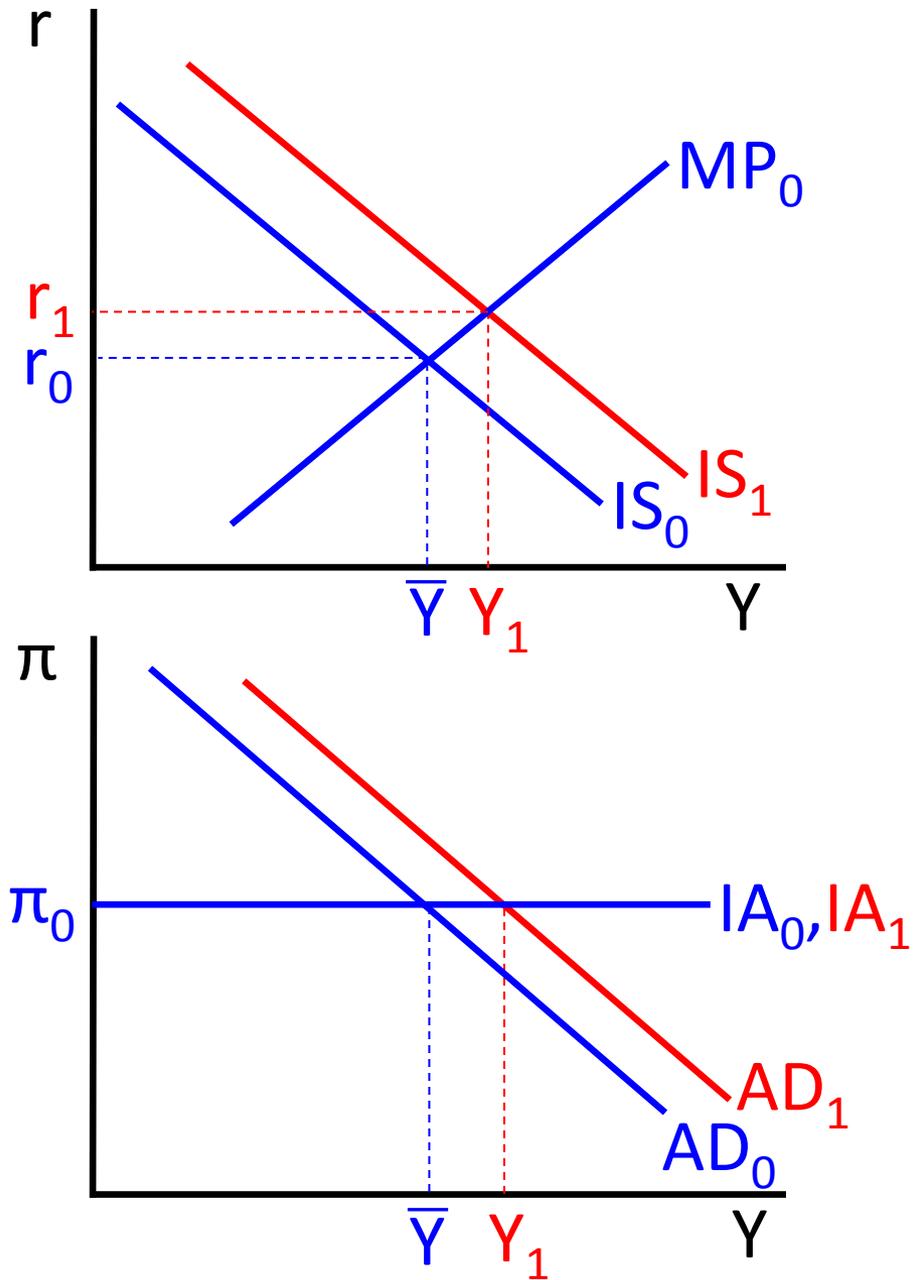


V. APPLICATION: RECENT CHANGES IN U.S. FISCAL POLICY

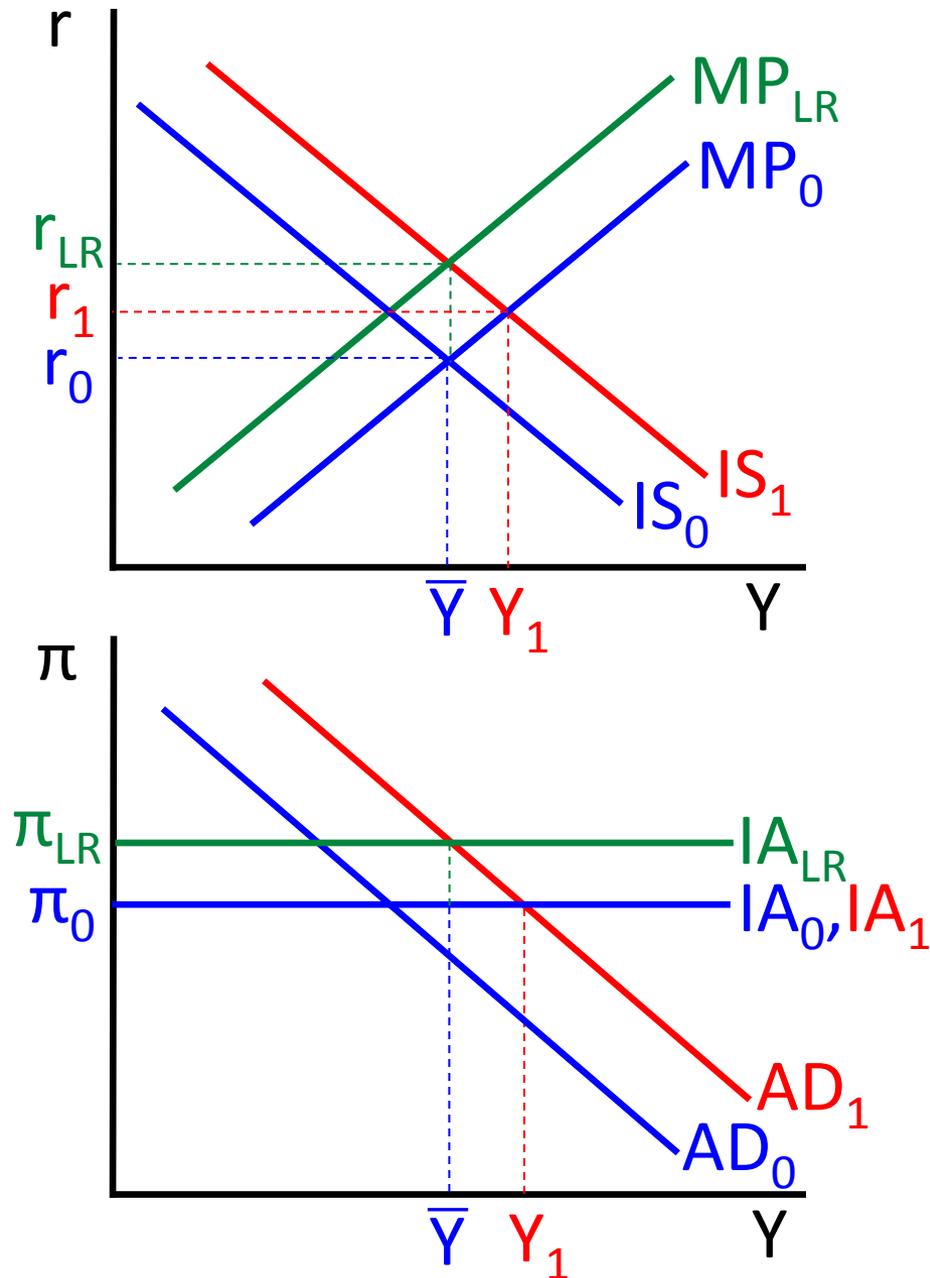
Recent U.S. Fiscal Developments

- Since last June, the projected deficit for fiscal year 2019 has risen from \$700 billion (3% of GDP) to \$1.2 trillion (6% of GDP).
- The change is entirely the result of changes in policy, not in the health of the economy: roughly \$300 billion from the tax bill, and roughly \$200 billion from the budget agreement.
- Most observers think that output is currently very close to potential ($Y \approx \bar{Y}$).

A Decrease in T and an Increase in G



A Decrease in T and an Increase in G



Impact of a Decrease in T and an Increase in G

- Increases output in the short run.
- Causes inflation to gradually rise because output is above potential.
- Leads Fed to shift the MP curve.
- Output returns to \bar{Y} .
- r is higher in the long run.

What Happens to the Real Exchange Rate (ϵ)?

- r is higher in the long run.
- Higher r means that net capital outflow (CF) will decrease.
- $CF = NX$, so NX must fall as well.
- What causes NX to fall? ϵ must rise.
- Thus: A cut in T and a rise in G leads the dollar to appreciate.

What Other Disadvantages Might There Be to the Fiscal Developments?

- We might be concerned about the distributional consequences.
- The resulting higher level of debt might cause the fiscal policy response to a future recession or financial crisis to be weaker.
- The resulting higher level of debt could make a debt crisis at some point in the future more likely.

What Advantages Might There Be to the Fiscal Developments?

- The tax changes might have beneficial supply side effects.
- The spending increases might be on things that we value as a country.
- Perhaps the economy is still operating a fair amount below its normal or potential level ($Y < \bar{Y}$).
- Maybe it would be good to get inflation up.

Economics 134
Spring 2018

David Romer

LECTURE 9

The Conduct of Postwar Monetary Policy



I. OVERVIEW

Where We Have Been

- Have derived a theoretical framework for analyzing the impact of monetary policy actions.
- Have shown empirically that monetary policy actions affect output strongly in the short run.

Where We Are Headed

- What explains monetary policy decisions?
- Derive a framework for describing monetary policy choices.
- Discuss the crucial role of ideas in determining policy actions.
- Come back to the influence of monetary policy actions on the behavior of output and inflation.

II. DESCRIBING POLICY CHOICES USING A MONETARY POLICY RULE

Monetary Policy Rule

- Description of how the nominal interest rate responds to inflation and the output gap.
- Can describe Fed behavior in setting interest rate policy.
- Or, can just describe how nominal rates vary with the other variables when Fed is targeting something else (like the money supply).

Taylor's Version of a Monetary Policy Rule

$$i = \pi + gy + h(\pi - \pi^*) + r^f$$

- i is the nominal interest rate
- π is inflation
- y is the deviation of output from trend
- π^* is the Fed's target rate of inflation
- r^f is the equilibrium real interest rate

Can Rewrite It as Something Familiar

$$i = \pi + gy + h(\pi - \pi^*) + r^f$$

$$i - \pi = r^f + gy + h(\pi - \pi^*)$$

- This says the Fed sets the real interest rate equal to the equilibrium real rate
- With an adjustment for if output is above or below trend.
- And/or if inflation is above or below the target.

What is the Equilibrium Real Interest Rate?

- It is the real rate that equilibrates saving and investment when output is at potential.
- Or equivalently, it is where the IS and MP curves intersect when output is at potential.

$i = f(y, \pi)$ is True in Many Regimes

1. Under an explicit reaction function,
 - Fed likely to raise i when inflation rises and/or output is above trend.
2. Under discretionary leaning against the wind,
 - Same responses, though the degree of sensitivity is unclear.
3. Even under a money target or the classical gold standard.

Taylor's Parameter Estimates:

$$i = \pi + g\gamma + h(\pi - \pi^*) + r^f$$

$$i = (r^f - h\pi^*) + g\gamma + (1+h)\pi$$

- $g = 0.5$
- $h = 0.5$, so $(1+h) = 1.5$
- r^f is equal to 2
- π^* is equal to 2
- Some argue g should be larger (around 1)

If h Is Negative:

$$i = (r^f - h\pi^*) + gy + (1+h)\pi$$

- $1+h$ is < 1
- The real rate falls when inflation rises.
- Likely to be destabilizing – the Fed stimulates the economy when inflation rises.

Estimating the Monetary Policy Rule

$$i_t = a + by_t + c\pi_t + e_t$$

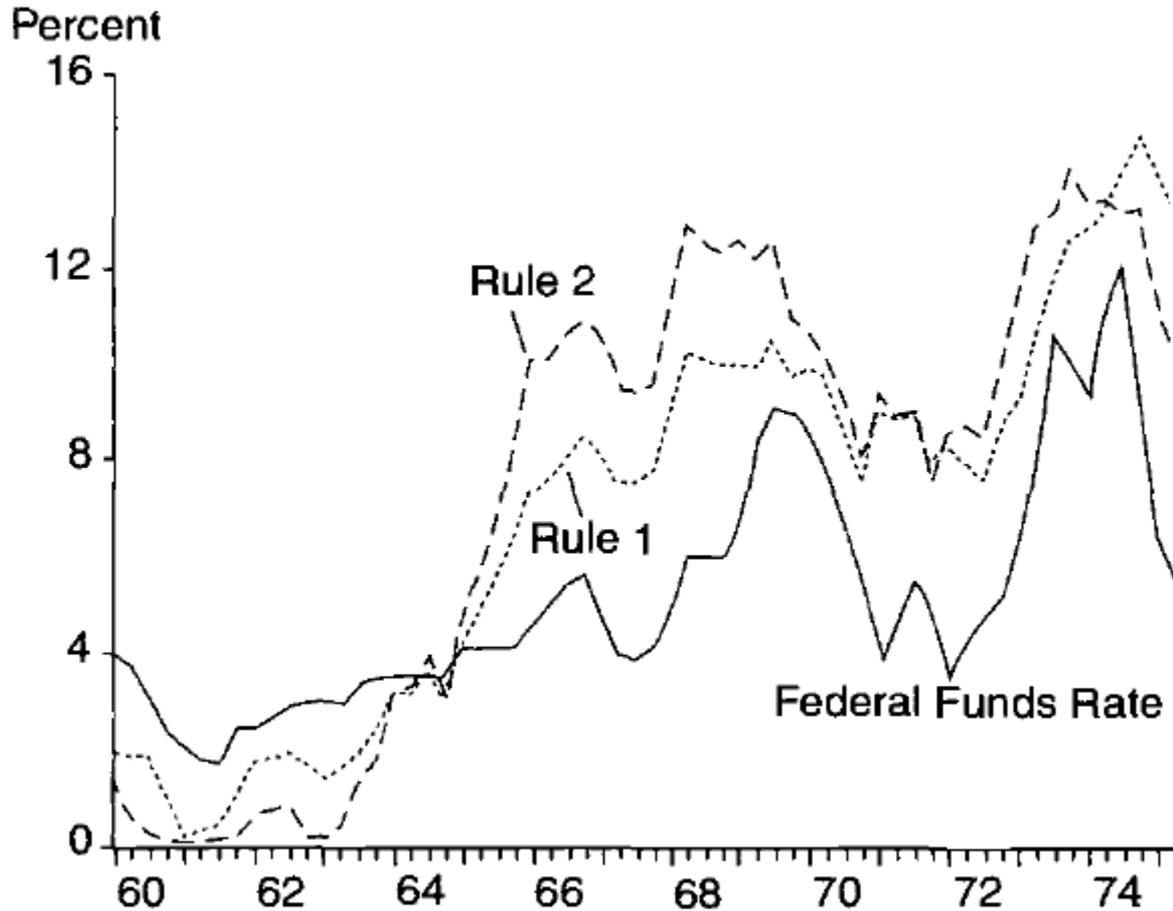
- Rather than imposing coefficients, estimate them.
- Taylor uses OLS.
- We will come back to this.

Estimating the Monetary Policy Rule in Different Eras

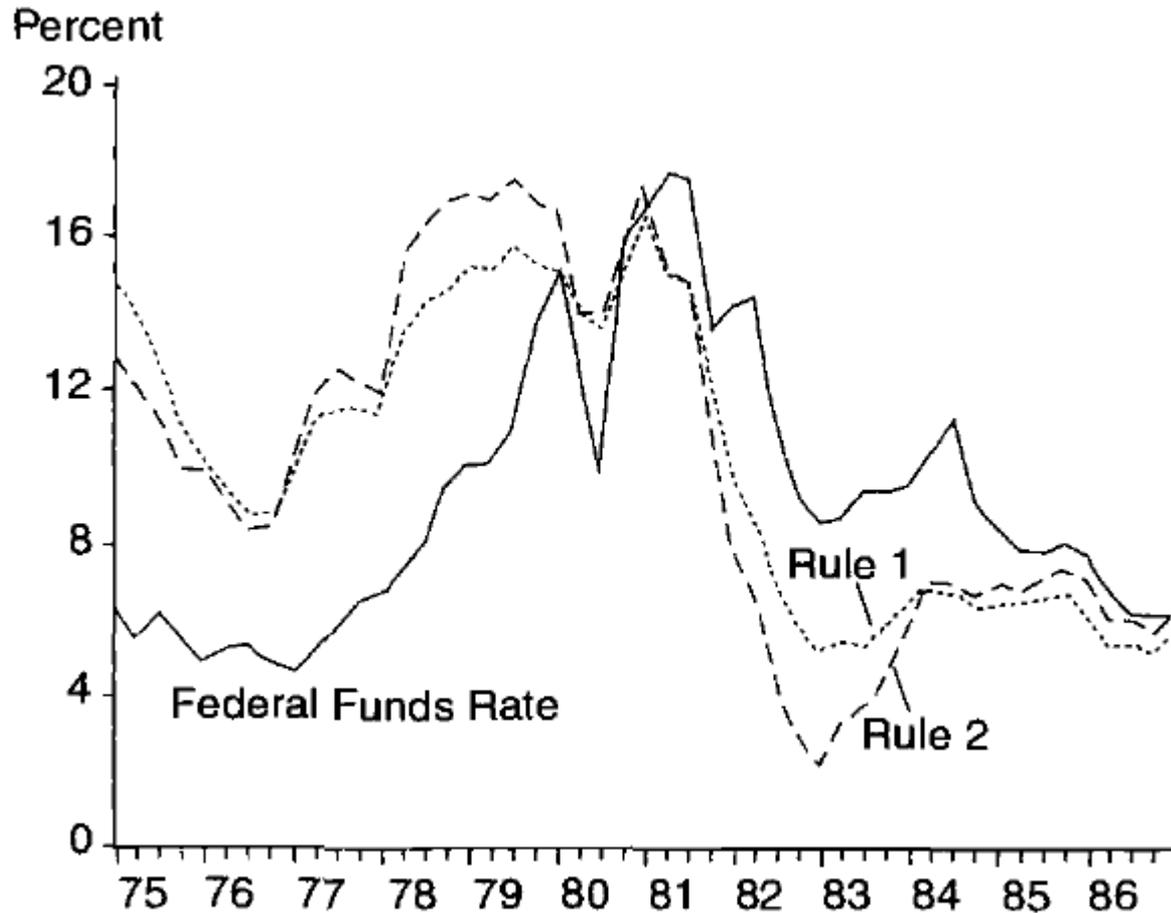
| | Bretton Woods and Post-Bretton Woods Eras | | |
|----------|---|--------------|--------------|
| | 1960:1–79:4 | 1987:1–97:3 | 1954:1–97:3 |
| | Coefficient | Coefficient | Coefficient |
| Constant | 2.045 (6.34) | 1.174 (2.35) | 1.721 (5.15) |
| π | 0.813 (12.9) | 1.533 (9.71) | 1.101 (15.1) |
| y | 0.252 (4.93) | 0.765 (8.22) | 0.329 (3.16) |
| R^2 | 0.70 | 0.83 | 0.58 |

Note: Numbers in parentheses are t-statistics (coefficient estimate divided by the standard error).

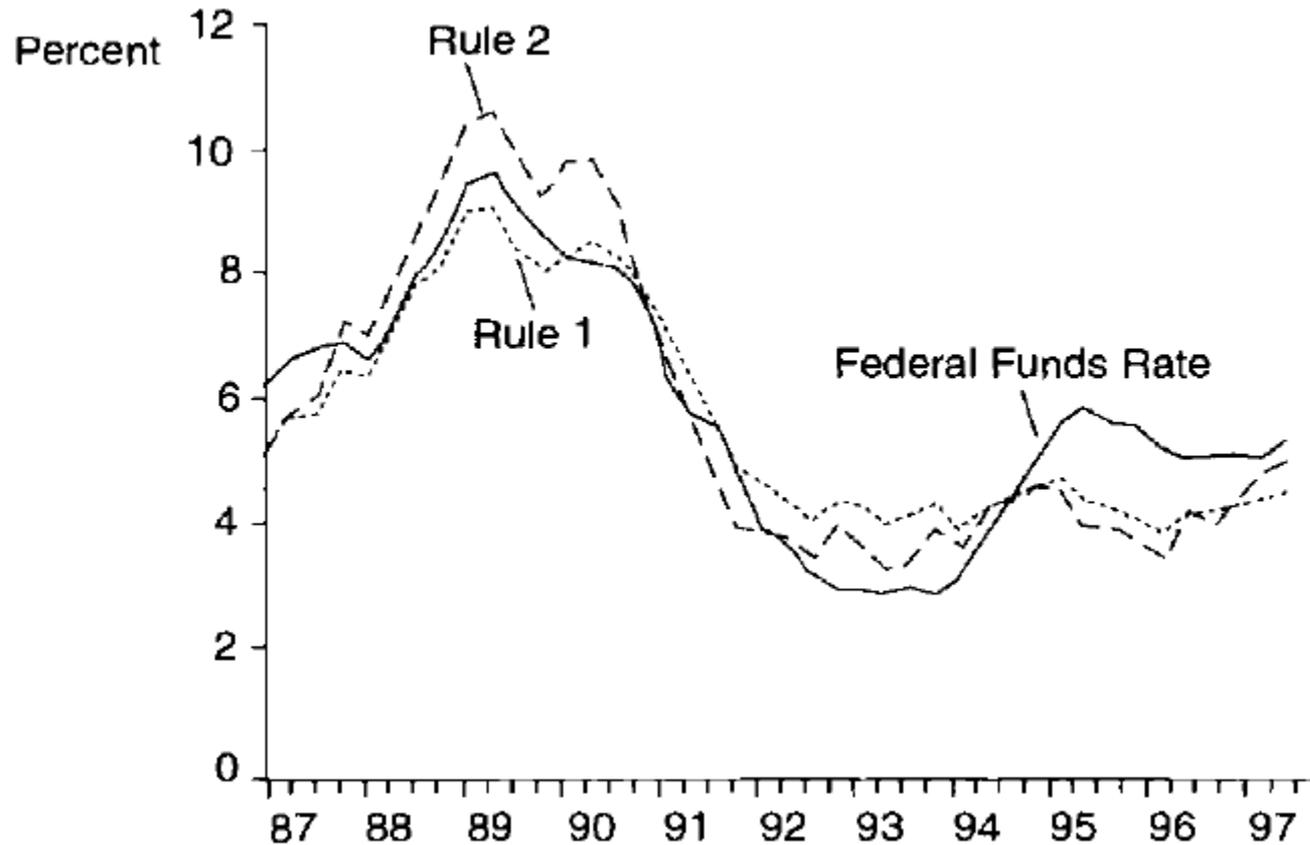
Federal Funds Rate: Too High in the Early 1960s; Too Low in the Late 1960s



Federal Funds Rate: Too Low in the 1970s; On Track in 1979-81; Too High in 1982-84



Federal Funds Rate: On Track in the Late 1980s and 1990s



Are Taylor's Estimates Likely to Suffer from Omitted Variable Bias?

$$i_t = a + by_t + c\pi_t + e_t$$

- For concreteness, consider a postwar sample.
- Is Taylor trying to estimate the *causal* effect of y and π on the Fed's choice of i , or just summarize patterns in the data?
- In the latter case, it would make no sense to talk about omitted variable bias.

If We Want to Interpret Taylor's Regressions Causally

$$i_t = a + by_t + c\pi_t + e_t$$

- Two ways to get started at thinking about possible omitted variable bias:
 - What might be in the residual, e ? (That is, what other than y and π might affect i ?)
 - Why do y and π vary over time?

What Might Be in the Residual, e ?

$$i_t = a + by_t + c\pi_t + e_t$$

- Changes in the Fed's rule or objectives.
- The impact of Fed objectives other than y and π ?
- The impact of additional information the Fed has about the likely future path of the economy.
- Imperfect control by the Fed over i .

For Each Possible Source of Variation in the Residual, We Can Think about Whether It Is Likely to Cause Omitted Variable Bias

$$i_t = a + by_t + c\pi_t + e_t$$

- Example: Changes in the Fed's rule or objectives.
 - Periods when the Fed is less concerned about inflation are likely to be times of looser monetary policy than usual for a given y and π (that is, negative e 's) and of higher inflation.
 - The resulting negative correlation between e and π will tend to bias the estimate of c down.

III. ROLE OF IDEAS IN DETERMINING MONETARY POLICY ACTIONS AND OUTCOMES

What Is Romer and Romer's Thesis about the Determinants of Monetary Policy Success?

- Policymakers' views about the functioning of the economy and what monetary policy can accomplish.

How Do Romer and Romer Identify Economic Ideas Held by Policymakers?

- Read FOMC documents.
- Read speeches and testimony of Fed chairs.
- (Look at the economic relationships imbedded in Federal Reserve forecasts.)

Examples of Policymakers' Ideas that Romer and Romer Identify

- Natural rate hypothesis with a low estimate of the natural rate of unemployment.
- Natural rate hypothesis with a moderate or high estimate of the natural rate of unemployment.
- A permanent output-inflation tradeoff.
- Slack ($Y < \bar{Y}$) will have only a very small impact on inflation.

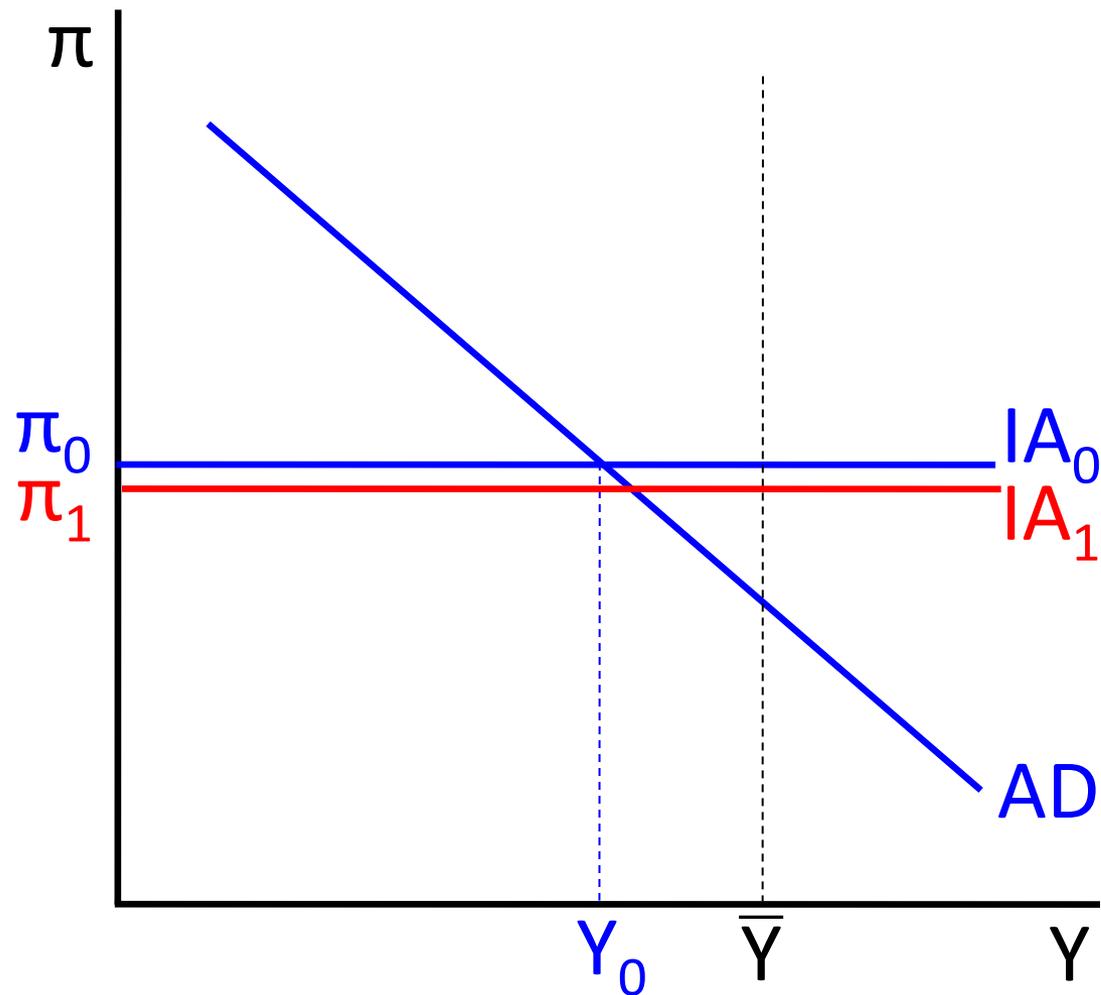
Example: Middle Burns and G. William Miller

Table 1

Beliefs and Policy Actions under Federal Reserve Chairmen since 1936

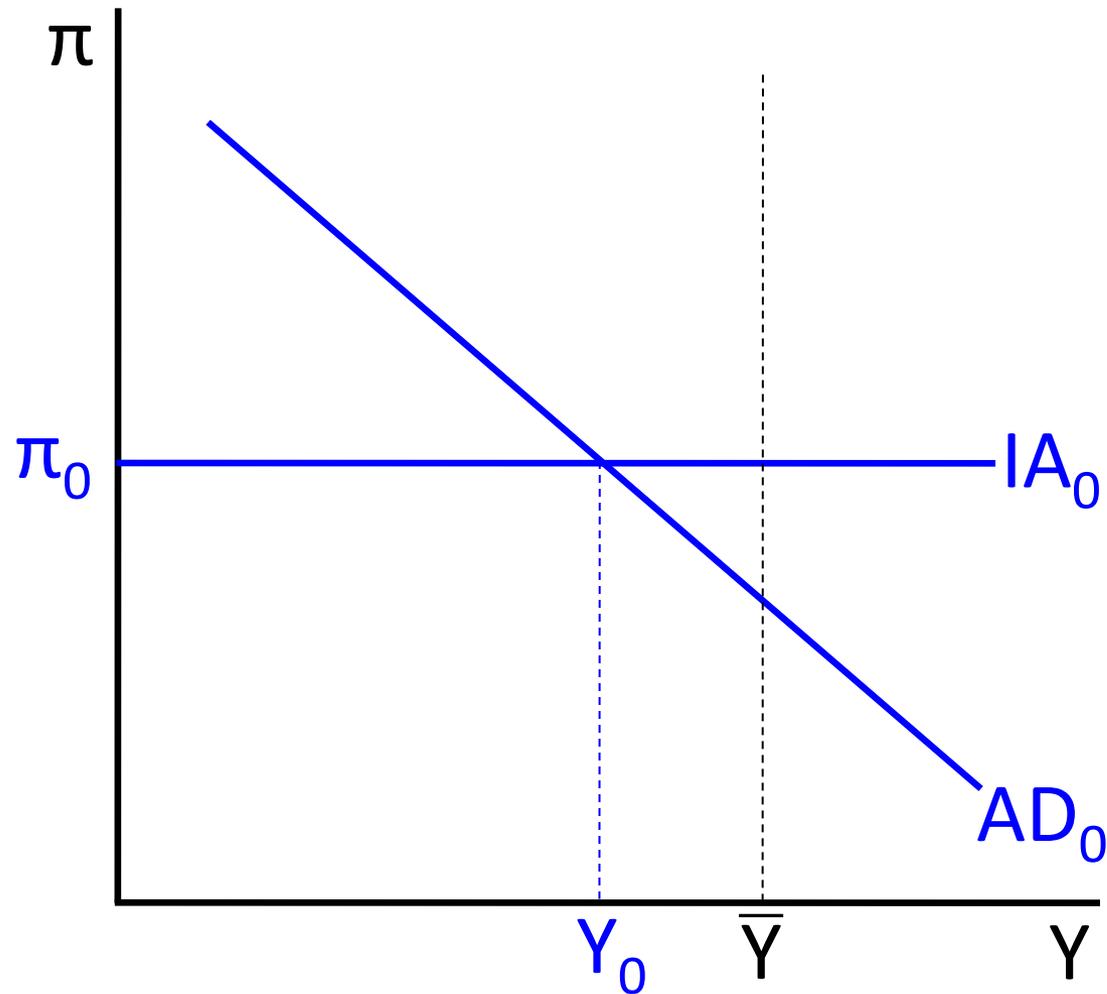
| <i>Key beliefs</i> | <i>Resulting policy actions</i> |
|--|---|
| <u>Arthur Burns (February 1970–January 1978)</u> (Middle) Extreme pessimism about the sensitivity of inflation to slack | Expansion in 1972–1973; advocacy of incomes policies |
| <u>G. William Miller (March 1978–August 1979)</u> Natural rate is relatively low Extreme pessimism about the sensitivity of inflation to slack | Expansion despite high and rising inflation; advocacy of incomes policies |

Bad Idea: Inflation Responds Little to Slack

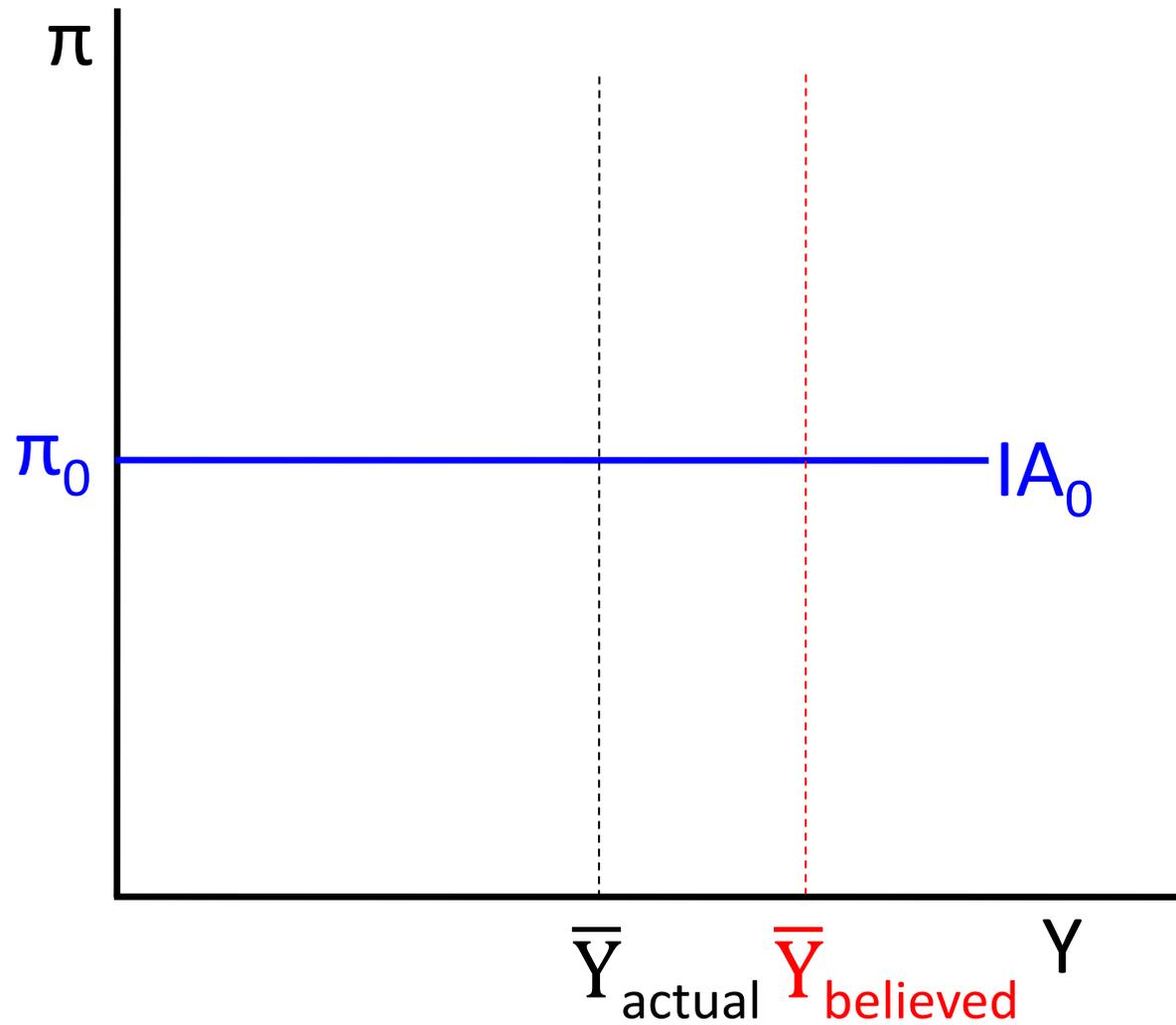


IA will shift down only very slowly in response to $Y < \bar{Y}$.

What Policies Are Likely to Be Followed If Policymakers Believe Inflation Responds Little to Slack?



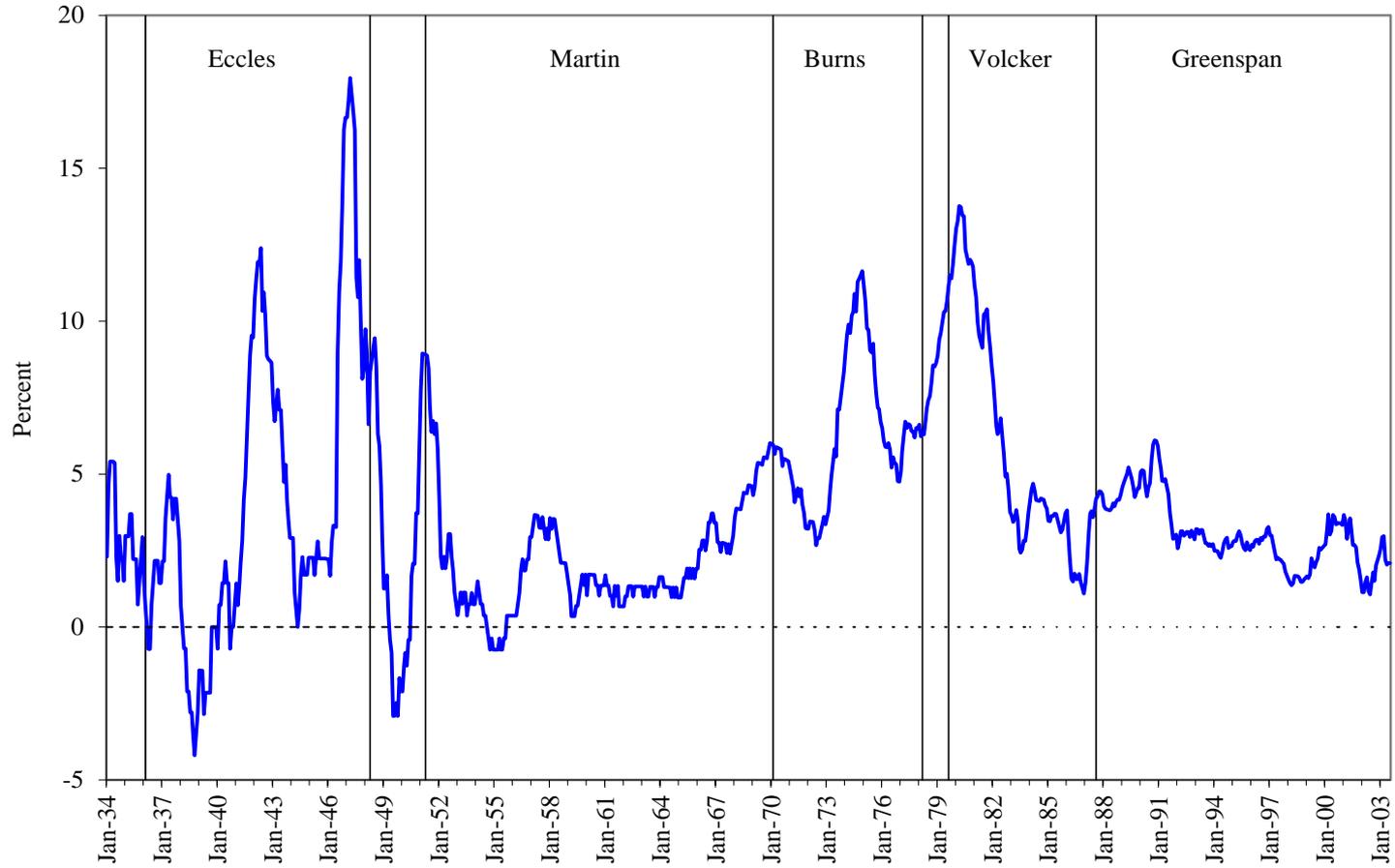
What If Policymakers Believe Inflation Responds Little to Slack and Have an Overly Optimistic Estimate of \bar{Y} ?



How Were Ideas Reflected in Monetary Policy Choices in the Early and Late 1970s?

- No reason to for contractionary policy because they thought it wouldn't curb inflation.
- Unrealistic estimates of the natural rate led to expansionary policy.
- Fed officials pushed for other policies to control inflation, such as price controls.

Figure 2
Inflation Rate



How Have Ideas Been Reflected in Monetary Policy Choices since 2006?

- Didn't respond to asset price bubble in the mid-2000s because inflation was low and unemployment was at the natural rate.
- Took aggressive action to fight the recession after the housing bubble burst.

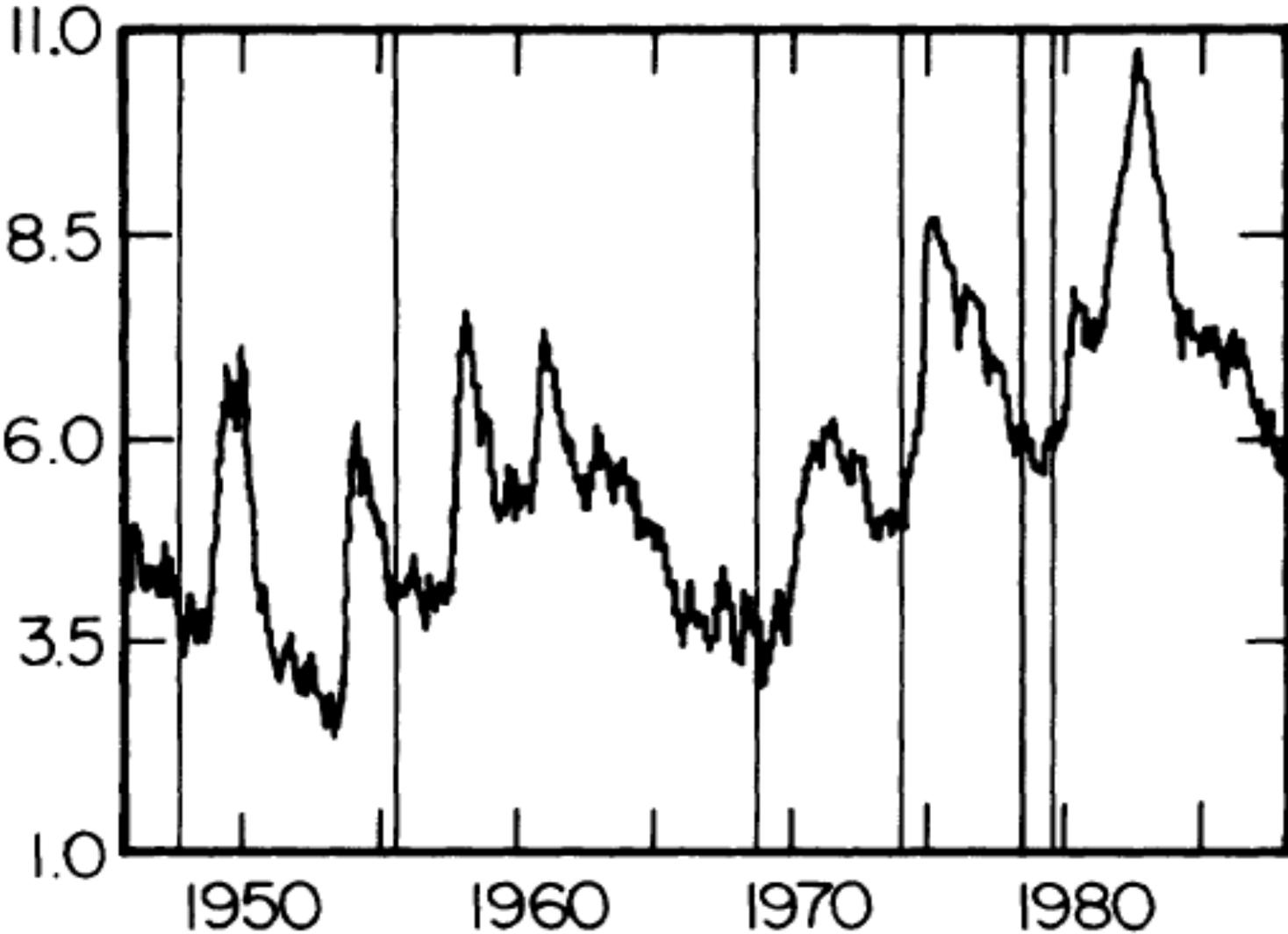
Views of Some FOMC Members in Recent Years

- Can get inflation even when $Y < \bar{Y}$.
- Natural rate of unemployment may be quite high.
- Monetary policy can do little at the zero lower bound.
- The current unemployment rate may be a poor guide to the amount of slack in the economy.

What Does Romer and Romer's Analysis Suggest about a Question We Discussed Early in the Course?

- The question: Why did the rise of stabilization policy not cause the economy to quickly become much more stable?

The Unemployment Rate after “Romer & Romer Dates”



The CPI Inflation Rate after “Romer & Romer Dates”

