

The Power of Macroeconomics

Lecture Five: Inflation, Unemployment, and Stagflation



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Purpose Of Lesson

■ Examine:

1. Unemployment
2. Inflation
3. Stagflation

Unemployment and Inflation

- Two important problems in macroeconomics.
- In most cases, macroeconomists can solve at least inflation or unemployment.
- When economists solve one problem, they usually worsen the other.

The Inflation/Unemployment Tradeoff

- Expansionary policies stimulate a recessionary economy – but cause inflation.
- Contractionary policies fight inflation– but can trigger unemployment and recession.

Keynesianism and Stagflation

- What happens when an economy faces both high unemployment and inflation?
- Are traditional Keynesian-style monetary and fiscal policies still effective in fighting such “stagflation?”

An Inflation-Unemployment Tradeoff?

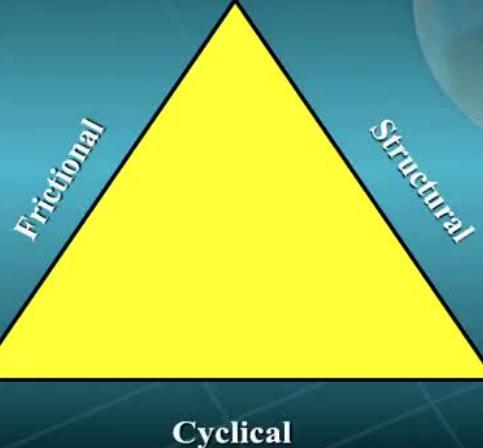
- One of the great macroeconomic debates:

- Is there a “Phillips Curve” tradeoff between unemployment and inflation?
- Or is the Phillips Curve simply a dinosaur concept of a failed Keynesianism?

Keynesianism vs. Monetarism

- Compare and contrast the Keynesian and Monetarist views of stagflation.
- Illustrate why Supply Side economics emerged in the 1980s as a viable political alternative.

Three Kinds of Unemployment



Frictional Unemployment

- The least of the macroeconomist's worries.
- Arises because of movement of people between regions and jobs or through different stages of their "life cycle."



Frictional Unemployment

- Reflects normal turnover in labor market
- Examples:
 - Students graduate and search for jobs
 - Women reenter labor force after giving birth



Cyclical Unemployment

- A much more serious problem.
- Occurs when economy dips into recession.
- Macroeconomists spend most of their time trying to solve it.

Structural Unemployment

- A mismatch between available jobs and worker skills.
- Structural unemployment often results when technological change makes someone's job obsolete.
- Examples:
 - The highly-skilled glass blower thrown out of work by the invention of bottle-making machines
 - The specialized auto worker replaced by a robot.

Location & Structural Unemployment

- Structural unemployment can result from a mismatch between the location of workers and the location of job openings.

HISTORICAL EXAMPLE

Oil workers out of work when oil prices plunged despite low unemployment in other parts of the country.

Distinction Between Three Types of Unemployment Helps With Diagnosis

KEY POINTS

1. Cyclical unemployment due to recession can be cured with expansionary fiscal or monetary policies.
2. Structural unemployment requires more targeted policies such as job retraining.

LECTURE FIVE - PART TWO

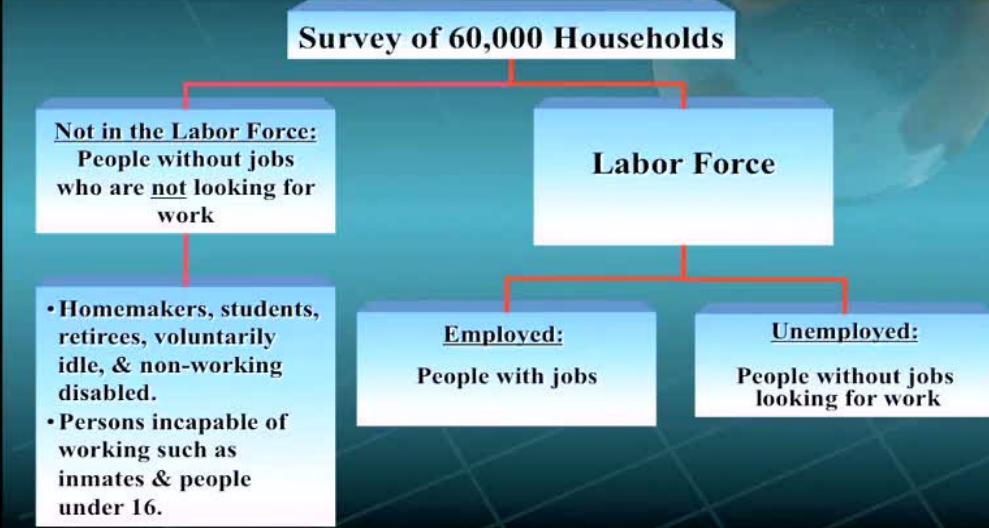
Two Important Questions

- 1. How is unemployment rate defined?**
- 2. How is it measured?**

Collecting Unemployment Data

- Statistics on unemployment and the labor force are gathered monthly.
- The procedure used is *random sampling* of the population.
- About 60,000 households are interviewed monthly to get a picture of the entire workforce.

The Unemployment Rate



The Unemployment Rate Formula

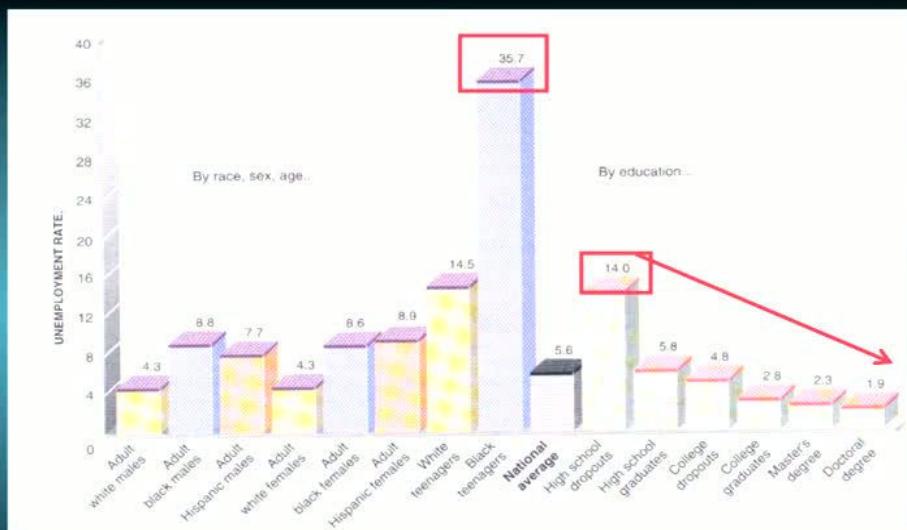
$$\frac{\text{Unemployed}}{\text{Labor Force}} \times 100 = \text{Unemployment Rate}$$

Exercise

$$\frac{\text{Unemployed:} \\ 8 \text{ Million}}{\text{Labor Force:} \\ 130 \text{ Million}} \times 100 = ?$$

Solution

$$\frac{8 \text{ Million}}{130 \text{ Million}} \times 100 = 6.2\%$$



Is this unemployment frictional, structural, or cyclical?

Teenage Unemployment

- A large frictional component.
- Teenagers move in and out of the labor force very frequently.
- Teens get jobs quickly and change jobs often.

Unemployment by Age

- Half the unemployed teenagers are “new entrants” who have never had a paying job before.
- All these factors suggest that teenage unemployment is largely frictional.



One possible reason is racial discrimination.

The Minimum Wage & Welfare State

- **Theory 1:** A high minimum wage tends to drive low-productivity black teenagers into unemployment.
- **Theory 2:** Conservatives blame high black unemployment on a culture of dependency nurtured by government welfare to the poor.

LECTURE FIVE - PART THREE

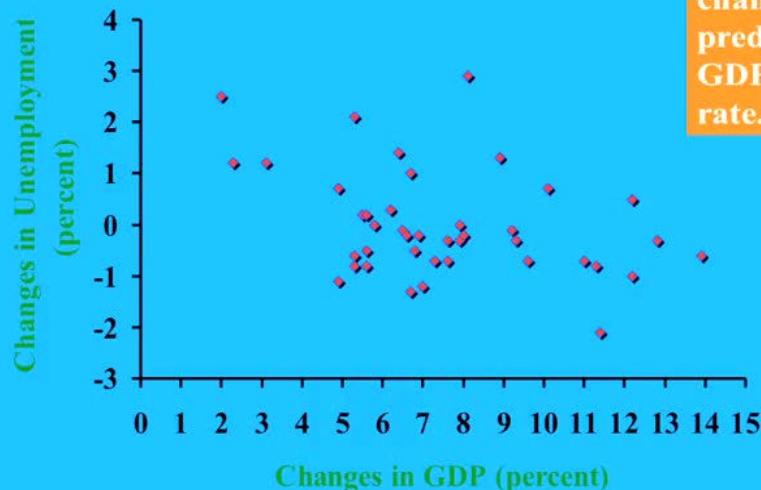
Lost Output			
Average Unemployment Rate (%)	GDP loss (\$, billion, real)	As percent of GDP during the period	
Great Depression (1930-1939)	18.2	4,400	38.5
Sluggish fifties (1954-1960)	5.2	70	0.3
Oil and inflation crises (1975-1984)	7.7	2,100	3.6

Okun's Law

- The previous table uses *Okun's Law*.
- Through data analysis, Okun found an important “co-movement” between output and unemployment.

When GDP falls, unemployment rises!

Okun's Law



Okun's Law: For every 2% GDP falls, unemployment rises by 1%.

Question

- Assume GDP begins at 100% of its potential and falls to 98%.
- Further assume unemployment rate is 6%.

QUESTION
How will that rate change?

Answer

- According to Okun's Law, the unemployment rate will rise from 6% to 7%.

REMEMBER OKUN'S LAW
For every 2% actual GDP falls relative to potential GDP, the unemployment rate rises by 1 percentage point.

An Historical Example of Okun's Law

- 1979: Unemployment rate = 5.8%.
- Over next three years, actual real GDP doesn't grow.
- BUT Potential GDP increases 9% percent.

EXERCISE

Use Okun's Law to predict the unemployment rate in 1982.

Figuring Out the Answer

- Okun's Law says a 2% fall in GDP should result in a 1% rise in unemployment
- So a 9% GDP shortfall should increase unemployment rate by 4.5%.
- With unemployment rate at 5.8% in 1979, Okun's Law predicts a 10.3% unemployment rate by 1982.
- Actual rate was very close – 9.7%.

Okun's Law and Potential GDP

- Okun's Law implies actual GDP must grow as rapidly as potential GDP just to keep the unemployment rate from rising.
- GDP has to keep growing just to keep unemployment in the same place.
- If you want to bring the unemployment rate down, actual GDP must be growing faster than potential GDP.

LECTURE FIVE – PART FOUR

Inflation is the Cruelest Tax

- Suppose the inflation rate exceeds the rate of growth in our paycheck.
- That means our real income or purchasing power is declining – even though our wages are going up!
- BUT inflation that is unanticipated can benefit borrowers at the expense of lenders.



Two Kinds of Inflation

■ Demand-Pull

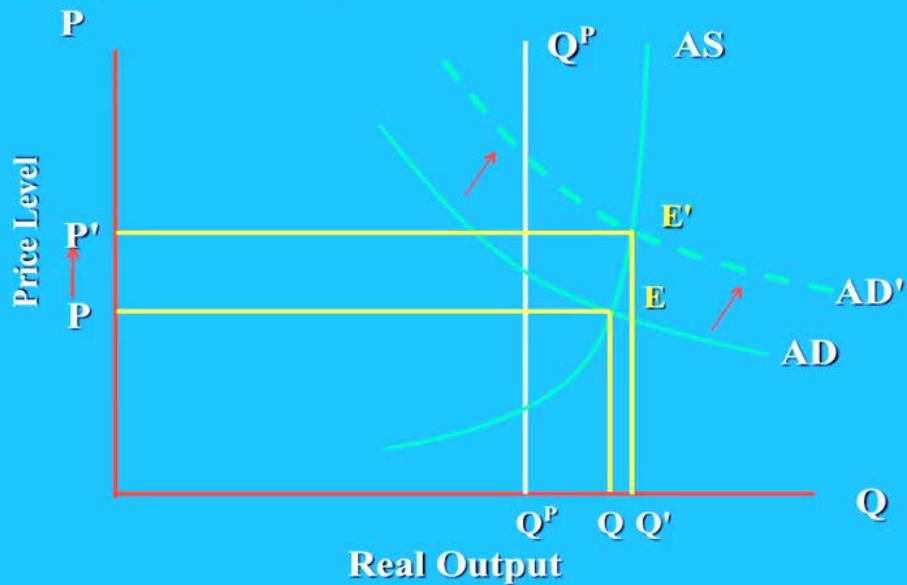
■ Cost-push

Demand-Pull Inflation

- “Too much money chasing too few goods”
- **Example:** The U.S. tried to finance both the Vietnam War and the Great Society.

Do you remember from Lecture One how to use the aggregate supply-aggregate demand framework to depict demand-pull inflation?

Demand Pull Inflation



Nixon's Price and Wage Controls

- In 1972, President Richard Nixon imposed price and wage controls.
- When the controls were lifted in 1973, inflation jumped back up to double digits.
- A new kind of inflation also emerged – “cost-push” or “supply side” inflation.

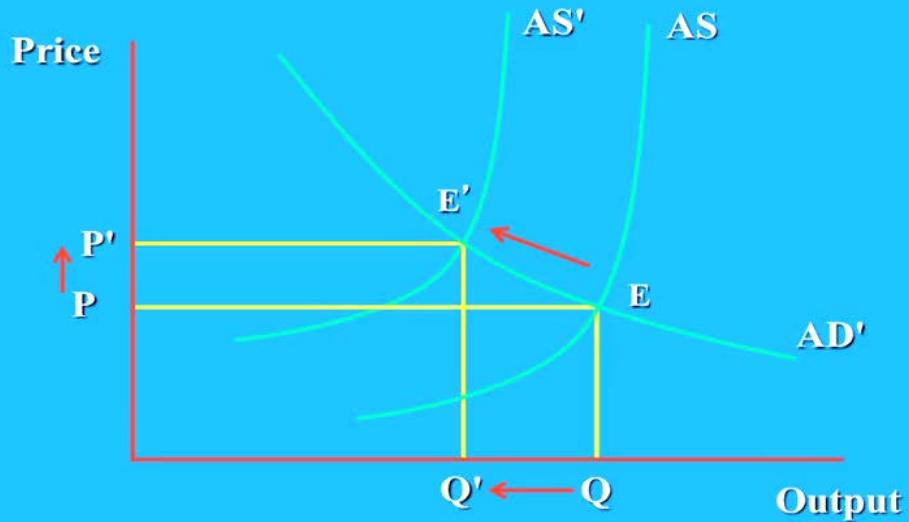


Cost Push Inflation

- Results when external shocks drive up production costs.
- “Supply shocks” can include crop failures and oil price spikes due to war or terrorism.

Do you remember from Lecture One how to use the aggregate supply-aggregate demand framework to depict cost-push inflation?

Cost Push Inflation



Prior To The 1970s

- Economists didn't believe high inflation and high unemployment could exist at the same time.
- If unemployment went up, inflation had to go down.
- The 1970s stagflation proved economists wrong.
- Keynesian economics was incapable of solving the new stagflation problem.

The Keynesian Dilemma

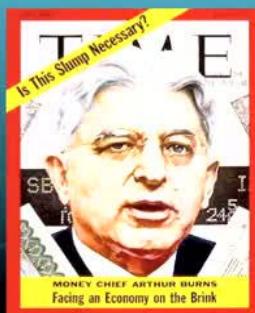
- Using expansionary policy to reduce unemployment creates more inflation
- Using contractionary policy to curb inflation deepens a recession.

KEY POINT

Keynesian tools can solve only half of the stagflation problem -- and only by making the other half worse.

A Failed Keynesian Response

- During 1973 and 1974, policymakers labeled inflation “public enemy number one.”
- Despite clear signs of recession, Fed Chairman Arthur Burns engaged in a sharply contractionary monetary policy.



President Ford's 1974 WIN Campaign

- President Gerald Ford's "Whip Inflation Now" included contractionary fiscal policy in the form of "fiscal restraint" and a tax surcharge.
- Contractionary policy by the Federal Reserve and White House drove economy deeper into recession.
- Meanwhile, oil price shocks drove the inflation rate higher.

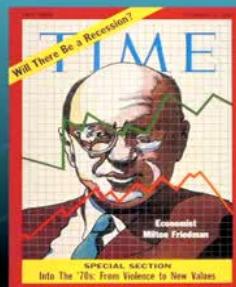


Switching Strategies Didn't Help

- In 1975, recession became the number one policy worry.
- Congress passed a \$23 billion Keynesian tax.
- The Fed switched to an expansionary Keynesian monetary policy.
- Stagflation blossomed!

Monetarist Perspective

- Stagflation set the stage for a Monetarist challenge to the Keynesian orthodoxy.
- To understand the Keynesian failure, we have to understand modern inflation theory and the Phillips Curve.



LECTURE FIVE – PART FIVE

The Core or Inertial Rate of Inflation

- Tends to persist at the same rate until a demand or supply side shock changes things.
- **Key Concepts:** “Inflationary expectations” and a behavioral model known as adaptive expectations.

Inflationary Expectations

- The expectation of inflation can significantly contribute to actual inflation.
- Inflationary expectations strongly influence the behavior of businesses, investors, workers, and consumers!

Adaptive Expectations

- We assume people believe *next year's* rate of inflation will be the same as *last year's*.
- Historical example: During 1990s, prices rose 3% per year, and most people came to expect that inflation rate.
- This expected rate was built into the core rate through institutional arrangements like labor contracts.

How Inflation Becomes Expected

- Suppose you are a labor negotiator and you believe your auto workers will achieve a 1% productivity increase.
- You will negotiate for at least a 1% increase in real, inflation adjusted wages.

QUESTION

Assuming last year's inflation rate was 3%, what is the percentage increase in nominal wages that you will demand?

How Inflation Becomes Expected

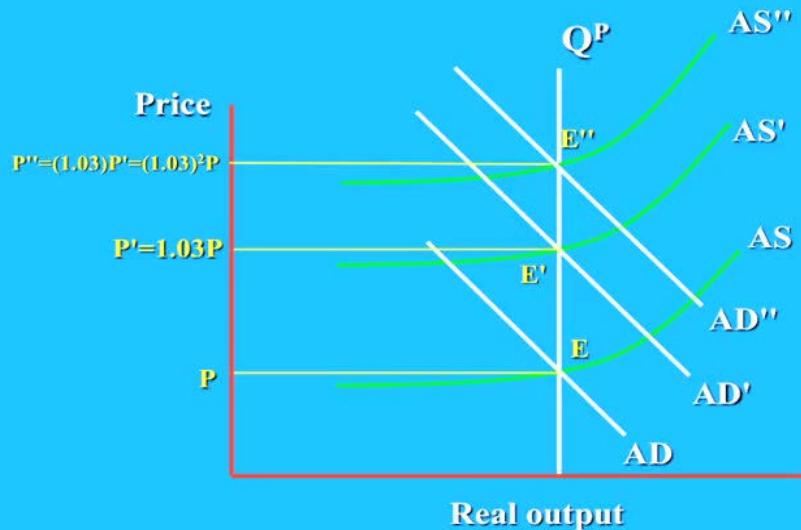
ANSWER

- You will demand a 4% increase in the nominal wage!
- 1% for productivity gains. 3% to adjust for expected inflation.
- This shows how inflationary expectations get built into an economy!

Expectations Become Reality



An Inflationary Spiral



Our Next Questions

1. Why does the core inflation rate change?
2. How can it spiral out of control?

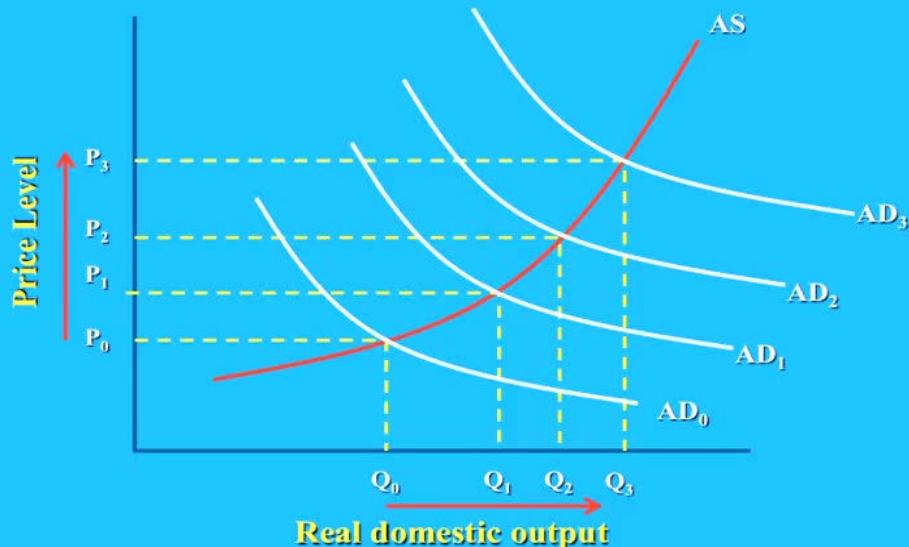
To answer these questions, we have to introduce the Phillips Curve.

Origins of the Phillips Curve

- A.W. Phillips studied data on unemployment and money wages in the United Kingdom.
- He found wages rose when unemployment was low but fell when unemployment was high.

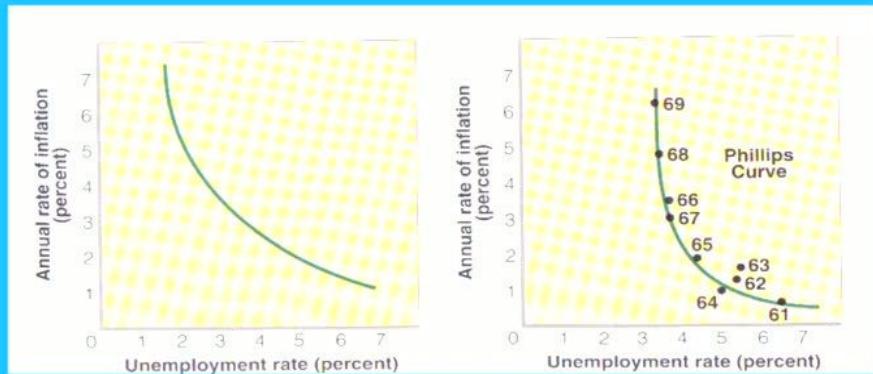


Question: What happens to unemployment rate as output rises?



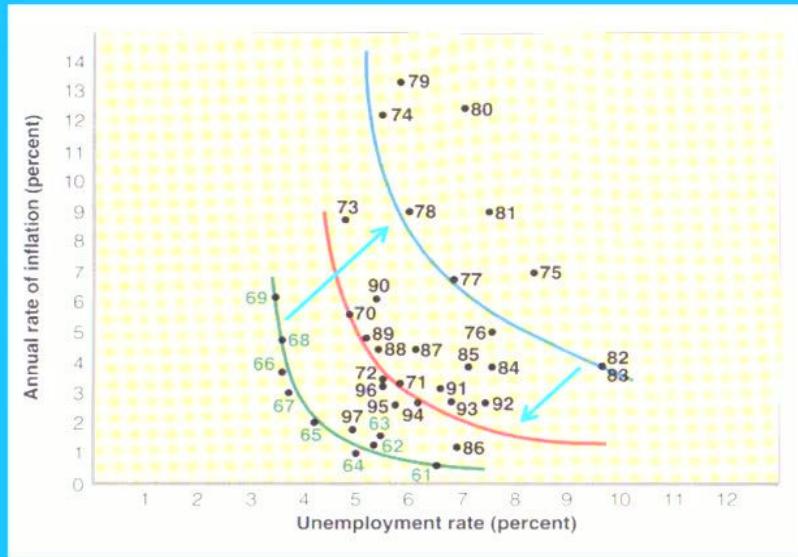
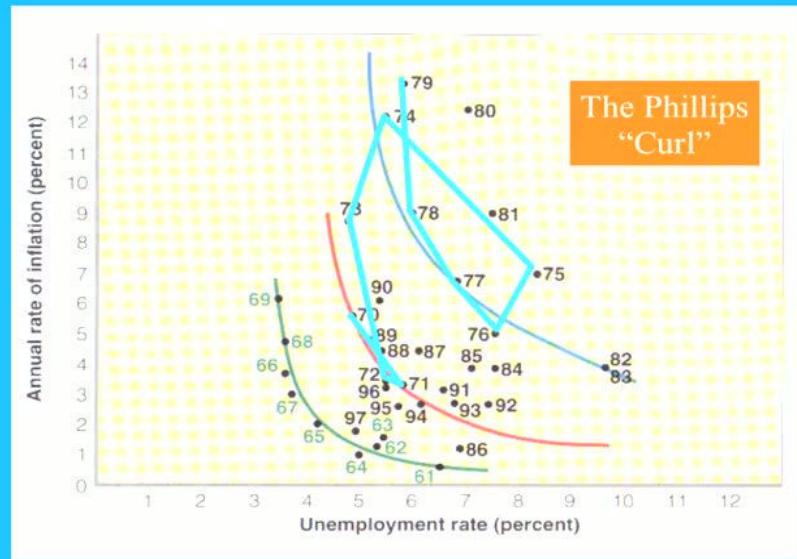
Answer:

Increase in real output leads to fall in unemployment as prices rise.



The Phillips Curve Becomes Conventional Wisdom

- Most economists came to believe that a stable, predictable tradeoff exists between unemployment and inflation.
- **Policy Implication:** You can use expansionary policies to reduce unemployment and the only price will be a bit more inflation.



From A Macro Policy Perspective

- This explanation preserves the Phillip's Curve relationship.
- **Implication:** Policymakers can still engage in expansionary policy with the only price paid being a little more inflation for a little more employment.

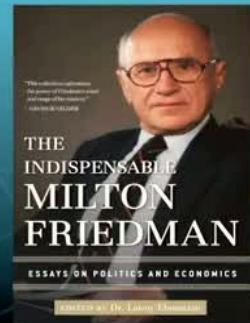
Monetarists Explain the Phillips Curve

- The disappearance of the Phillips Curve in the 1970s and the appearance of the Phillips Curl can be explained using the *natural rate of unemployment* concept.
- Monetarists also distinguish between a short run and a long run Phillips Curve.

LECTURE FIVE – PART SIX

The Modified Phillips Curve

- The theory grew out of the work of Edmund Phelps and Milton Friedman
- There is a minimum unemployment rate consistent with steady inflation.



The Natural Rate of Unemployment

- A key concept of Monetarist inflation theory
- AKA the “lowest sustainable rate of unemployment” without causing inflation

MONETARISTS' MAJOR POINT

1. It is impossible to drive unemployment below the natural or lowest sustainable rate in the long run.
2. Implies long run Phillips Curve is vertical rather than downward sloping.

The Monetarists' Natural Rate Theory

- Strikes at the heart of Keynesian activism.
- Implication 1: Expansionary fiscal or monetary policy can drive unemployment below the natural rate temporarily
- Implication 2: This Keynesian “joy ride” along the short run Phillips Curve must inevitably come at the price of rising inflation.

A Deadly Inflationary Spiral

KEY POINT

If a nation repeatedly uses Keynesian policies to try and keep unemployment below the natural rate, an inflationary spiral will result in the long run.

How An Inflationary Spiral Happens

- The natural rate of unemployment is **NOT** a constant.
- The natural rate of unemployment **CHANGES** as the structure of an economy changes.
- **Example:** In the prosperous 1960s, the natural rate of unemployment ranged between 4% to 5% but rose in the 1970s.

Supply Shocks Drive up the Rate

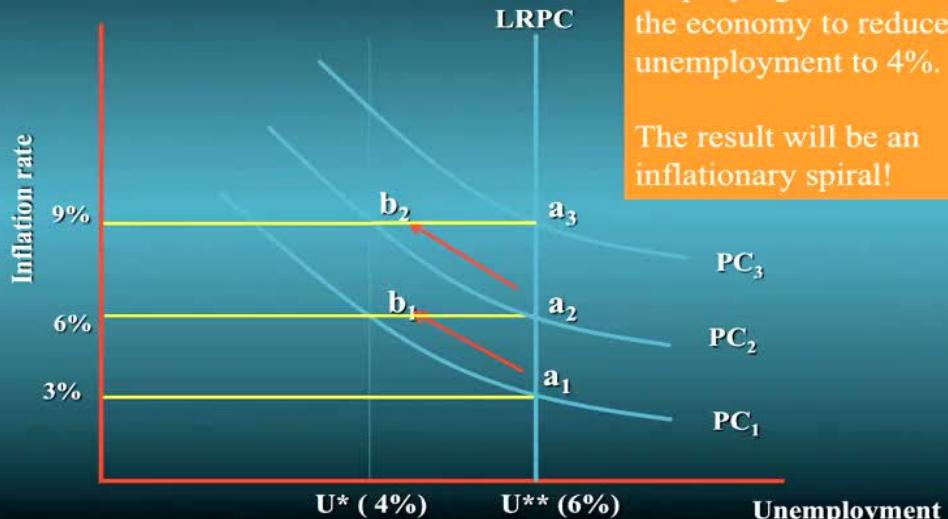
- The natural rate of unemployment climbed to 5% to 6% range in the 1970s because of supply side shocks.
- Shocks like energy price shocks raised the real costs of production.
- Higher costs, in turn, lowered potential output.



From The Monetarist's Perspective

- The Monetarist perspective on the Phillips Curve helps illustrate how inflation can spiral out of control.
- **The trigger:** Policy makers try to expand the economy below its natural rate of unemployment.

An Inflationary Spiral



ANSWER

The policymakers will keep trying to stimulate the economy to reduce unemployment to 4%.

The result will be an inflationary spiral!

LECTURE FIVE – PART SEVEN

An Obvious Policy Question

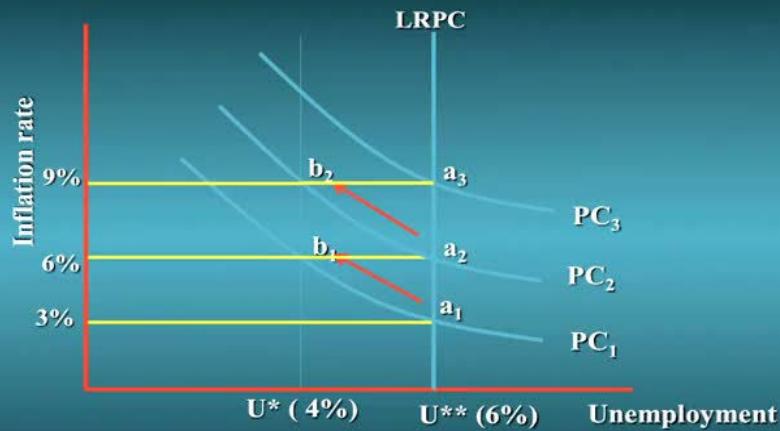
- This Monetarist-inspired story raises an obvious policy question: How do you stop such an inflationary spiral?

The Monetarist Solution

- Stop using expansionary Keynesian policies.
- Allow the economy to return to the natural rate of unemployment.

THE BIG PROBLEM

Even if we stop an upward inflationary spiral, we still have significant inflation because a higher core rate of inflation has been built into the economy!!!!



EXAMPLE

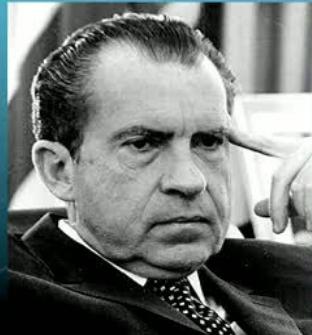
If we stop inflation's upward spiral, we may be stuck at Point a_3 with a core inflation rate of 9%.

The Traditional Keynesian Solution

- An “incomes policy”
- Impose wage and price controls until the inflation dissipates.

An Incomes Policy May Not Work

- President Nixon learned this in the 1970s.
- He watched helplessly as inflation jumped back up to double digits once controls were lifted.



An Incomes Policy is Ideologically Contrary

- Businesses don't want government holding down their prices.
- Workers don't want government holding down their wages.

The Monetarists' Bad Politics

- It is equally politically unpalatable.



The Monetarists' Recession Solution

- To wring inflation out of the economy, the actual inflation rate must be below the expected inflation rate.
- To achieve this, the actual unemployment rate must be above the natural rate.
- That means inducing a recession!!



The Federal Reserve's 1979 Gambit

- Under Chairman Paul Volcker, the Federal Reserve adopted a sharply contractionary monetary policy.
- Incredibly, interest rates soared to over 20%.



Effective But Costly

- The resulting recession was the worst since the Great Depression
- It probably cost President Jimmy Carter re-election



Effective But Costly

- The resulting recession was the worst since the Great Depression
- It probably cost President Jimmy Carter re-election
- BUT between 1979 and 1984, inflation fell dramatically.

The Cost of Disinflation, 1980-1984

Initial Rate of Inflation:

1979	9%
1984	4%
Change	-5 percentage point

Difference between potential and actual GDP (1996 prices)

1980	\$150 billion
1981	210
1982	470
1983	470
1984	200

Total: \$1,500 billion

Cost of disinflation= \$1.5 trillion

The Cost of Disinflation, 1980-1984

Initial Rate of Inflation:

1979	9%
1984	4%
Change	-5%

Difference between potential and actual GDP (constant prices)

1980	\$150 billion
1981	210
1982	470
1983	470
1984	200

Total: \$1,500 billion

Cost of disinflation= **\$1.5 trillion**

The Coming of Ronald Reagan

- The hard economic times left a bitter taste in the mouths of the American people.
- Enter stage right: Supply Side economics.



LECTURE FIVE – PART EIGHT

Reagan's Supply Side Platform

- Cut taxes
- Increase tax revenues
- Accelerate growth
- Do it **WITHOUT** inducing inflation

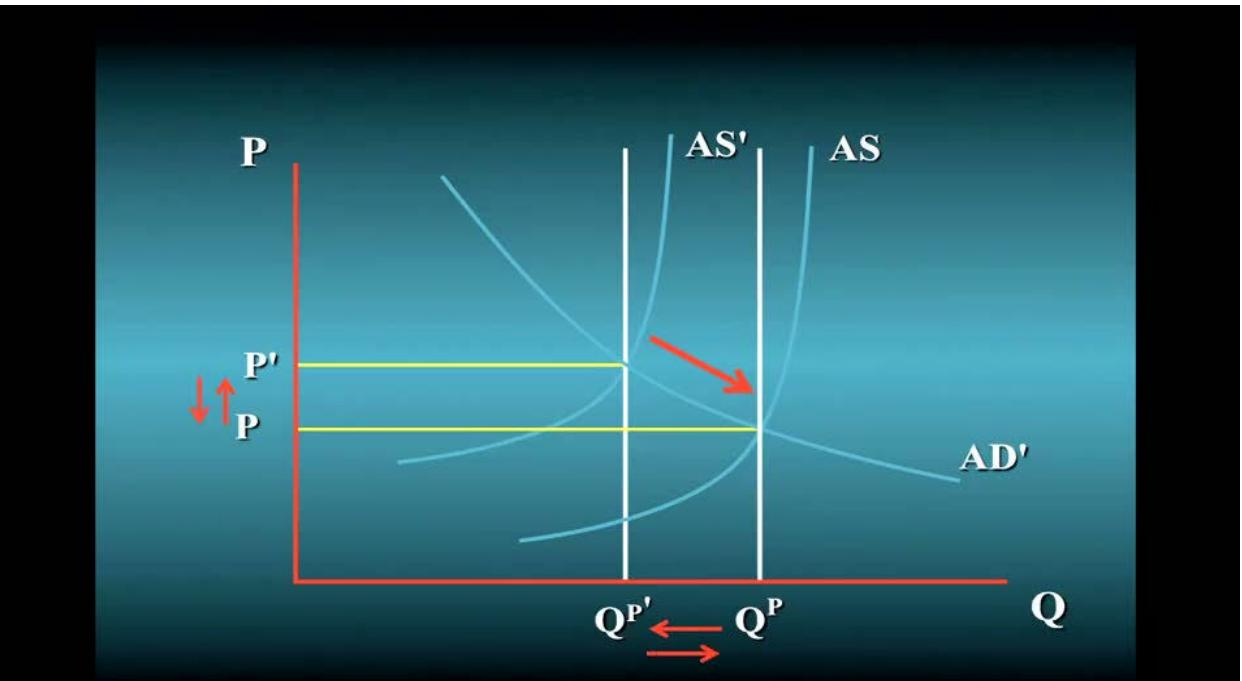


Supply Side vs. Keynesianism

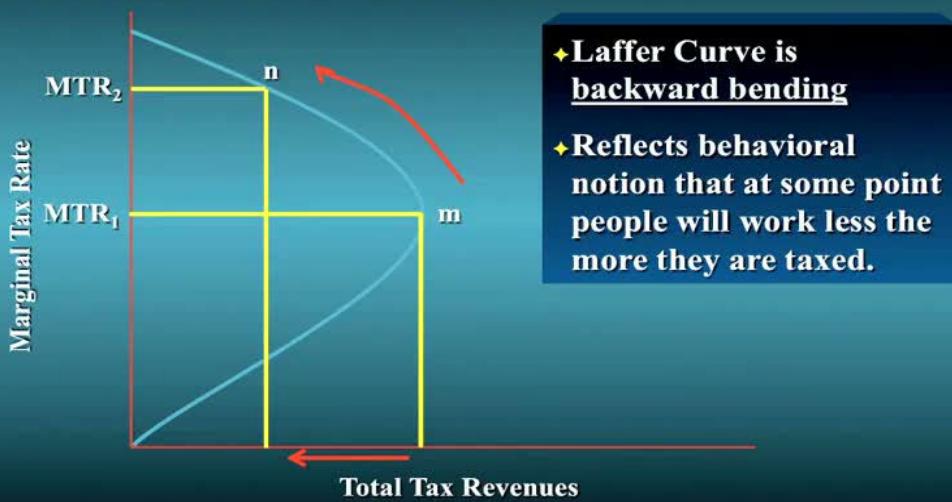
- The supply side approach looks similar to the 1960s Keynesian tax cut.
- Supply siders did not agree that such a tax cut would necessarily cause inflation.

A Behavioral Difference

- **Theory:** People will work harder and invest more if they were allowed to keep more.
- **Presumed Result:** Increase amount of goods and services our economy can produce by pushing out the supply curve
- **Ergo:** “Supply side” economics.



The Laffer Curve



The Reagan Tax Cut

- Assumed economy was on the backward bending portion of the Laffer Curve
- **Implication:** A tax cut would increase total tax revenues.
- Based on this assumption, it moved forward with one of the largest tax cuts in American history.



Reaganomics In Action

- Corporate tax rate cut 25%.
- Top marginal tax rate fell from 50% to 38%.

Key Point

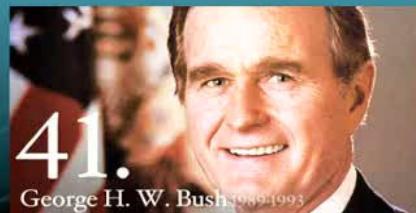
Deregulation of everything from monopoly and oligopoly to pollution and product safety was designed to shift aggregate supply curve out.

Did Supply Side Experiment Work?

- Significant declines in inflation and interest rates.
- A then record-long peacetime expansion.
- Full employment.
- BUT budget and trade deficits ballooned.

The “Twin Deficits” and President Bush

- The Twin Deficits deeply concerned Reagan's successor George Bush.
- The budget deficit jumped over \$200 billion at the midpoint of his term in 1990.
- The economy began to slide into recession.



New Classical Economics in Action

- To Keynesians, the 1990 recession would have called for expansionary fiscal and monetary policy.
- In the Bush White House, Ronald Reagan's Supply Side advisors had been supplanted by a new breed of "New Classical" economists.
- They replaced "adaptive expectations" with a new theory of "rational expectations" and rejected short-run Keynesian solutions.

THE POWER OF MACROECONOMICS

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END OF LESSON FIVE