



Econ 208

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Lecture 13

Monetary Policy in the Short Run



What to read

- DLS, chapter 19
- DLS, chapter 17.4 (next time)

- Lucas: What Economists Do (on the web)



Where are we?

- **Monetary Economics**
 - Money Supply
 - Money Demand
 - Long-Run effects of Monetary Policy
 - **Short-Run effects of Monetary Policy**
- Financial Intermediation

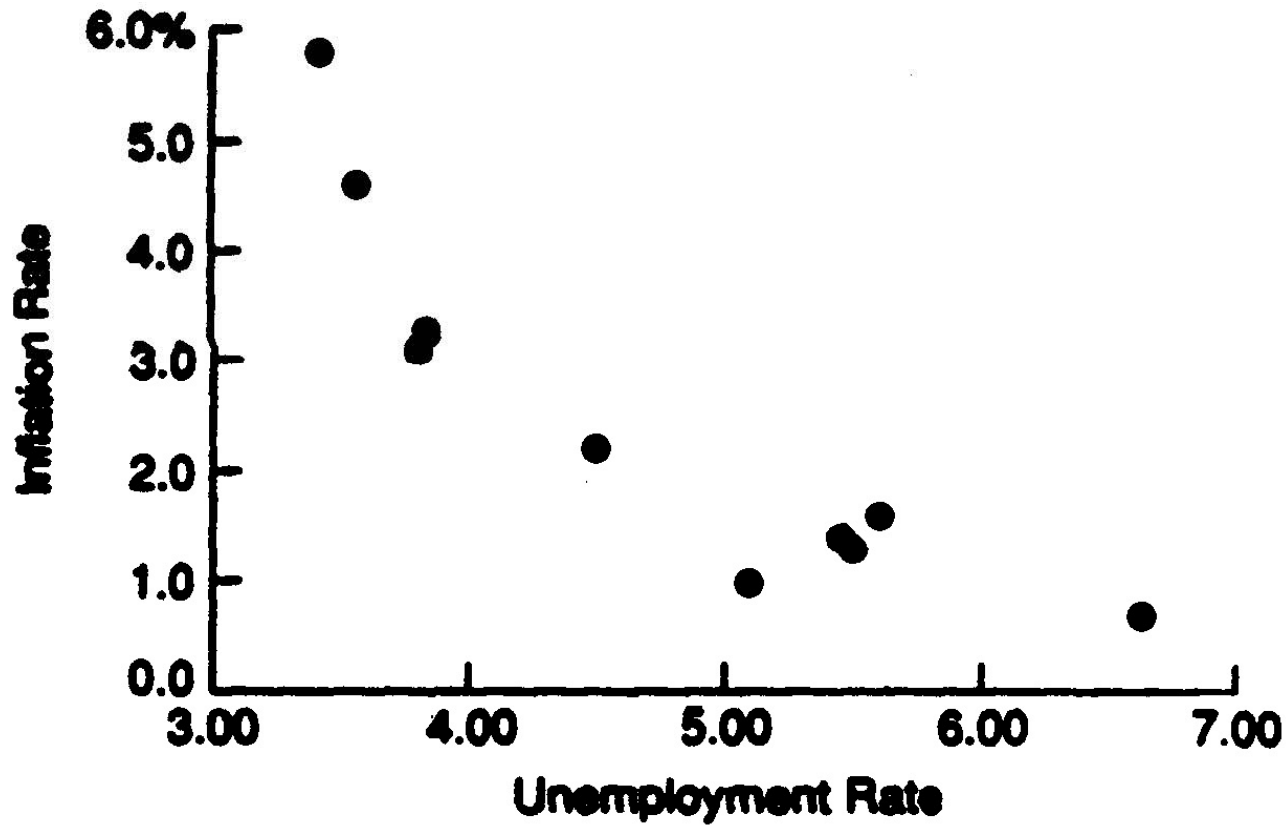


Main Themes

1. Can central bank use monetary policy to influence output?
 - Only in the short run
 - Not by a systematic monetary policy
2. What are the features of a **sound** monetary policy?
 - Ability to commit
 - E.g. independent central bankers

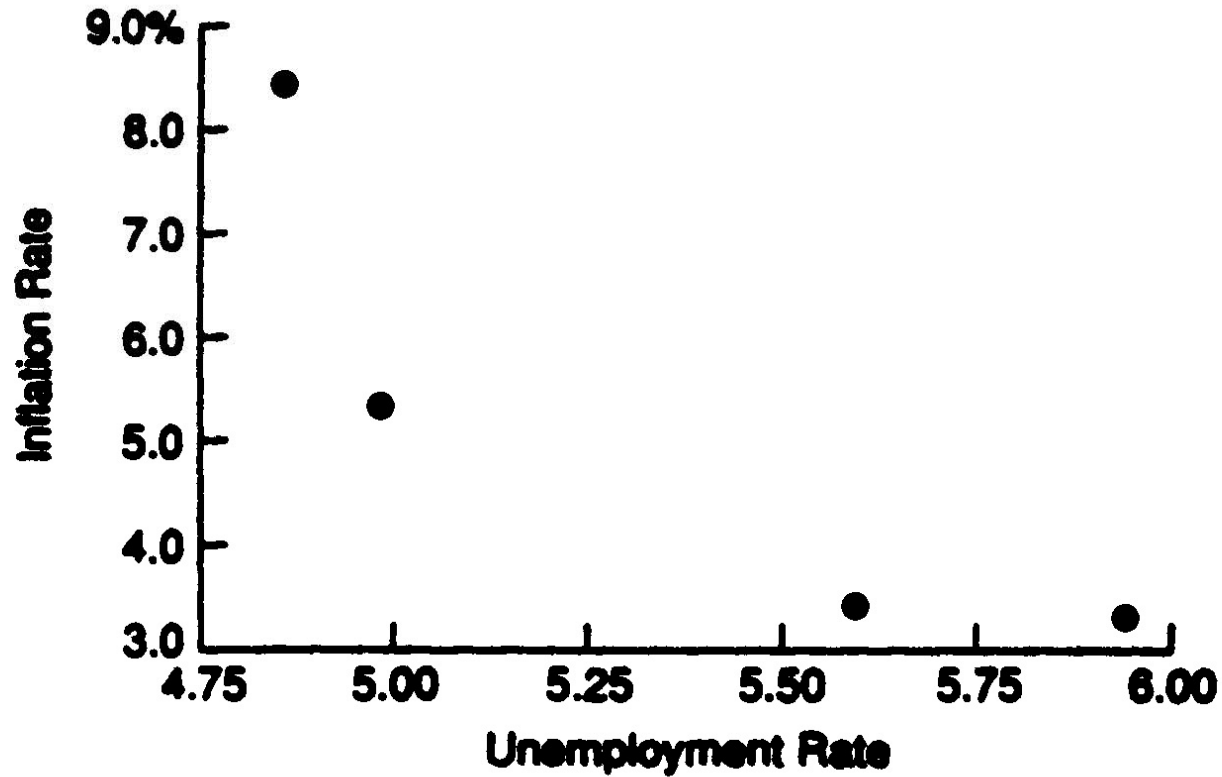
Phillips Curve

(b) 1960-1969



Phillips Curve

(c) 1970-1973

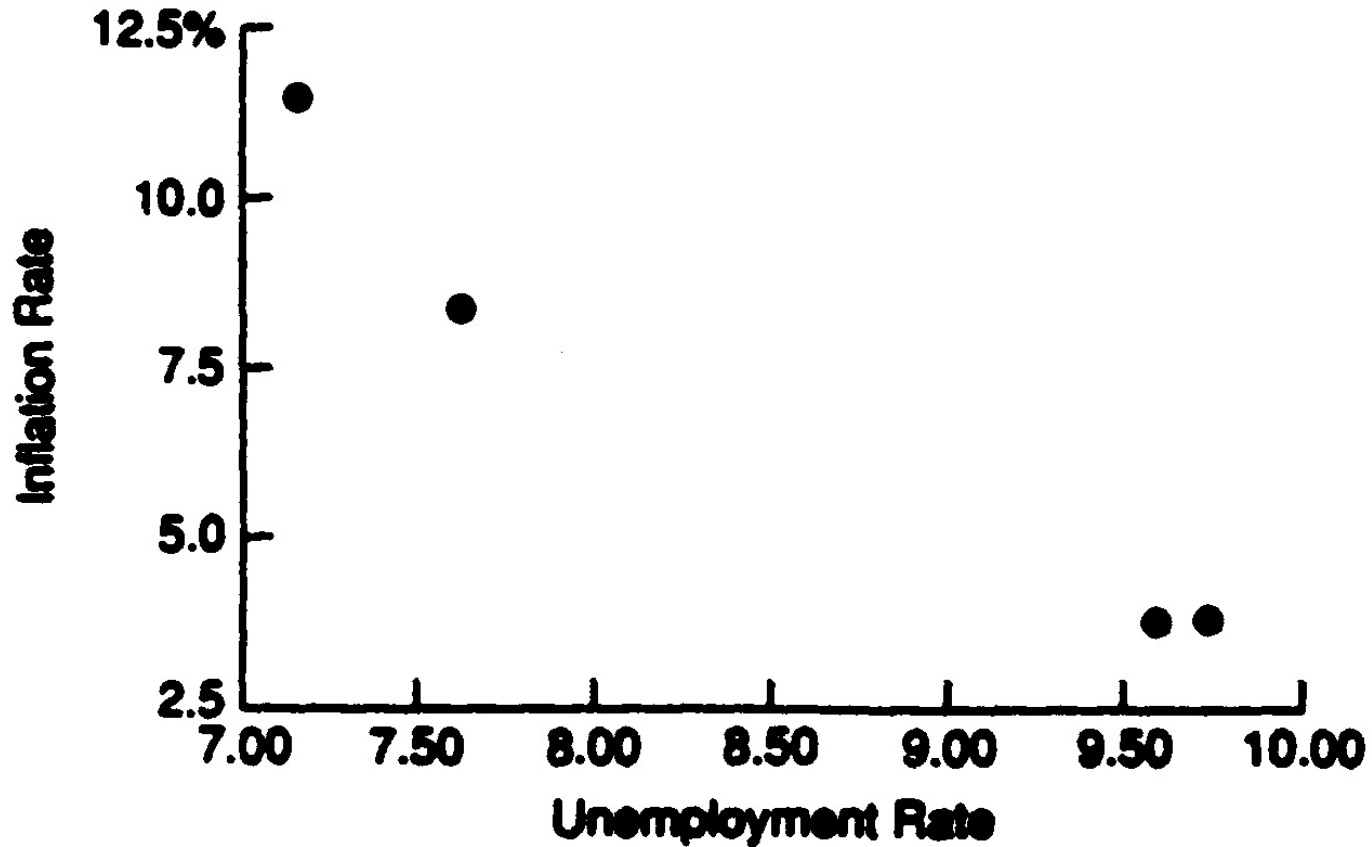


Phillips Curve



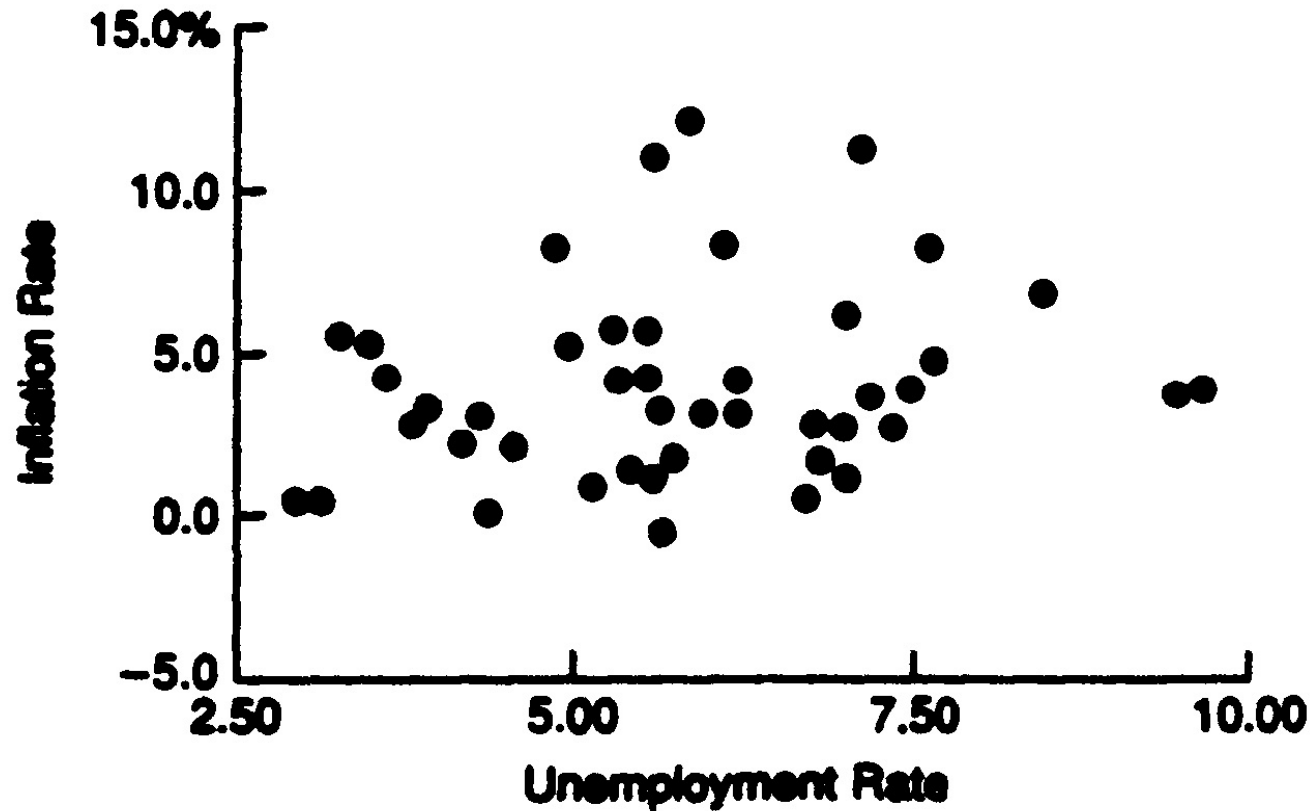
Phillips Curve

(e) 1980–1983



Phillips Curve

(f) All Years, 1950-1994





Phillips Curve

- No stable relationship in the long run
- Negative relationship between inflation and unemployment in the short run
- Our Story: It is only **unexpected** inflation that matters.
 - If inflation is expected, people will adjust and money are neutral
 - 1960's: theories failed: didn't take expectations into account



The Model

- People do not have perfect information about prices but observe nominal wages
 - can confuse growth in nominal wages with growth in real wages



The Model

- Preferences

$$U(c, l) = 2\sqrt{c} - l$$

- Budget Constraint

$$P^e c = Wl$$

- P^e : expected price level
- W : nominal wage



The Model

- Solution

$$L^s = \frac{W}{P^e}$$

- True price level: P
- Real wage: $w = W/P$
- Hence labor supply is

$$L^s = \frac{W}{P^e} = \frac{P}{P^e} \frac{W}{P} = \frac{P}{P^e} w$$



The Model

- Unemployment:

$$u = 1 - L^s = 1 - \frac{P}{P^e} w$$

- Logs:

$$\ln(1 - u) = \ln(P) - \ln(P^e) + \ln(w)$$

$$u = \pi^e - \pi + \varepsilon$$

- where $\varepsilon = -\ln(w)$



Policy Implications

- Only unexpected monetary policy can reduce unemployment or output
 - rational expectations: any *systematic* component of monetary policy has no effect
- The cost of anti-inflationary policies:
 - Depends on whether it is expected or not



Evaluation

- 1960's-1970's:
 - Government tried to increase output by increasing inflation
 - Inflation expectations adjusted over time
 - Phillips curve shifted upwards



Monetary Policy

- Phillips Curve

$$u = u^* + \gamma(\pi^e - \pi) + \varepsilon$$

- How does (should) central bank choose inflation?

- Objective function:

$$V = -u^2 - \pi^2$$

- Fed Objectives: "...maximum employment, stable prices..."



Monetary Policy

Fixed expectations

- Suppose that expectations are exogenously given by π^e
- Fed's problem

$$\max_{\pi} = -[u^* + \gamma(\pi^e - \pi)]^2 - \pi^2$$

- Solution:

$$\pi^*(\pi^e) = \frac{\gamma}{1 + \gamma^2} u^* + \frac{\gamma^2}{1 + \gamma^2} \pi^e$$



Inflationary Expectations

- Two alternatives of how inflation expectations are formed:
 1. Central bank cannot commit to a particular target
 2. Central bank can commit
- Main result:
 - The equilibrium inflation are very different!
 - Equilibrium unemployment is the same



Nixon vs Burns (1972)

- I know there's the myth of the autonomous Fed... [short laugh] and when you go up for confirmation some Senator may ask you about your friendship with the President. Appearances are going to be important.....
 - Richard Nixon to Arthur Burns



Nixon vs Burns (1972)

Table 2
Growth Rates for M1, M2, and Real GDP

<i>Year</i>	<i>M1 Growth</i>	<i>M2 Growth</i>	<i>Real GDP growth rate</i>
1970	4.51%	7.36%	2.8%
1971	6.77%	13.38%	3.5%
1972	7.56% ^a	11.65% ^a	7.7%

^aGrowth rate for the first half of the year at an annualized rate.

Sources: Federal Reserve of St. Louis website at <http://research.stlouisfed.org/fred2/> and author's calculations.

Table 3
Consumer Price Index Inflation Rate

<i>Year</i>	<i>Inflation rate</i>
1969	6.2%
1970	5.3%
1971	3.3% (wage and price controls initiated in August 1971)
1972	3.6% (wage and price controls in effect for full year)
1973	9.6% (wage and price controls removed in stages during 1973)
1974	11.8%
1975	6.7%



Inflationary Expectations

Central Bank Cannot Commit

- After inflationary expectations are set, the central bank can pick any inflation
 - No commitment to a pre-specified target
- In equilibrium, $\pi^e = \pi$

$$\pi^* = \gamma u^*$$

$$u = u^*$$

- High Inflation



Inflationary Expectations

Central Bank Can Commit

- The central bank can commit to a pre-specified target
- The central bank chooses

$$\pi^* = 0$$

$$u = u^*$$

- Zero Inflation, the same unemployment!



Inflationary Expectations

- Lessons Learned

- Commitment to low inflation is key in achieving it
 - If not, temptation to increase inflation is expected, and preempted
- More generally, successful disinflations need to set inflation expectations low
 - Successful example: German Hyperinflation
 - Unsuccessful example: USA 1979-1982