Econ 201: Introduction to Economic Analysis

December 2 Lecture: Unemployment and Inflation

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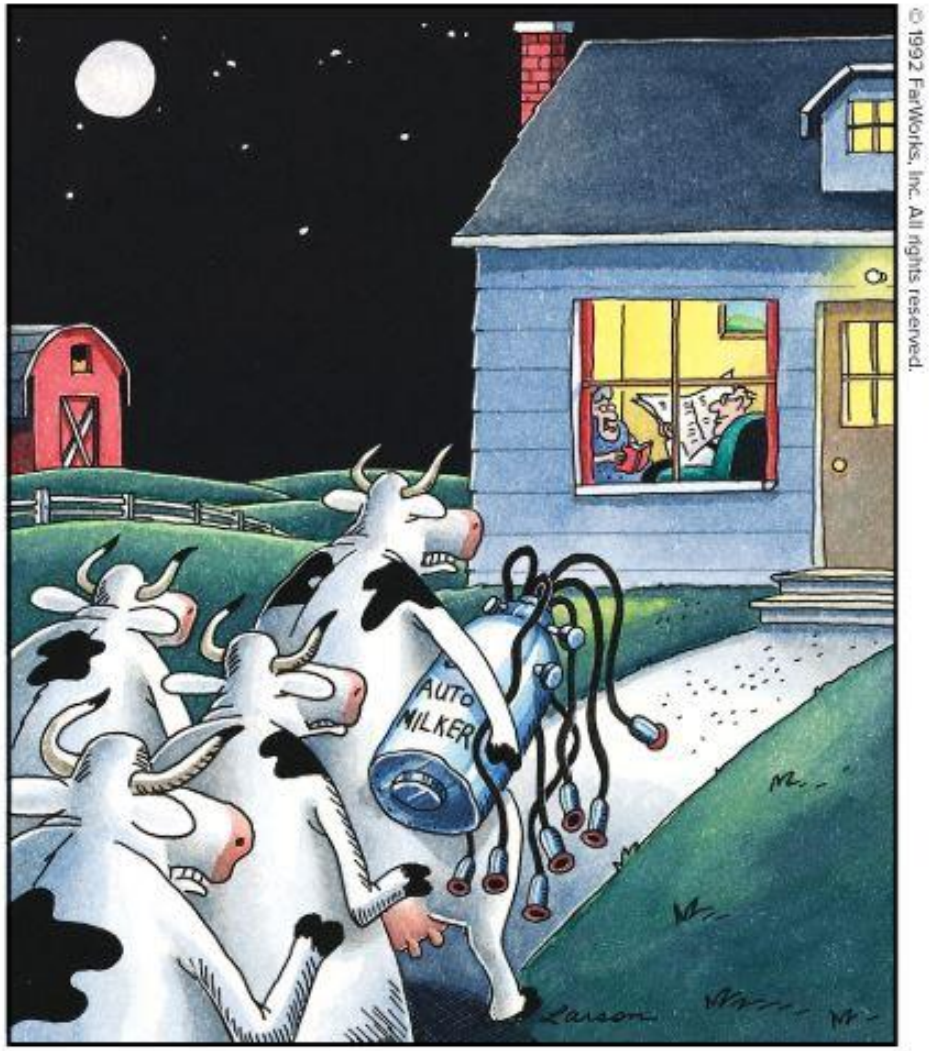
Daily dose of The Far Side

www.thefarside.com



That night, their revenge was meted out on both Farmer MacDougal and his wife. The next day, police investigators found a scene that they could describe only as "grisly, yet strangely hilarious."

Preview of this class session

- The Phillips curve relationship between unemployment and inflation was the issue over which modern macroeconomics emerged in the 1970s
- Phillips's empirical analysis suggested a stable negative relationship: Policymakers could "buy" lower unemployment at the expense of higher inflation
- Empirical relationship became unstable in 1970s
- Original explanation confused changes in nominal and real wages
- Modern theory argues that lower unemployment implies not higher inflation but increasing inflation
- Lack of inflation with very low unemployment since 2010 is a new puzzle

Phillips's original curves: 1861-1913

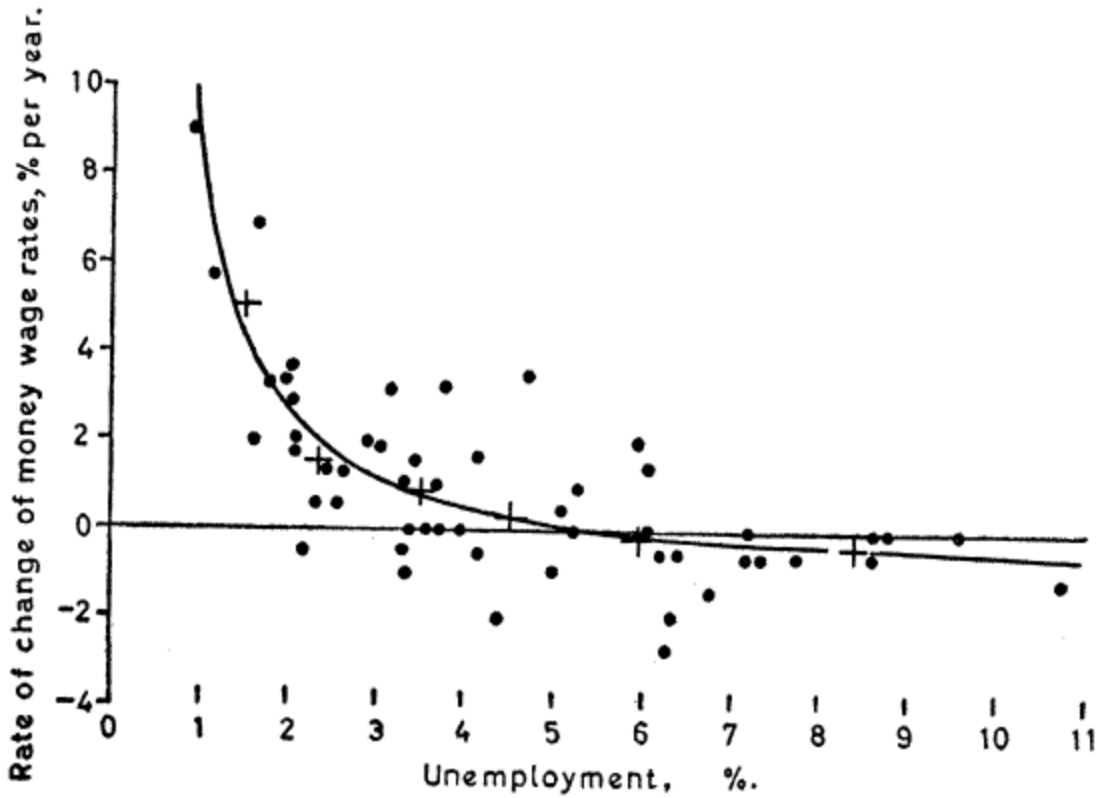


Fig.1. 1861 – 1913

Phillips's original curves: 1913-48

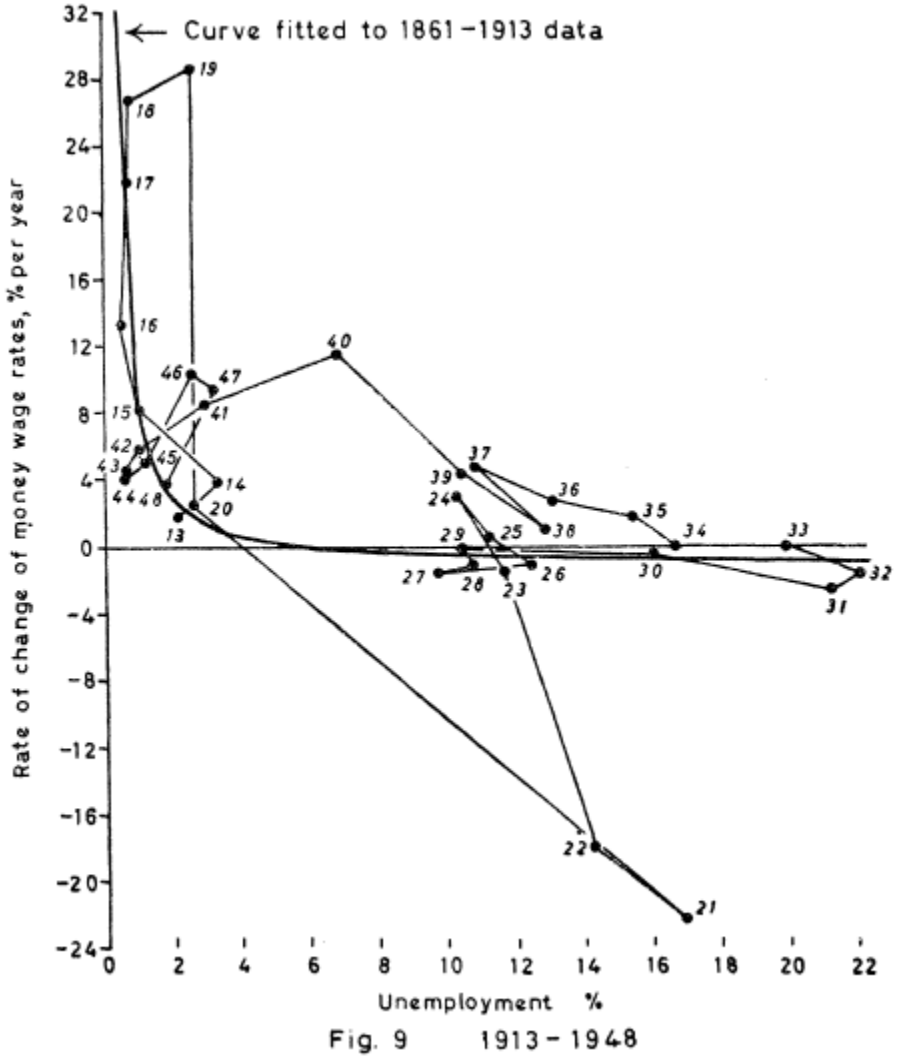
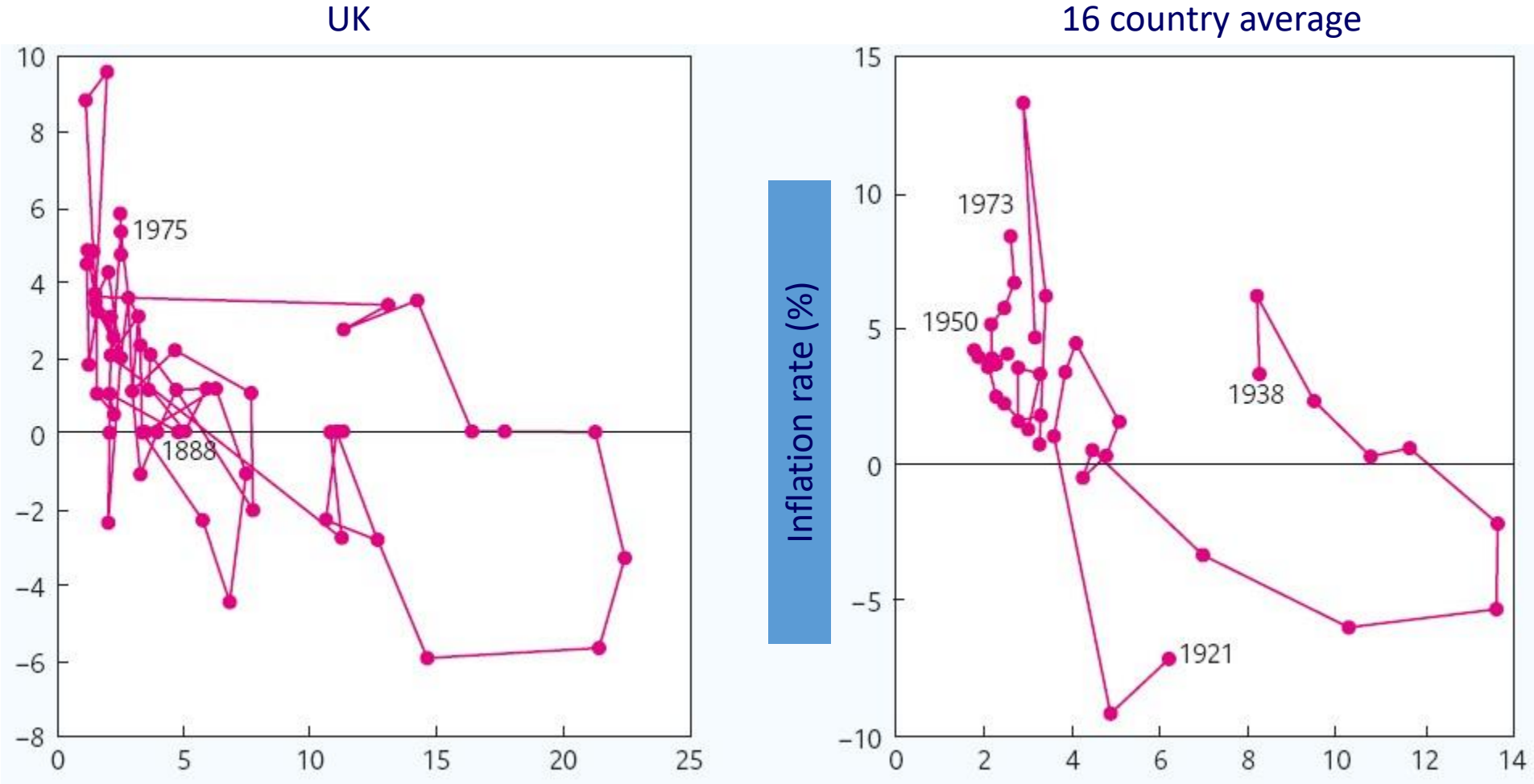


Fig. 9 1913 – 1948

Figure 12.04

Phillips curves: The UK, 1888-1975 and a 16-country average, 1921-1973*



*Excluding 1939-1949

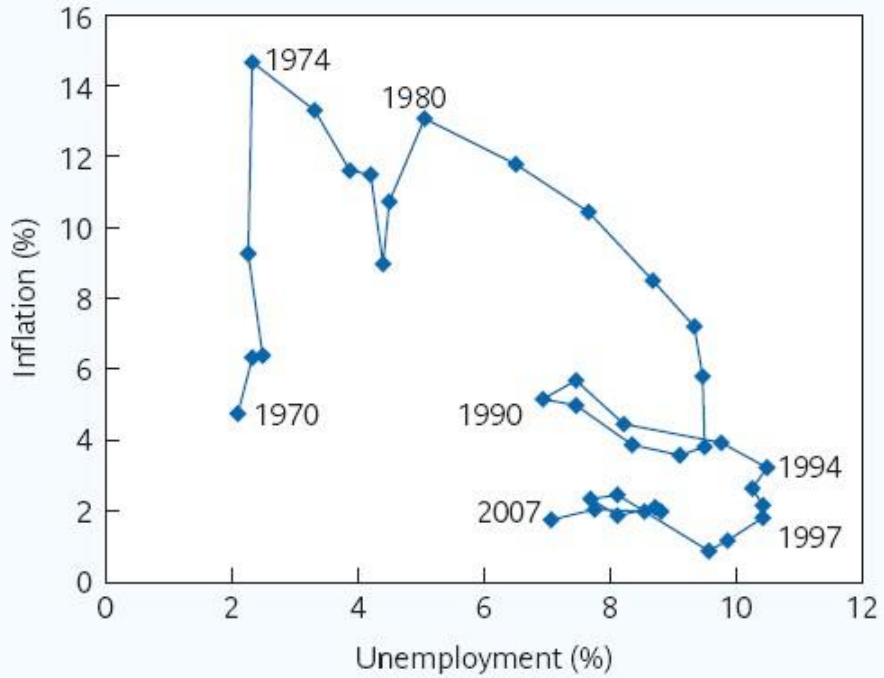
Traditional explanation for tradeoff

- Low unemployment = tight labor market → wages increase
- Rising wages → increase in marginal cost → price inflation
- Similarly, high unemployment is a loose labor market, leading to wage declines and price drops
- Milton Friedman (1968) argued that this confused inflation in nominal wages/prices with real wages and relative prices
  - He predicted that the relationship would not be stable
  - https://www-jstor-org.proxy.library.reed.edu/stable/1831652
- At around the same time, Edmund Phelps edited a conference volume with studies coming to the same conclusion and beginning to examine the underlying microeconomics
  - Reed Library call number: **HB301 .M57**

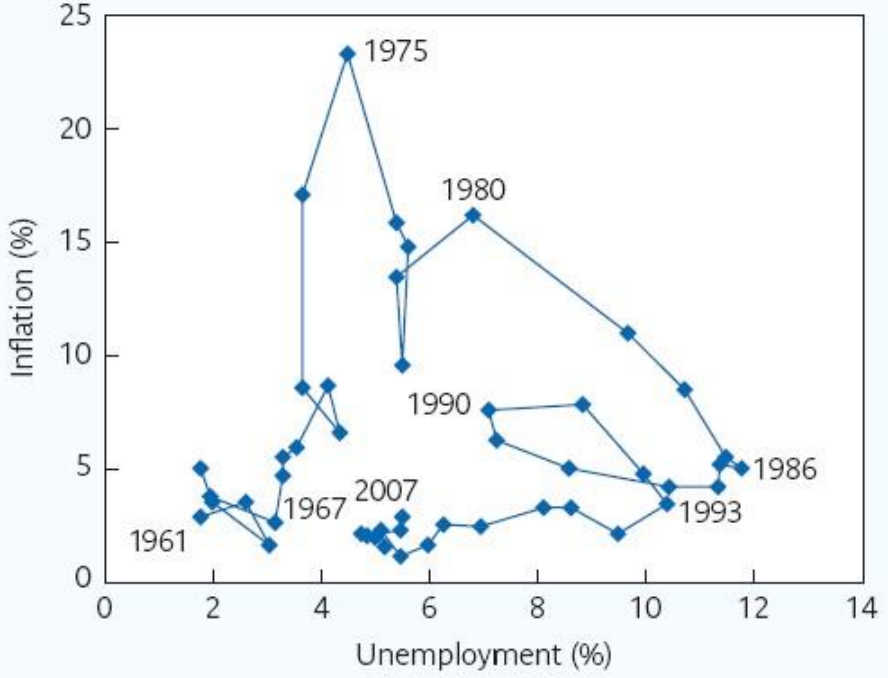
Figure 12.09

Phillips curves: Recent experience
Euroland and the UK

Euroland (1970-2007)



UK (1960-2007)



Source: OECD

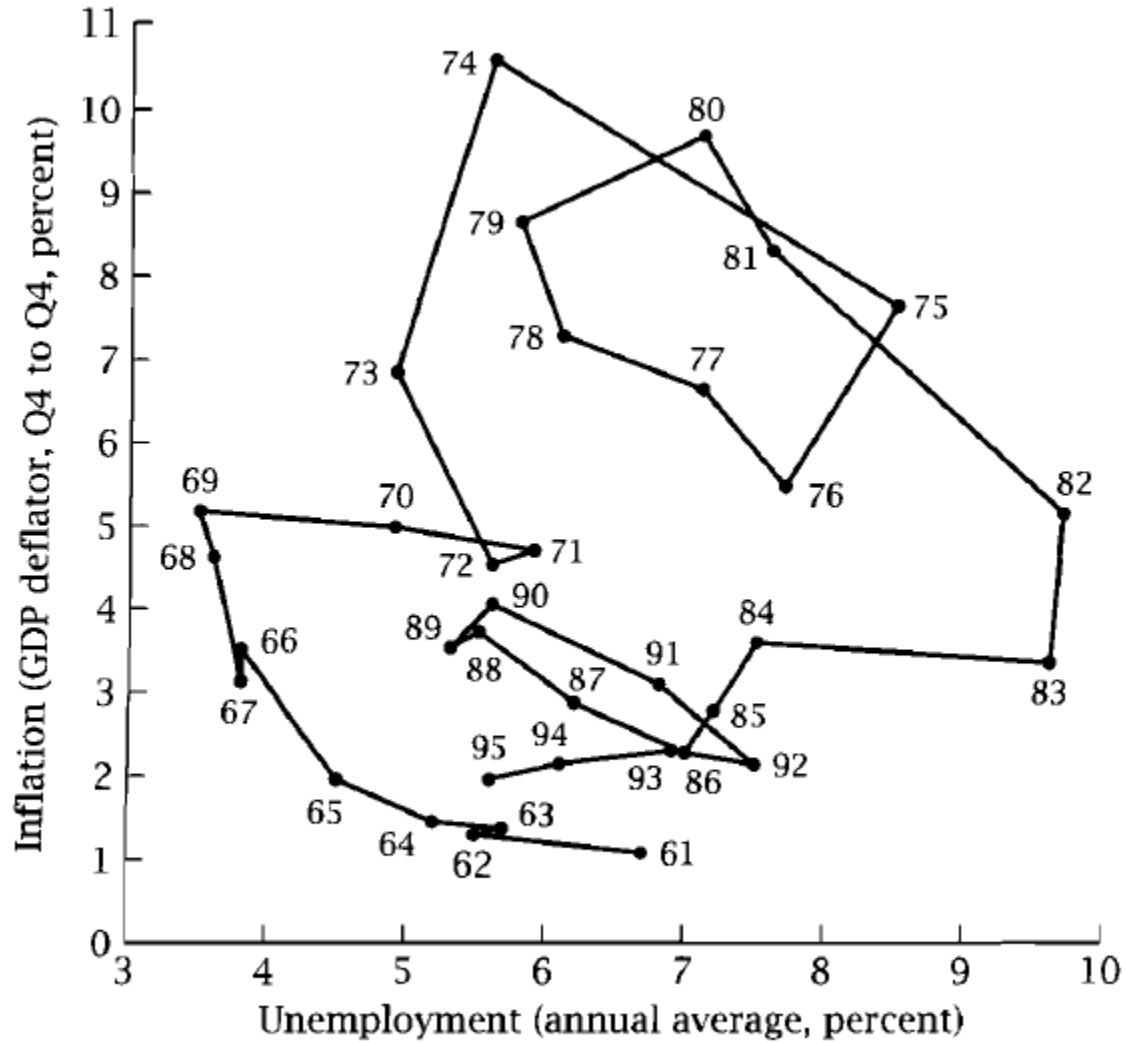


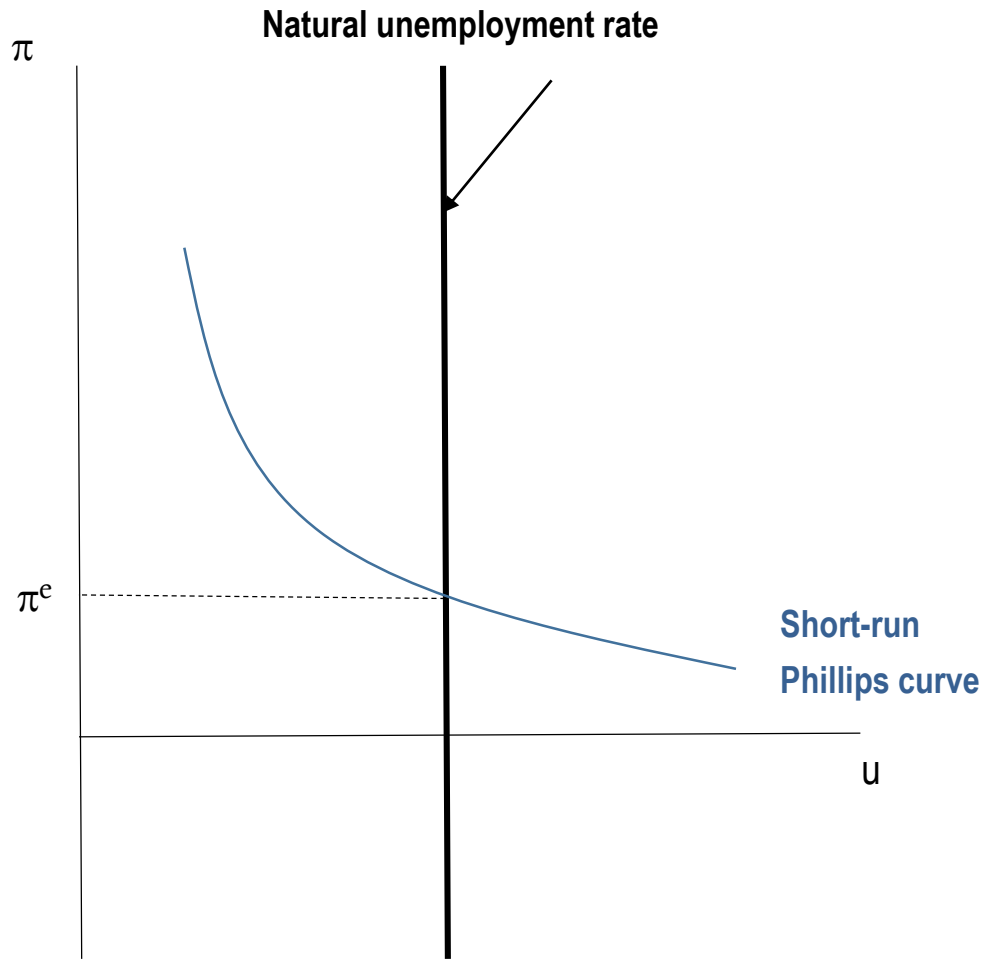
FIGURE 5.16 Unemployment and inflation in the United States, 1961–1995

What explains the swirls?

- Low unemployment = tight labor market → **real wage** increases
  - To increase real wages, firms/workers bargain for wage increase larger than they expect prices to increase
  - This raises marginal costs more than expected, so firms raise price more than they expected to raise them
  - The change in wages and prices is **relative to expected inflation**
- High unemployment → real wage falls
  - Nominal wages and price rise **less than expected**
- Unemployment at natural rate = balanced labor market → real wage can be stable
  - Wages and prices rise at expected rate

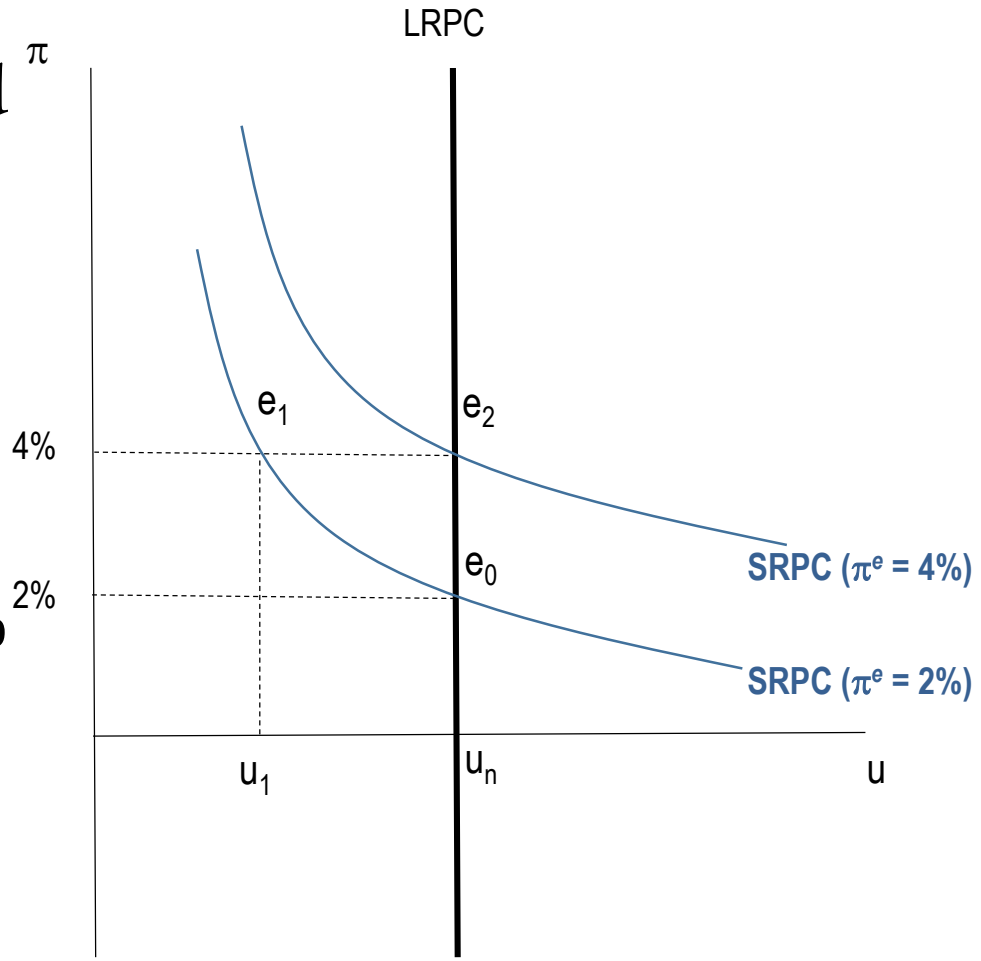
Modern theory of Phillips curve

- Unemployment rate ~ inflation relative to expected
  - $u < u_n \rightarrow \pi > \pi^e$
  - $u > u_n \rightarrow \pi < \pi^e$
  - $u = u_n \rightarrow \pi = \pi^e$
- Position of short-run Phillips curve changes when:
  - Expected inflation changes (↑ or ↓)
  - Natural unemployment rate changes (← or →)



Short run and long run

- Initial equilibrium: e_0 with 2% actual and expected inflation
- AD increases: lowers unemployment to u_1
  - Inflation increases to 4% at e_1 along SRPC with π^e at 2%
- Eventually, expected inflation rises to 4%
  - SRPC shifts up, economy goes to e_2
- Long-run Phillips curve is vertical: **no tradeoff** once expectations adjust



Summary of modern theory

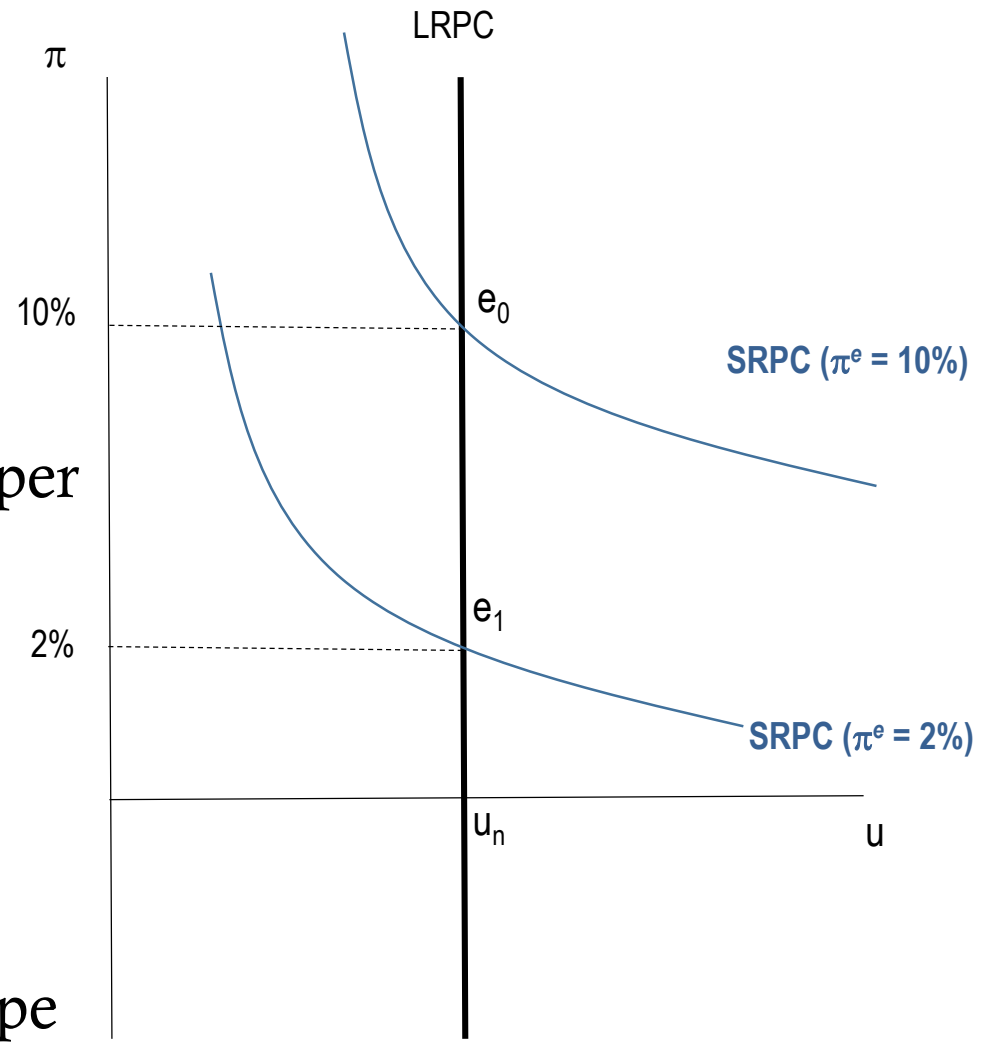
- Short-run Phillips curve passes through point where
  - Unemployment rate = natural rate
  - Inflation rate = expected rate
- Short-run tradeoff for given natural rate and expected inflation
- Change in expected inflation rate shifts SRPC up or down
- Change in natural unemployment rate shifts SRPC left or right
- No long-run tradeoff between inflation and unemployment once expectations catch up: Long-run Phillips curve is vertical at natural rate

Can modern theory explain Phillips?

- Phillips's evidence suggested a stable relationship over a century in Britain
- Can the modern theory explain why the Phillips curve would remain stable for so long?
- Stability requires two things:
  - **Stable inflationary expectations**
  - **Stable natural rate of unemployment**
- Britain was on the **gold standard**, so the value of pound was tied to gold: Expected inflation was zero
- No particular reason to think that natural rate changed

Disinflation

- How can we lower inflation from high-inflation equilibrium?
  - Reducing AD causes high short-run unemployment
  - "Sacrifice ratio" is amount of lost output per point of lowered inflation
- Can we lower inflation expectations?
  - WIN buttons?
  - Credible Fed announcements?
- Successes:
  - Credible monetary reforms in 1920s Europe
  - Argentina's "currency board" in 1990s



Explaining the swirls

- 1961 – 69: Stimulative policies
- 1969 – 72: Expectations catch up
- 1972 – 74: Oil shock raises inflation
- 1974 – 82: High inflation built into expectations
- 1983 – 85: Volcker disinflation reduces expected inflation
- 1985 – 95: Fairly stable, but quite flat, Phillips curve

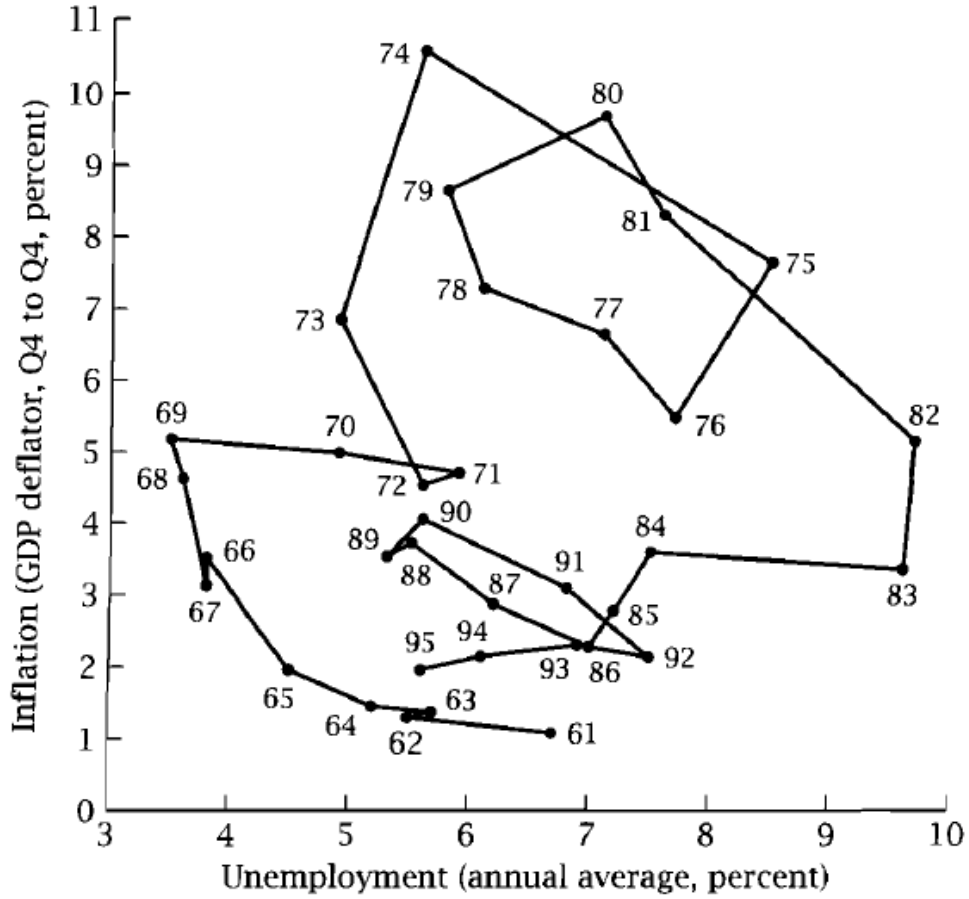
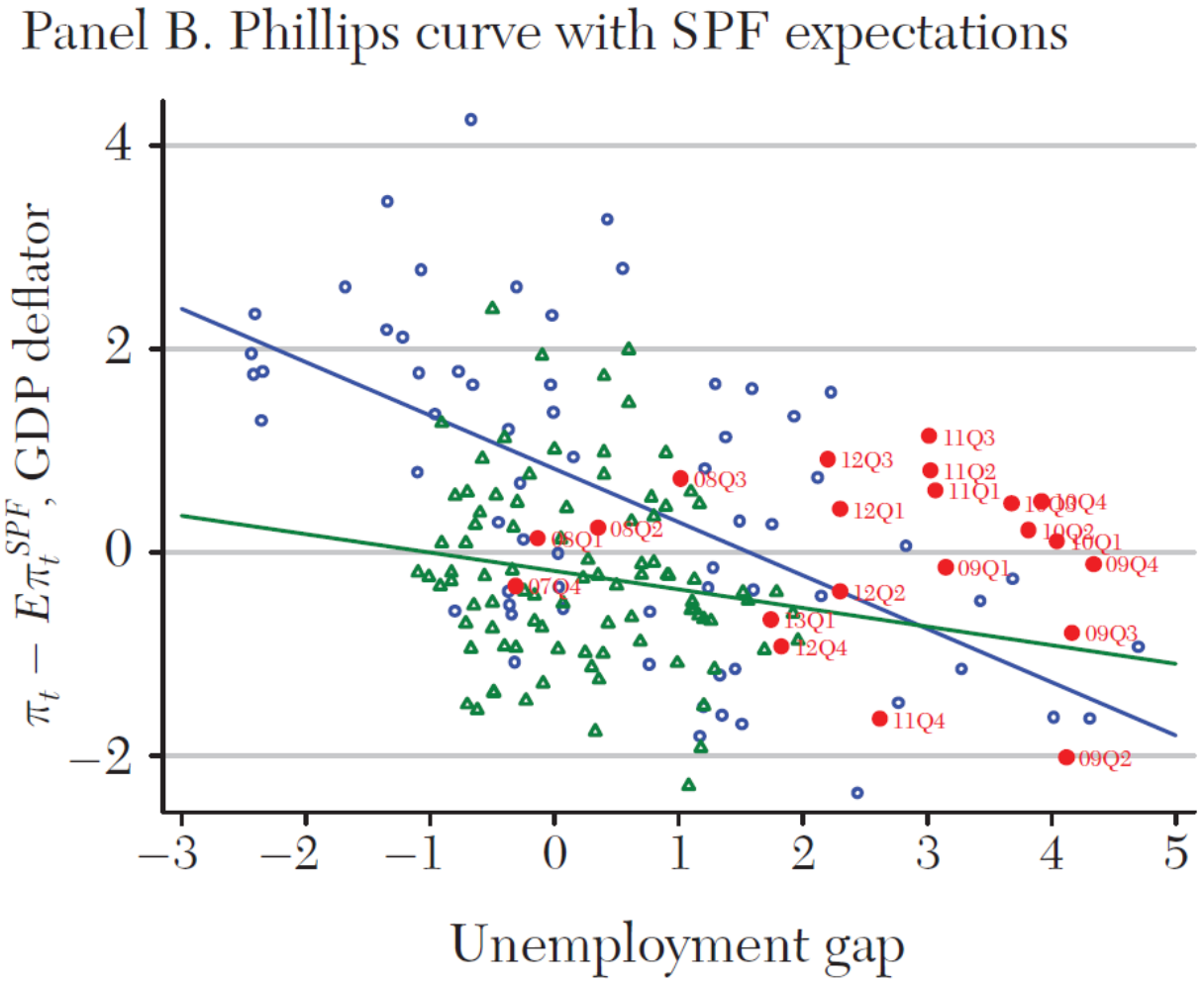


FIGURE 5.16 Unemployment and inflation in the United States, 1961–1995

Recent experience?

- Axes adjusted for natural rate and expected inflation
  - Blue points: 1960 – 84
  - Green: 1985 – 2007
  - Red: 2007 – 13
  - 2013 – 19: Low unemployment without inflation
- Something has changed!
- Phillips curve seems very flat recently
- Has the tradeoff changed?



Coibion, Olivier, Yuriy Gorodnichenko, and Rupal Kamdar. 2018. "The Formation of Expectations, Inflation, and the Phillips Curve." *Journal of Economic Literature* 56 (4):1447-91.

Review

- Unemployment and inflation are often inversely related in the short run
  - Low unemployment tends to lead to wage and price increases
- Modern theory of Phillips curve clarifies that this is due to changes in real wages and relative prices
- There is no tradeoff in the long run: Unemployment returns to the natural rate at a rate of inflation determined by aggregate-demand growth (monetary growth)
- Recent shifts in the relationship are broadly consistent with the modern theory, though it seems much flatter in the last decade

Daily diversion

Economist on dangers of extrapolation:

"If you are from Chicago and wage to scare people about the recently rising murder rate, start with 1988, and fairly safe year in Chicago. Then draw a line through 1990, when the windy city had a record number of murders. That two-year extrapolation will show that within just 4,000 years everybody in Chicago will be murdered every year."

December 21, 1991 – January 3, 1992, p. 25

https://link.gale.com/apps/doc/A11699399/AONE?u=s8888903&sid=AONE&xid=ab444814

What comes next?

- On Friday, we will examine the causes behind and the effects of the financial crisis of 2008 and the ensuing Great Recession
- The accompanying case study discusses the details of the extraordinary monetary and fiscal policy measures that were implemented