

Lecture 12 Inflation, Unemployment, and Federal Reserve Policy

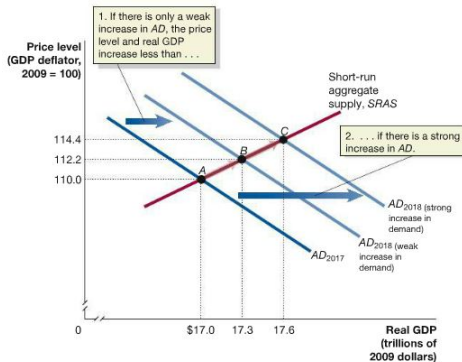
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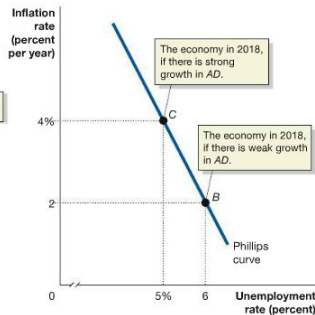
E3120 Intermediate Macroeconomics

December 1, 2021

AD-AS Model Revisited



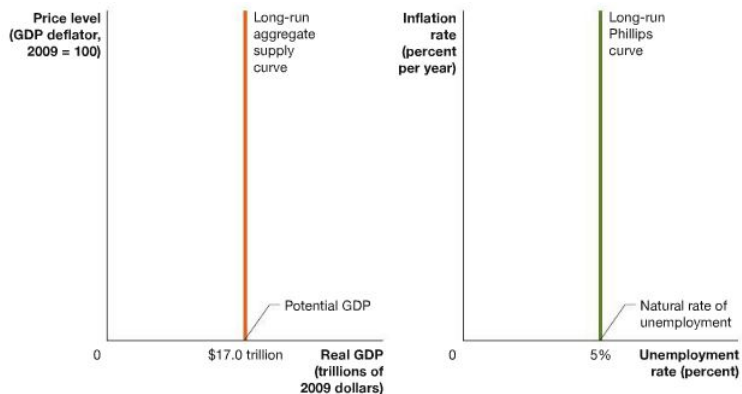
(a) The effects of an increase in aggregate demand



(b) The Phillips curve

- ▶ Short-run inverse relation b/w unemployment & inflation
- ▶ Known as Phillips curve, after A. W. Phillips
- ▶ Structural? (invariant to policy change), not in long-run

Long-Run Phillips Curve



- ▶ Output = potential level, unemployment = natural rate
- ▶ No trade-off b/w unemployment & inflation

Friedman and Phelps' Argument

Real purchasing power

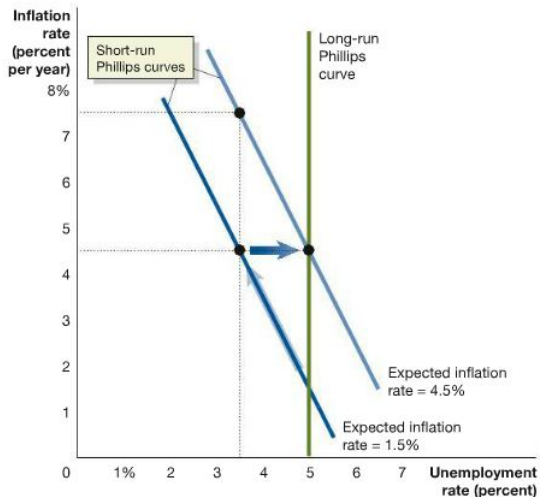
$$\text{real wage } (w) = \frac{\text{nominal wage } (W)}{\text{price level } (P)} \times 100$$

- ▶ Role of expectations of future inflation (π^e)
 - ▶ $\pi > \pi^e \Rightarrow w < w^e \Rightarrow$ firms hire more ($u \downarrow$)
 - ▶ $\pi < \pi^e \Rightarrow w > w^e \Rightarrow$ firms hire less ($u \uparrow$)
- ▶ Short-run trade-off comes from *unanticipated* inflation

The Road Ahead...

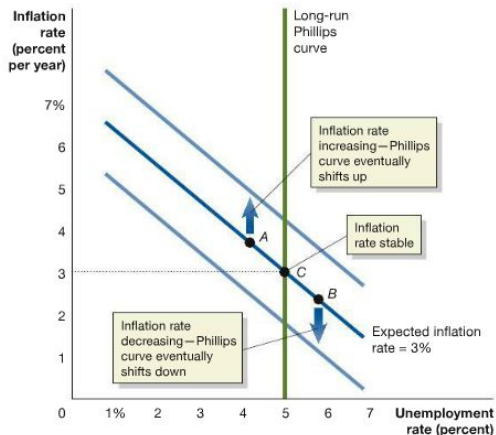
- ▶ From short-run to long-run
- ▶ NAIRU principle
- ▶ Expectations and monetary policy
- ▶ Fed policy from 1970s to present

From Short-Run to Long-Run



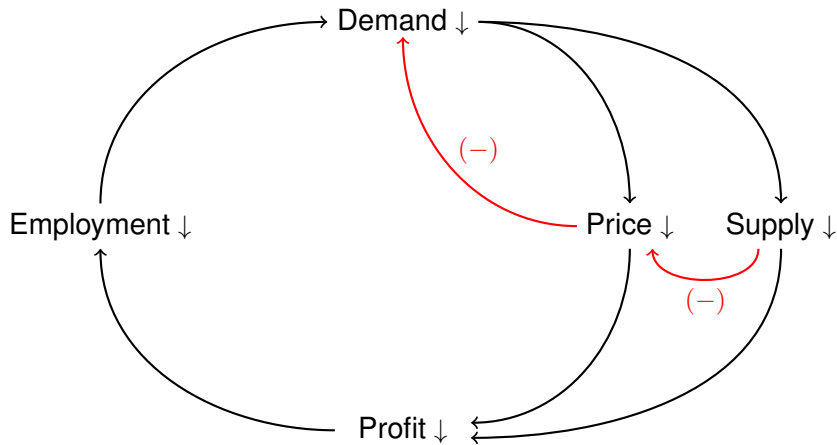
- ▶ Unexpected inflation ($\pi > \pi^e$) \Rightarrow movement along curve
- ▶ Eventually $\pi = \pi^e$, $W \uparrow$, $w \uparrow \Rightarrow$ shift in curve

NAIRU



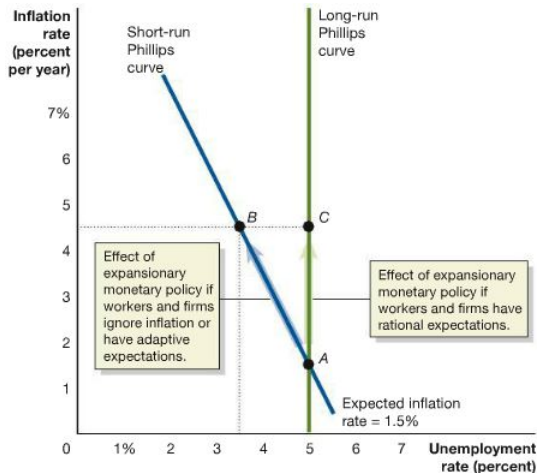
- ▶ u_n : nonaccelerating inflation rate of unemployment (NAIRU)
- ▶ NAIRU principle: $u > (<) u_n \Rightarrow \pi \downarrow (\uparrow)$, $u = u_n \Rightarrow$ stable π
- ▶ See Hall (2011), “The Long Slump”, AER

Deflationary Spiral



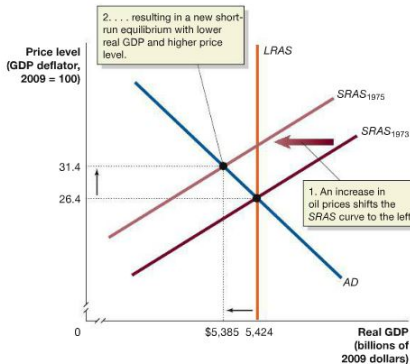
- Employment ↓ + price ↓ + profit ↓ \Rightarrow hoard money

Expectations and Monetary Policy

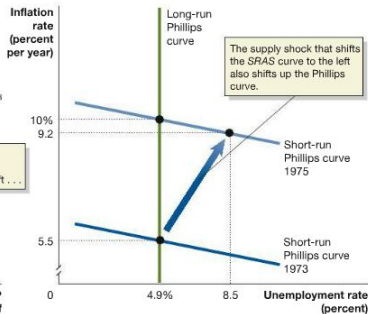


- ▶ Adaptive expectations: short-run trade-off b/w u and π
- ▶ Rational expectations: vertical short-run Phillips curve

Negative Supply Shock



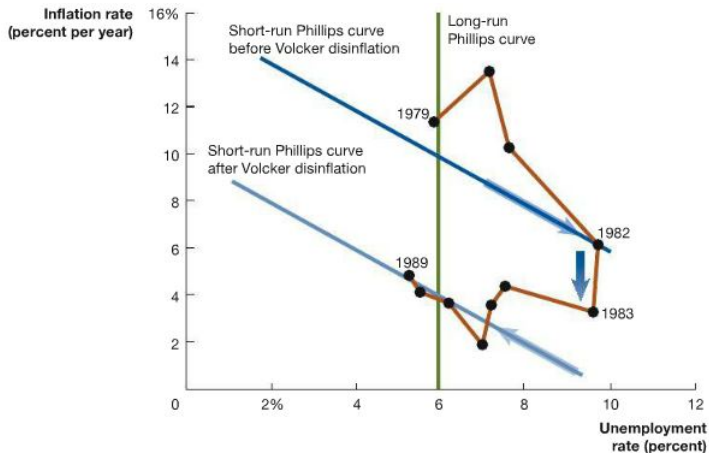
(a) Aggregate demand and aggregate supply



(b) Phillips curve

- ▶ In 1974, oil price $\uparrow \Rightarrow \pi \uparrow \Rightarrow \pi^e \uparrow \Rightarrow$ Phillips curve \uparrow
- ▶ Fed monetary expansion $\Rightarrow u \downarrow, \pi \uparrow$

Volcker Disinflation



- ▶ Fed monetary contraction $\Rightarrow \pi \downarrow \Rightarrow \pi^e \downarrow \Rightarrow$ Phillips curve \downarrow
- ▶ Not rational expectations? Fed credibility matters

Inflation Record of Fed Chairs

Federal Reserve Chairman	Term	Average Annual Inflation Rate during Term
William McChesney Martin	April 1951 to January 1970	2.2%
Arthur Burns	February 1970 to March 1978	6.5
G. William Miller	March 1978 to August 1979	9.1
Paul Volcker	August 1979 to August 1987	6.2
Alan Greenspan	August 1987 to January 2006	3.1
Ben Bernanke	January 2006 to January 2014	2.2
Janet Yellen	January 2014 to October 2015*	0.9

* The value for Janet Yellen is computed for just these initial months of her term.

Sources: U.S. Bureau of Labor Statistics; and Federal Reserve Board of Governors.

- ▶ Less emphasis on money supply
- ▶ More emphasis on credibility

Readings & Exercises

- ▶ Readings

- ▶ HO: chapter 17
- ▶ BJ: lecture 7 (supplementary)

- ▶ Exercises

- ▶ HO: problem 1.5, 2.4, 2.7, D17.1