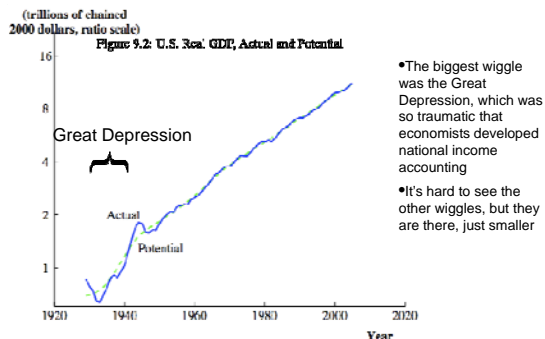


ECON 206
MACROECONOMIC ANALYSIS

Roumen Vesselinov
Chapter # 9

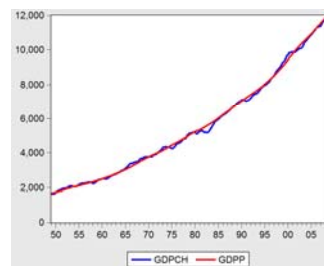
There are *wiggles* and a trend in GDP



An Overview of the
Short-Run Model

Chapter 9

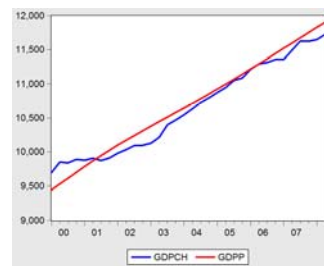
Real GDP, Actual and Potential



Our objectives today

- The growth chapters told us about economic well-being in the long run, but in fact, there are many interesting short-run dynamics as well
- The **gap** between current GDP and *potential* GDP is a key measure of performance
- Fluctuations — especially when the gap is negative — can be **costly**: GDP and employment both fall
- But at least inflation typically declines when the gap is negative

Real GDP, Actual and Potential



To help tell stories, we break down GDP into long-run and short-run components

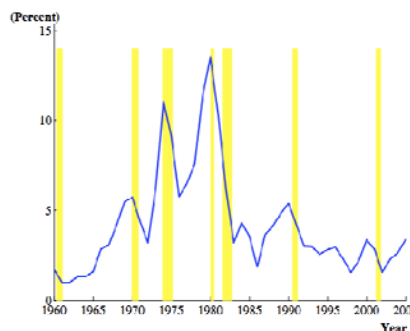
$$\text{Current output we observe } Y_t = \text{Long-run trend } \bar{Y}_t + \text{short-run fluctuation } \tilde{Y}_t$$

But we're going to think of \tilde{Y}_t in terms of *percentage deviations* from \bar{Y}_t rather than levels:

$$\tilde{Y}_t = \frac{Y_t - \bar{Y}_t}{\bar{Y}_t}$$

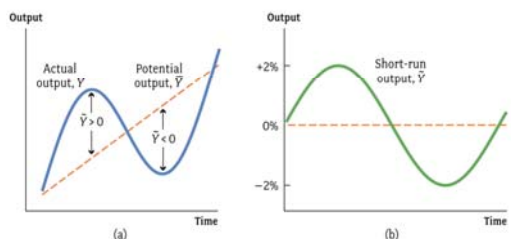
In words: the short-run fluctuation term pulls us X% above or below trend. Why? The size of fluctuations over time fits this pattern

What else fluctuates mightily? Inflation

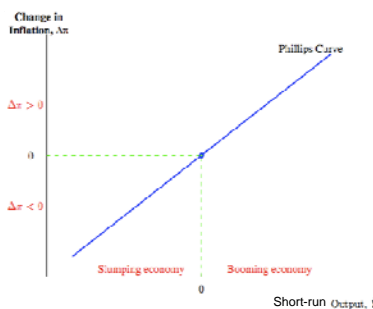


- This graph shows the level of inflation over time
- During expansions (the white spaces), inflation has risen
- During recessions (the yellow spaces), inflation has fallen
- Based on this, we see that there is at least a temporal connection — a simultaneity — between inflation and output

Economic Fluctuations and Short-Run Output

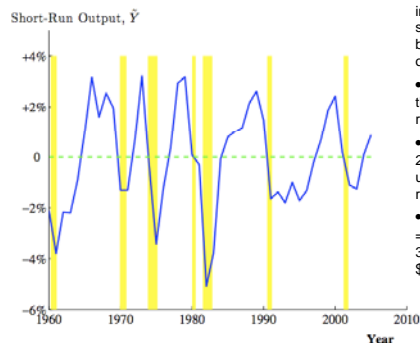


In fact, this is more than just an accidental connection



- The relationship between short-run output and inflation is called the **Phillips Curve**
- It is an upward sloping line; if you have output above trend, then you also have an *increase* in inflation
- This is one of the key elements of our short-run model, along with the assumption that policy can change output

Percentage deviations from trend have swung mightily and are linked to recessions

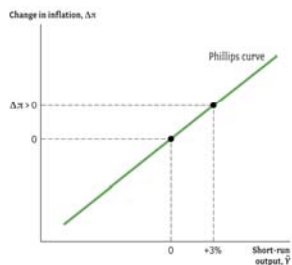


- The yellow bars indicate periods specified as recessions by the National Bureau of Economic Research
- What kind of **costs** do these swings represent?
- A recession might be a 2-year swing that loses us about 6% of GDP relative to potential
- GDP \$12 trillion x 6% = \$720 billion, then ÷ 300 million people => \$2,400 per person

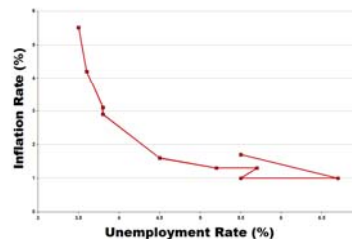
Why would inflation rise when output is above trend?

- Think about how output gets above trend
- Suppose there is a shock to demand: it's the holidays, and everybody wants a particular toy "X"
- Prices of those goods, at least on eBay, skyrocket
- People have to work overtime to produce extra "X", and they make overtime wages

“Modern” Phillips Curve



Classical Phillips Curve in the U.S in the 1960's



“Modern” Phillips Curve, 1960-2005



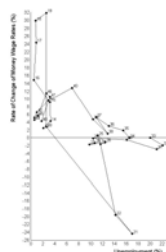
Okun's Law

- Relationship between Output and Unemployment

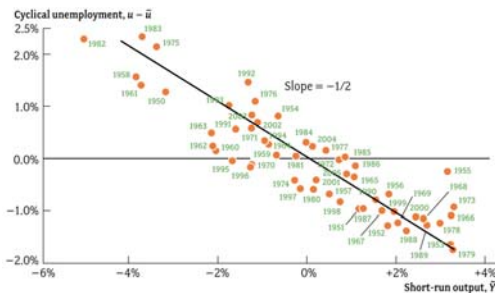
$$u - \bar{u} = -\frac{1}{2} \tilde{y}_t$$

- u is the unemployment rate
- \bar{u} is the “natural” rate of unemployment
- \tilde{y}_t is the short-run output

Original Phillips Curve Rate of Change of Wages against Unemployment, United Kingdom 1913–1948 Phillips (1958)



Okun's Law, 1950-2005



The next several chapters:

- The “IS Curve” (“eye-ess,” not “izzz”)
 - Output in the short run depends negatively on the real interest rate
- Monetary Policy
 - Targets the nominal interest rate
- We'll combine these with the Phillips Curve to produce the full Short-Run Model