OUTLINE — November 28, 2018

- Phillips Curve: shifts & puzzle
- The Fed & Monetary Policy
  - Monetary Policy: Adjusting interest rates
  - Taylor rule
  - Inflation hawks and doves

Comprehensive Essay Question available on course website

Essay due via bCourses Wed Dec. 5, 1:00 pm

Last day of class & evals, Monday Dec 3

Olney (condensed) review, Wednesday Dec 5, usual time

Phillips Curve

What makes Phillips Curve shift?

1. Change in inflationary expectations
2. Cost shocks (also called "supply shocks")
3. Change in labor productivity growth rate

Stable Inflationary Expectations

Oil price spikes (& drops, too)

Productivity Growth Fluctuates

Interpreting Fed-speak

Question: Interpret the Fed statement from Sept 2009:

"With substantial resource slack likely to continue to dampen cost pressures and with longer-term inflation expectations stable, the Committee expects that inflation will remain subdued for some time."

Interpreting Fed-speak

Question: Interpret the Fed statement from Oct 2015:

"Inflation is anticipated to remain near its recent low level in the near term but the Committee expects inflation to rise gradually toward 2 percent over the medium term as the labor market improves further and the transitory effects of declines in energy and import prices dissipate."

Most recent statement (Nov 8 2018)

Information received since the Federal Open Market Committee met in September indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has declined. Household spending has continued to grow strongly, while growth of business fixed investment has moderated from its rapid pace earlier in the year. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

Monetary Policy & Dual Mandate

- Fed (usually) has one tool: interest rates
  - *Why "usually"?* Because once FFR hit the ZLB, Fed did turn to Quantitative Easing. But that was unusual.
- Dual mandate: employment & inflation
- Fight Inflation?
  - Fed raises interest rates
- Fight unemployment?
  - Fed lowers interest rates

Fighting unemployment & inflation

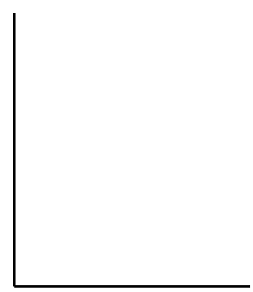
When the fight is over . . .

- Inflation & GDP growth ok now? Then Fed gradually returns interest rates to "neutral" level
  - Called "normalization" … & that's what Fed started in Dec. 2015
- Important to keep *counterfactual* in mind!!!
  - Higher interest rates do not necessarily cause recession
  - But higher interest rates *ceteris paribus* do cause slower growth

Some fights are straightforward

- Inflation up?

  Fed undertakes *contractionary* monetary policy
  - Raises interest rates



- Net effect?
  - unemployment
  - inflation

Other fights also straightforward

- Unemployment up?

  Fed undertakes *expansionary* monetary policy
  - Lowers interest rates
- Net effect?
  - unemployment
  - inflation

Some fights are unpleasant (at best)

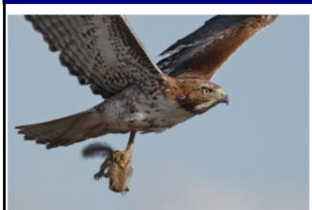
- ↑ inflationary expectations due to cost shock
- Fed fights back:

  ↑ interest rates
- Net effects?
  - Unemployment
  - Inflation
  - Fed typically does not "slay" inflation; just fights it

The Fed's Dual Mandate

- Fed reacts to inflation <u>and</u> unemployment
- Inflation hawk
- Inflation dove

Hawks & Doves

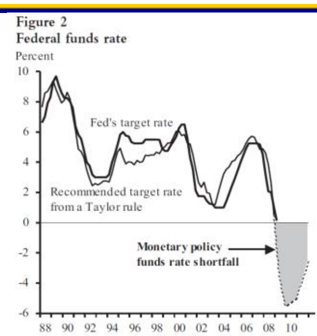


"Taylor Rule"

- Taylor Rule
  - An equation for FFR target that seems to (usually) fit the data reasonably well is the "Taylor Rule" equation
    - Estimated separately for different central banks
  - The equation says: The central bank (in U.S., the Fed) sets its interest rate target in reaction to inflation and unemployment (or growth rate of GDP)

$$\begin{aligned} &FFR\ Target \\ &= neutral\ FFR \\ &\quad + A * (actual - Fed's\ goal\ for\ inflation\ rate) \\ &\quad + B * (actual - Fed's\ goal\ for\ \%\ \Delta GDP) \\ &= neutral\ FFR \\ &\quad + A * (actual - Fed's\ goal\ for\ inflation\ rate) \\ &\quad - \beta * (actual - Fed's\ goal\ for\ unemployment\ rate) \end{aligned}$$

Taylor Rule & Actual FFR, pre-2008



Source: http://www.frbsf.org/economic-research/publications/economic-letter/2009/may/fed-monetary-policy-crisis/

Inflation Hawks And Doves

- Taylor Rule
  - Fed reacts to inflation and unemployment

$$\begin{aligned} &FFR\ Target \\ &= neutral\ FFR \\ &\quad + A * (actual - Fed's\ goal\ for\ inflation\ rate) \\ &\quad - \beta * (actual - Fed's\ goal\ for\ unemployment\ rate) \end{aligned}$$

Using the Taylor Rule

Question: Suppose the Taylor Rule is estimated as

FFR target = 4 + 1.5*(actual inflation – inflation goal)

– 1*(actual unemployment – unempl't goal)

And suppose further

inflation goal = 2 percent (use 2, not 0.02)

unemployment goal = 4 percent (use 4, not 0.04)

actual inflation = 1 percent

actual unemployment = 6 percent