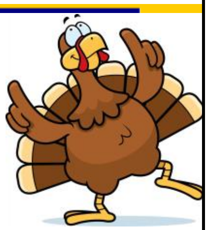
OUTLINE — November 19, 2018

- A few comments about the essay
- The Fed & Monetary Policy, cont.
  - Yield Curve
  - Zero Lower Bound
- Phillips Curve
  - Why a Tradeoff?
  - Shifts of Phillips Curve



PS4 due Mon/Tues Nov. 26/27
Other announcements sent by e-mail

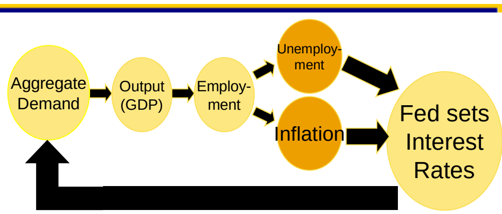
Comprehensive Essay due via bCourses 8 am Tues Dec 4

Fed Policy, 9/26/18 meeting

"In view of realized and expected labor market conditions and inflation, the Committee decided to raise the target range for the federal funds rate to 2 to 2.25 percent."

- How implement?
  - "The Board of Governors of the Federal Reserve System voted unanimously to raise the interest rate paid on required and excess reserve balances to 2.20 percent, effective September 27, 2018."
  - "Effective September 27, 2018, the Federal Open Market Committee directs the Desk to undertake open market operations as necessary to maintain the federal funds rate in a target range of 2 to 2-1/4 percent."
- Source: https://www.federalreserve.gov/monetarypolicy/fomccalendars.htm

Stepping Back



Read my 11/14 post on Piazza, which uses this graphic to organize all the material since October 15.

Interest Rates, 1965-2018

Long-term & Short-term Rates, 1

- Borrowing for investment spending is mostly *long-term* borrowing
  - 10-year, 20-year, 30-year loans
- Fed policy directly affects *short*-term interest rates
  - Rate paid on excess reserves (IOER)
  - Overnight rate (federal funds rate, FFR)
  - Treasury-bill rate (30-day, 90-day, 1-year)

Long-term & Short-term rates, 2

- What is connection between short-term (ST) and long-term (LT) interest rates?
  - LT rate = average of current & future expected ST rates + “term premium” + “risk premium”
- What determines “future expected ST rates”?
- “Forward guidance”
  - Fed policy starting 2004 to clearly state “this is what we’re going to do in the future to interest rates”
  - Sometimes expressed as a conditional: “If X happens, then we will do <this> to interest rates”
  - Eliminates interest rate uncertainty (aside from uncertainty about when X will happen)

Yield Curve

- Yield curve shows – *on any one day* – relationship between that day’s ST rates and LT rates

- Animated Yield Curve: http://stockcharts.com/charts/YieldCurve.html

Zero Lower Bound (ZLB)

- Traditional belief: Target FFR can’t go below 0
  - Fed’s 2008-2015 target for Federal Funds Rate was “in the range of 0 – 0.25 percent”
  - Fed was at **zero lower bound**
- So Fed tried other strategies
  - “Quantitative Easing” (2009-2014)
  - Operation Twist (late 2011, 2012)
- All had same goal: increasing lending & spending

Zero Lower Bound (ZLB)

- Traditional belief: Target FFR can't go below 0
  - Fed's 2008-2015 target for Federal Funds Rate was "in the range of 0 – 0.25 percent"
  - Fed was at **zero lower bound**
- *Why do I say "Traditional belief"?* Because other countries have broken ZLB and Fed officials ponder whether Fed will eventually do so, too

Phillips Curve

- Is a relationship between unemployment and price inflation (rate of change of CPI or other price index)
- Original, by A.W. Phillips, used UK data, 1861-1957
  - He found **stable** trade-off between unemployment & wage inflation (rate of change of nominal wages)

Original Phillips Curve

- A.W. Phillips used U.K. data for 1861-1957
- Found:
  - tradeoff between unemployment and wage inflation
- Story:
  - Bargaining power

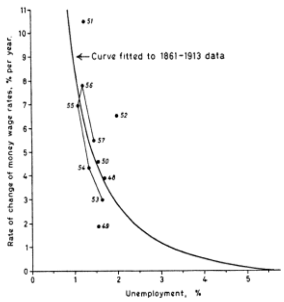


Fig 10. 1948-1957

Phillips Curve

- Is a relationship between unemployment and price inflation (rate of change of CPI or other price index)
- Original, by A.W. Phillips, used UK data, 1861-1957
  - He found **stable** trade-off between unemployment & wage inflation (rate of change of nominal wages)
- Story: Bargaining power
  - Change demand for labor → change wages
  - Lots of slack in labor market: low wage inflation
  - Little slack in labor market: high wage inflation

Phillips Curve (U.S. version)

- Tradeoff between unemployment and *price* inflation

- "This shows the menu of choice…"

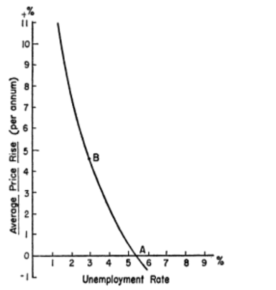
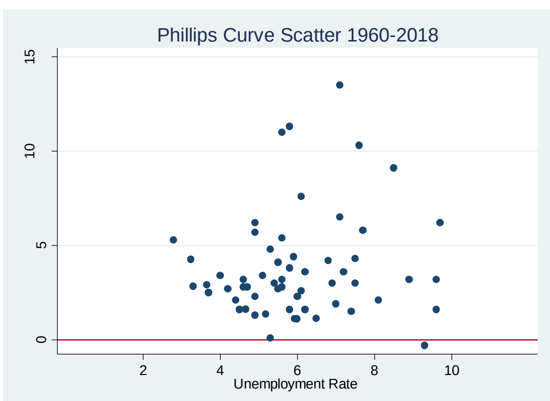
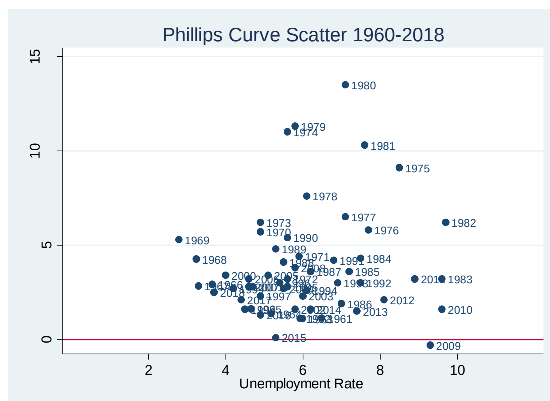
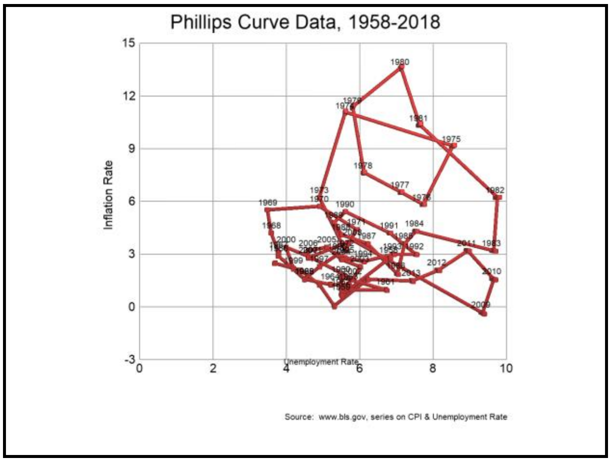


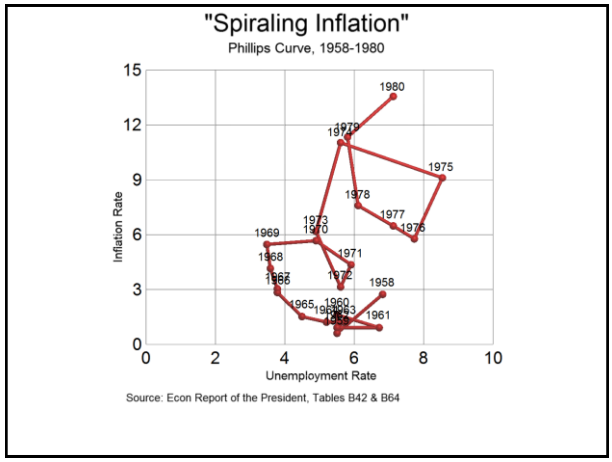
FIGURE 2
MODIFIED PHILLIPS CURVE FOR U.S.
This shows the menu of choice between different degrees of unemployment and price stability, as roughly estimated from last twenty-five years of American data.

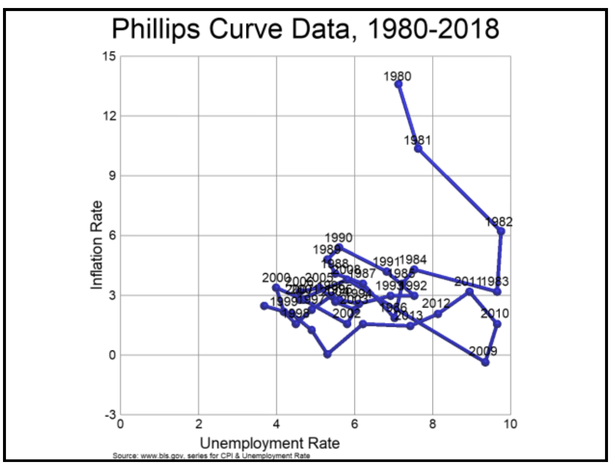
Phillips Curve

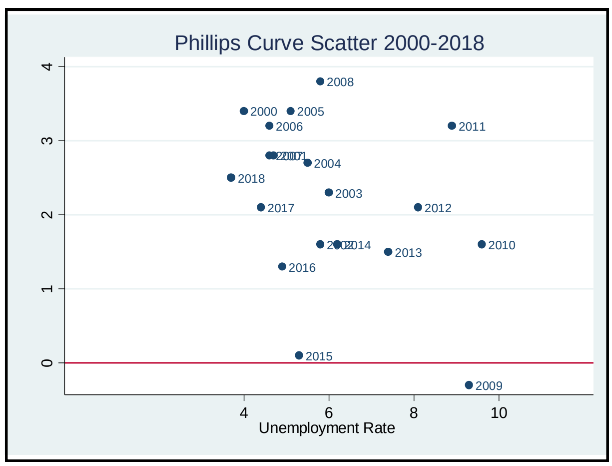





Phillips Curve Data, 1958-2018
Inflation Rate
Unemployment Rate
Source: www.bls.gov, series on CPI & Unemployment Rate


"Spiraling Inflation"
Phillips Curve, 1958-1980
Inflation Rate
Unemployment Rate
Source: Econ Report of the President, Tables B42 & B64


Phillips Curve Data, 1980-2018
Inflation Rate
Unemployment Rate
Source: www.bls.gov, series for CPI & Unemployment Rate


Phillips Curve Scatter 2000-2018
Unemployment Rate

Movements Along vs. Shifts

- If aggregate demand changes (which of course then changes GDP, employment, and unemployment),
  move along Phillips Curve
- If prices change for some reason other than "change in AD,"
  shift of Phillips Curve

What makes Phillips Curve shift?

1. Change in inflationary expectations

What makes Phillips Curve shift?

2. cost shocks ("supply shocks")

What makes Phillips Curve shift?

3. change in labor productivity growth

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.