How to Stop Worrying About R-Star - and Let Go of Activist Interest Rate Policies

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The Perceived Problem of a Low "R-Star"

- "R* is the short-term real rate such that policy is neither accommodative nor contractionary"

$$i = r + \pi \tag{1}$$

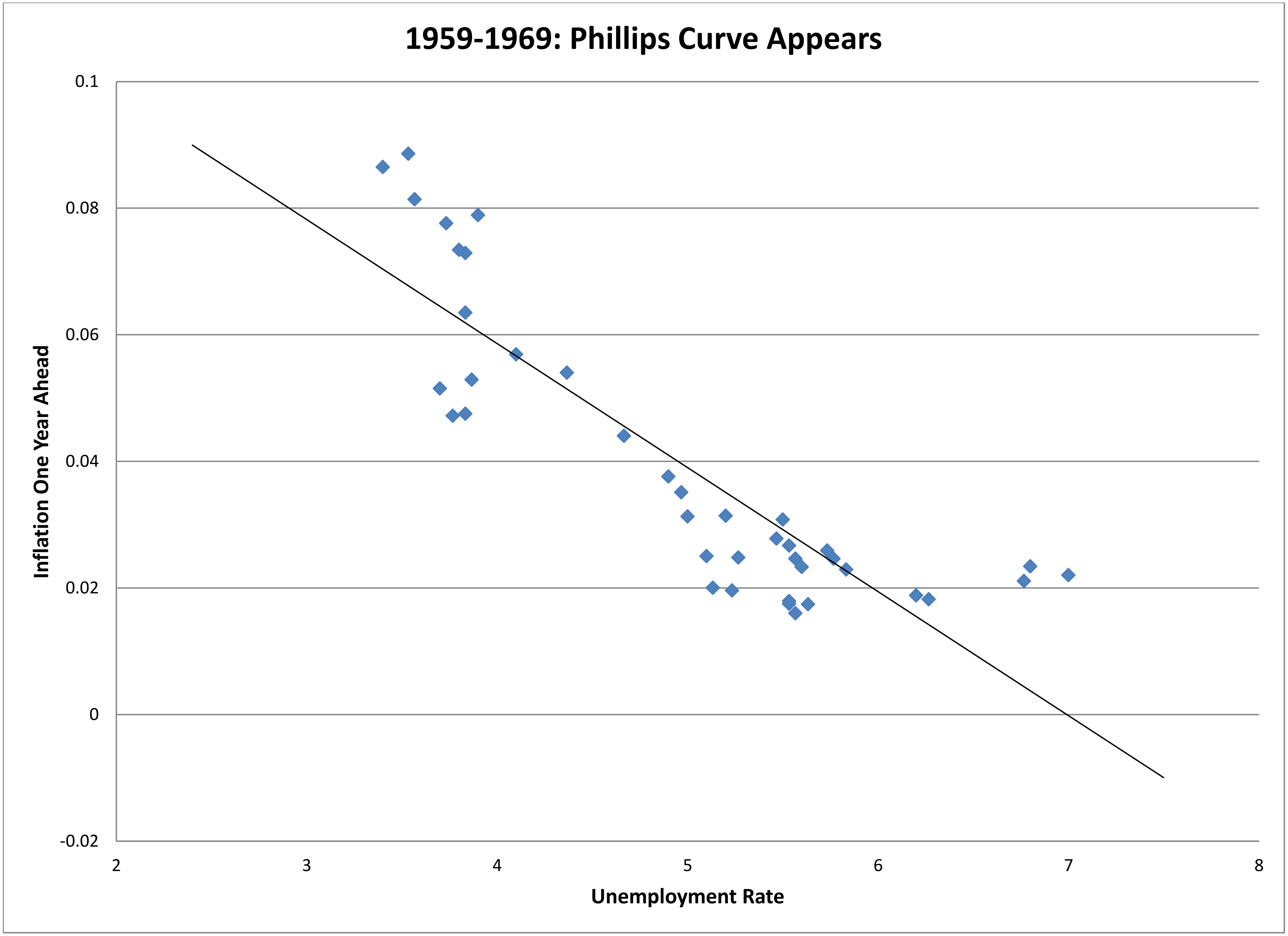
- *i = nominal rate, r = real rate, π = inflation rate*
- **Fed Policy Issue**
- Low r + low π limits Fed's ability to lower interest rates when economy weakens (ZB)
- I will argue that short-run interest rate policy - independent of level of R^*- may have little positive effect when economy weakens

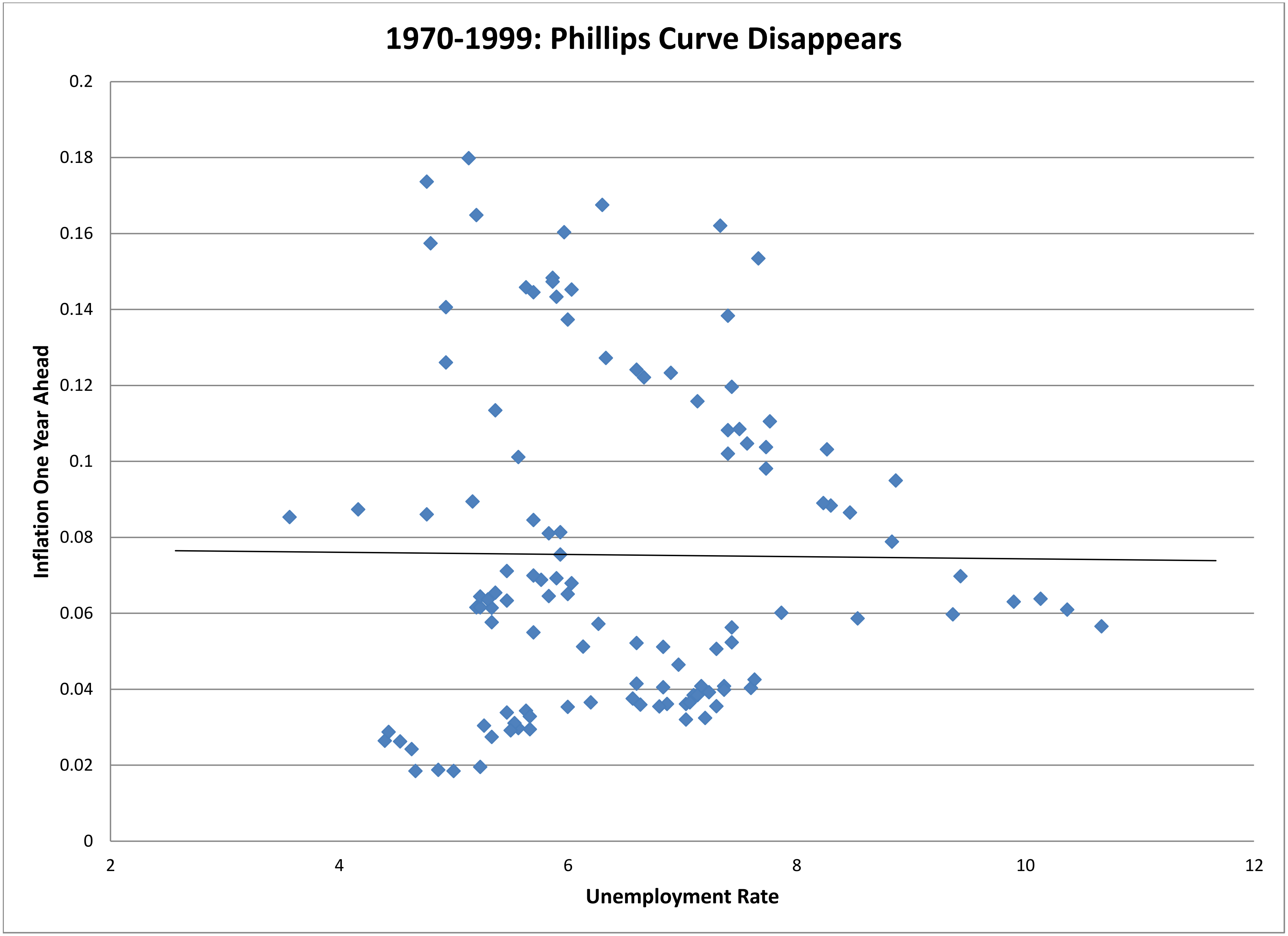
Today's View About Policy and R-Star

- Policy view based on 3 assumptions that go hand-in-hand:
- *Phillps Curve* - systematic empirical relationship between unemployment and inflation exploitable by policy
  - *Temporary (demand) shocks* dominate fluctuations
- "*Secular Stagnation*" - *chronically low demand* - is depressing trend economic growth
- I will present evidence that these views have limited empirical support and/or are not clearly understood
- Discuss these 3 assumptions in turn

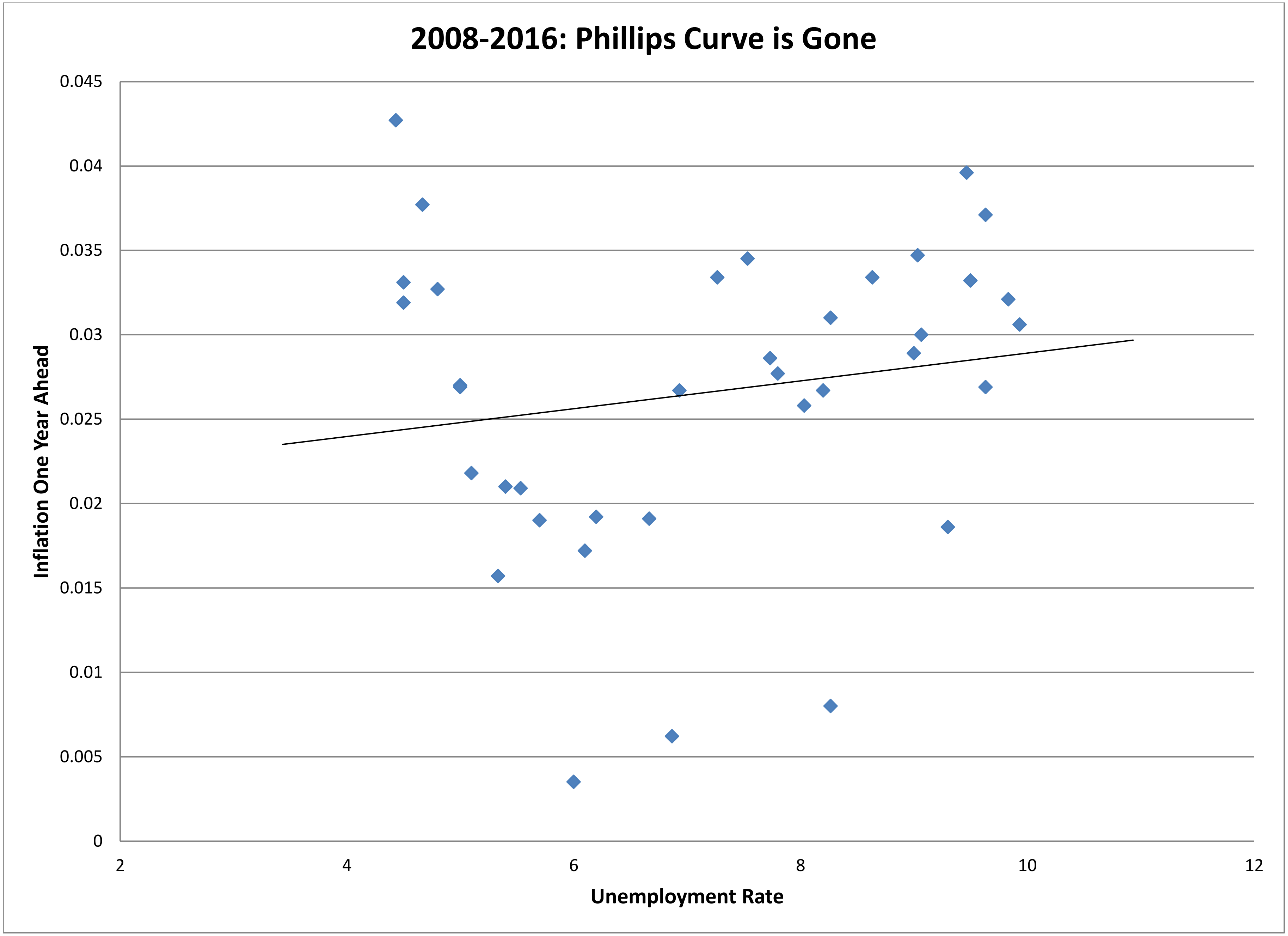
Phillips Curve is not in the Data

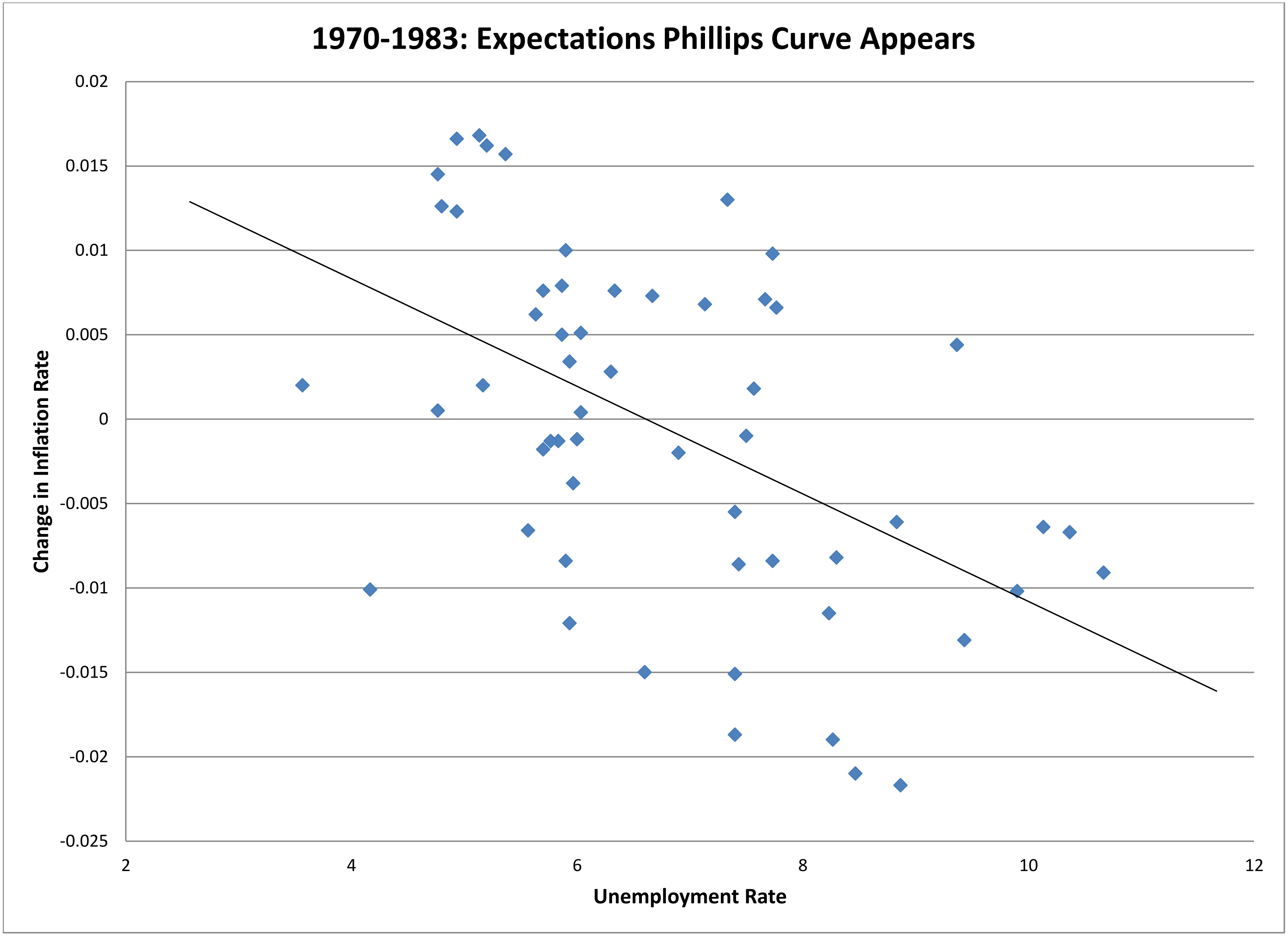
- In 2000, Atkeson-Ohanian showed Fed inflation forecasts based on Phillips Curve much worse than *naive forecast*
  - *Naive forecast: future inflation is equal to current inflation*
- Why is naive better? Weak empirical relationship between unemployment (or other measures of economic slack) & inflation
- Many follow-ups, several by Stock & Watson (SW) - same conclusion:
- *"Suppose you are told that next quarter the economy would plunge into recession, with the unemployment rate jumping by 2 percentage points. Would you change your inflation forecast? The literature is now full of formal statistical evidence suggesting that this information should be ignored."* SW, *Phillips Curve Inflation Forecasts*, 2009


1959-1969: Phillips Curve Appears
0.1
0.08
0.06
0.04
0.02
0
-0.02
2
3
4
5
6
7
8
Inflation One Year Ahead
Unemployment Rate

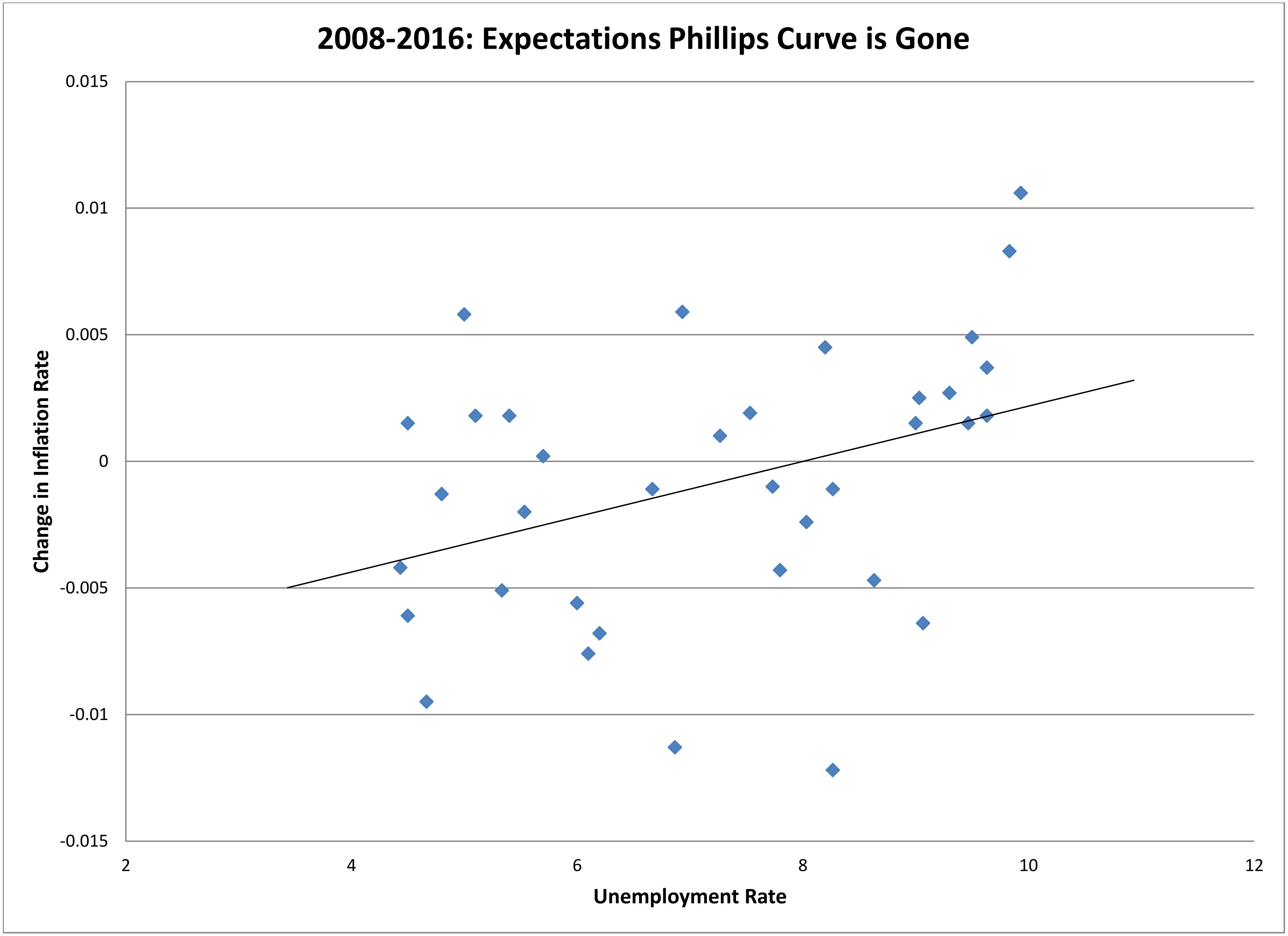


1970-1999: Phillips Curve Disappears
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Inflation One Year Ahead
2
4
6
8
10
12
Unemployment Rate


2008-2016: Phillips Curve is Gone
Inflation One Year Ahead
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
2
4
6
8
10
12
Unemployment Rate



1970-1983: Expectations Phillips Curve Appears
0.02
0.015
0.01
0.005
0
-0.005
-0.01
-0.015
-0.02
-0.025
Change in Inflation Rate
2
4
6
8
10
12
Unemployment Rate

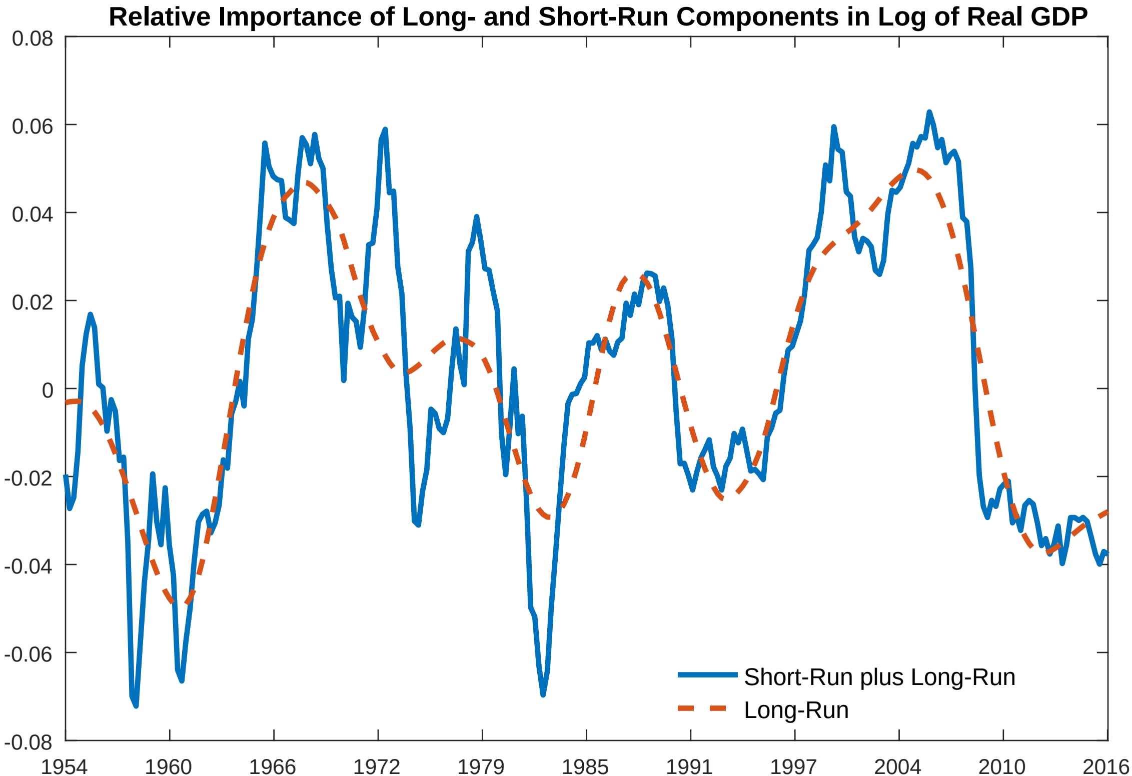

2008-2016: Expectations Phillips Curve is Gone
0.015
0.01
0.005
0
-0.005
-0.01
-0.015
Change in Inflation Rate
2
4
6
8
10
12
Unemployment Rate

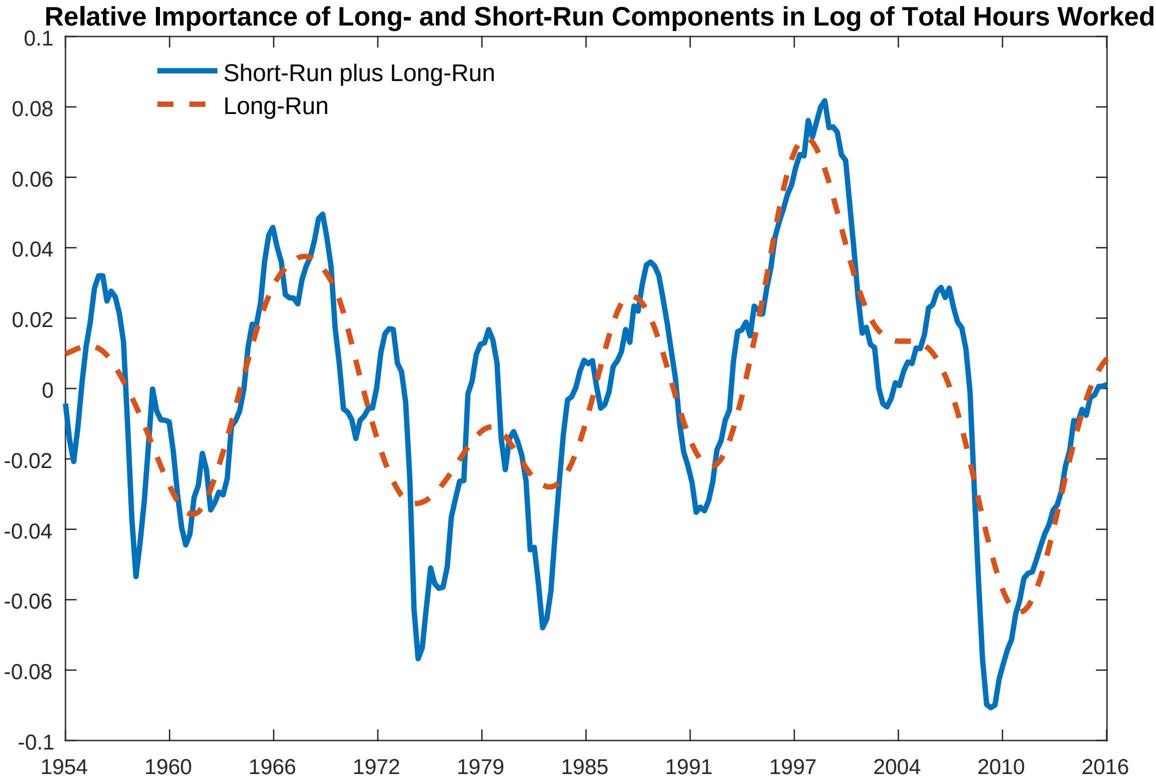
What Happened to Phillips Curve?

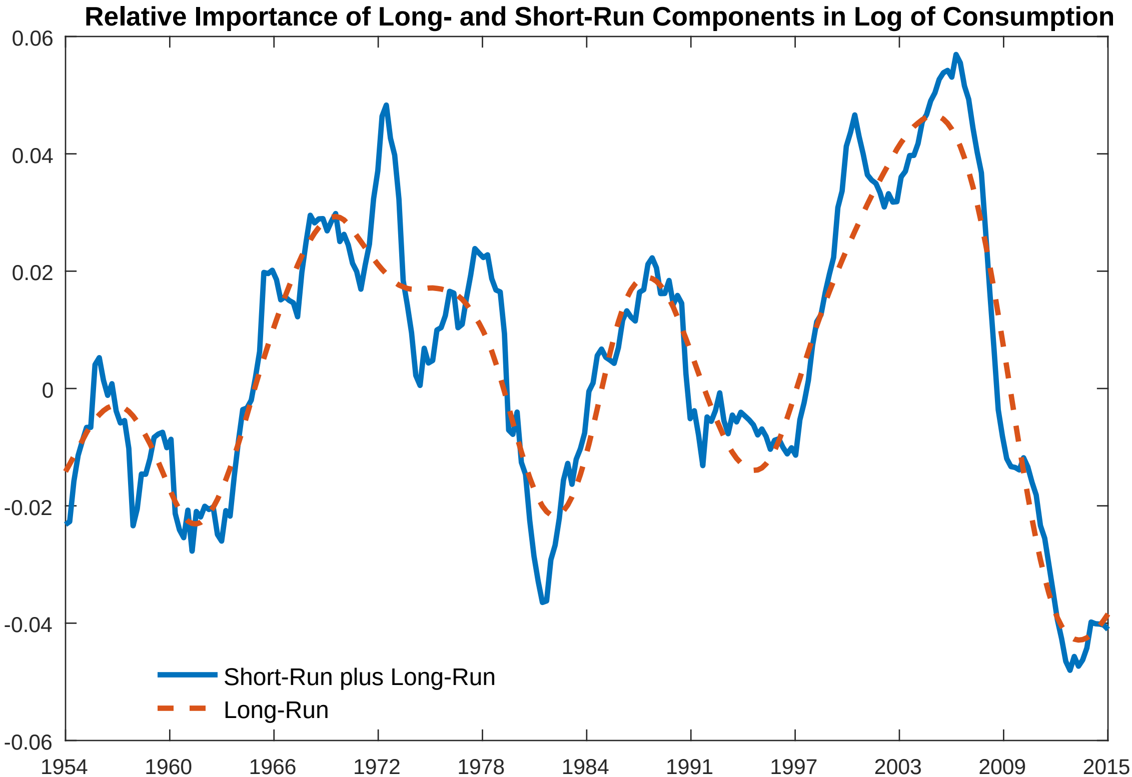
- Foundations of Phillips Curve - "Sticky Wages" & "Sticky Prices" - have changed
- These factors are less important today than in past
- *Sources of wage stickiness*: private sector unionization rate declined from about 35% to around 6%
- *Incentives to change wages*: Today, laid-off workers suffer enormous future wage losses (Davis and Von Wachter)
- This means workers gladly will accept even large wage cuts to keep job during recession
- *Sources of price stickiness:* More vigorous competition, technological change in information, sales, marketing, and pricing practices (Amazon, Walmart, Airlines, Hotels,...) suggest price stickiness and its allocational effects have declined over time

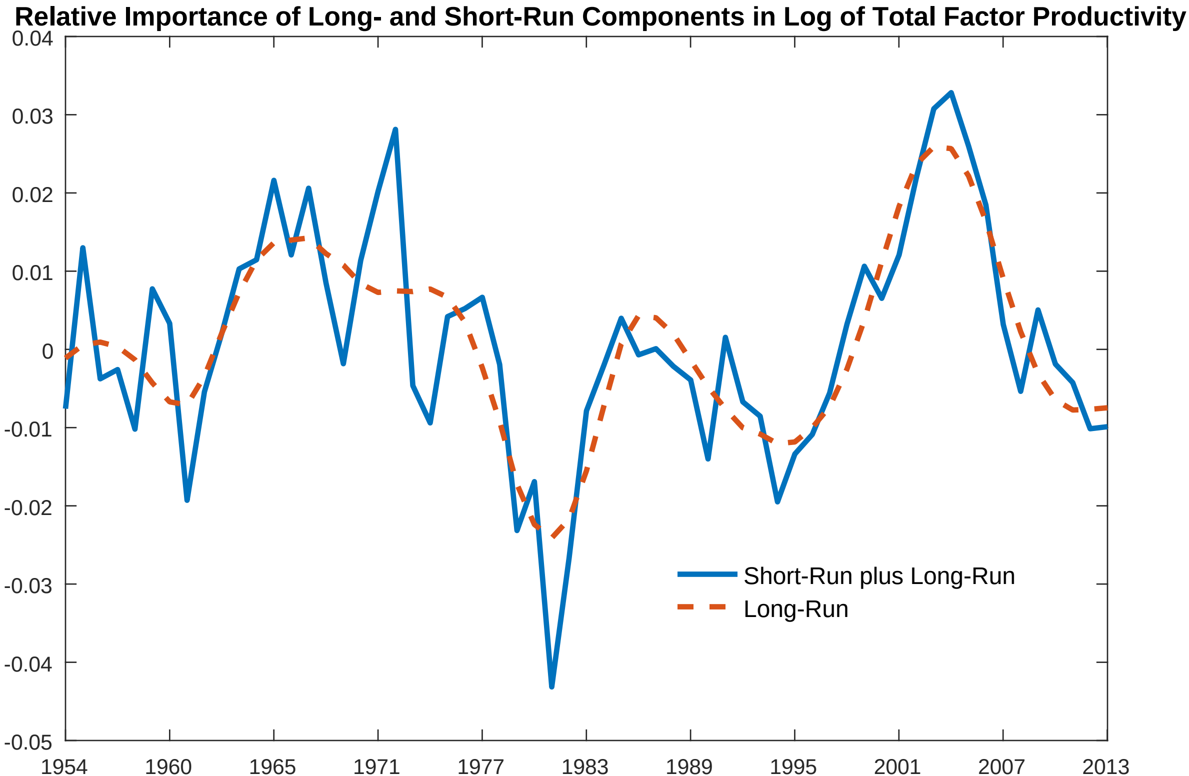
Short-Run Fluctuations Have Declined Over Time

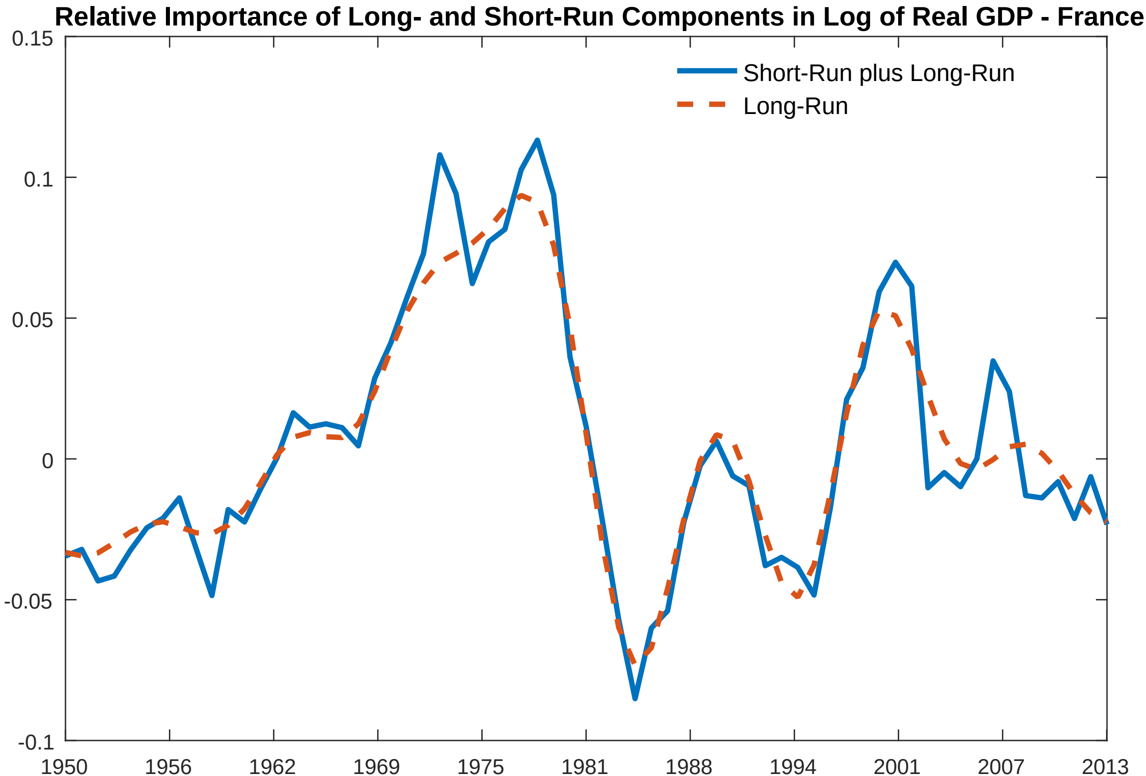
- Interest rate policies based on temporary (demand) shocks driving fluctuations
- Fluctuations due to very long-run components since early 1980s
- Decompose deviations from trend into a short-run and a long-run component
- Long-run dominates in U.S. and in other countries
- Suggests conventional policies will not be effective

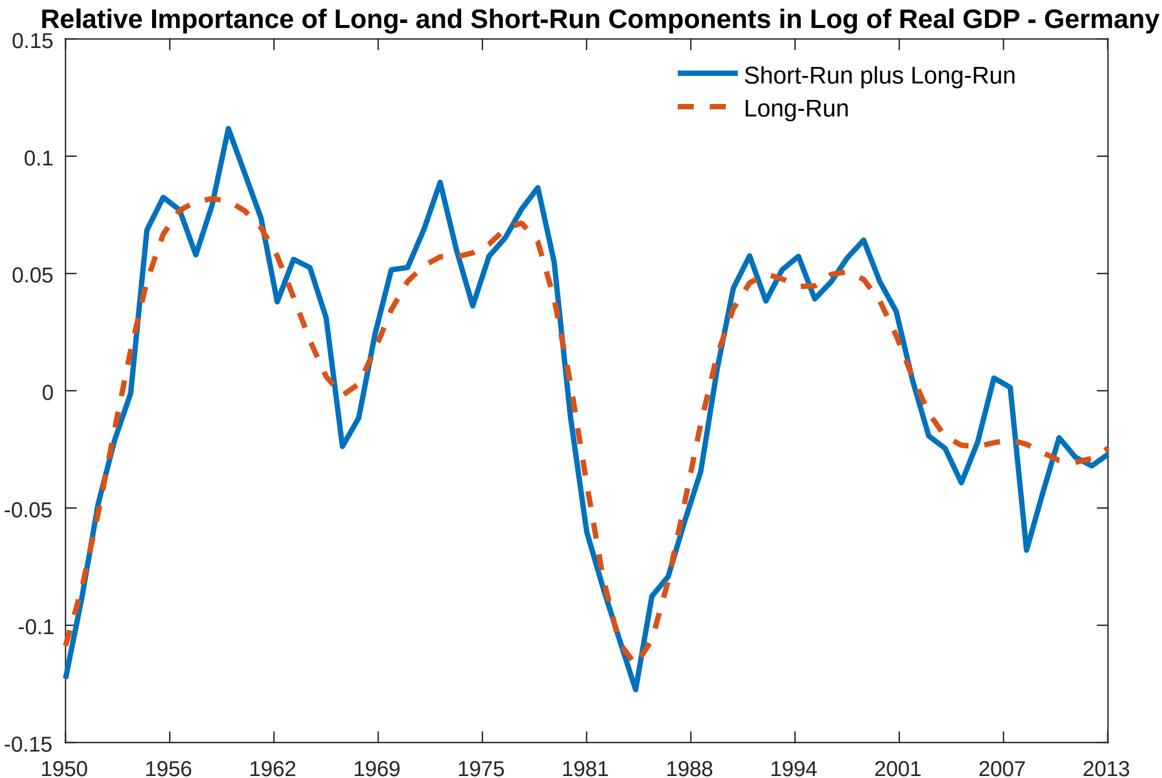

Relative Importance of Long- and Short-Run Components in Log of Real GDP
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
1954
1960
1966
1972
1979
1985
1991
1997
2004
2010
2016
Short-Run plus Long-Run
Long-Run


Relative Importance of Long- and Short-Run Components in Log of Total Hours Worked
Short-Run plus Long-Run
Long-Run
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
1954
1960
1966
1972
1979
1985
1991
1997
2004
2010
2016

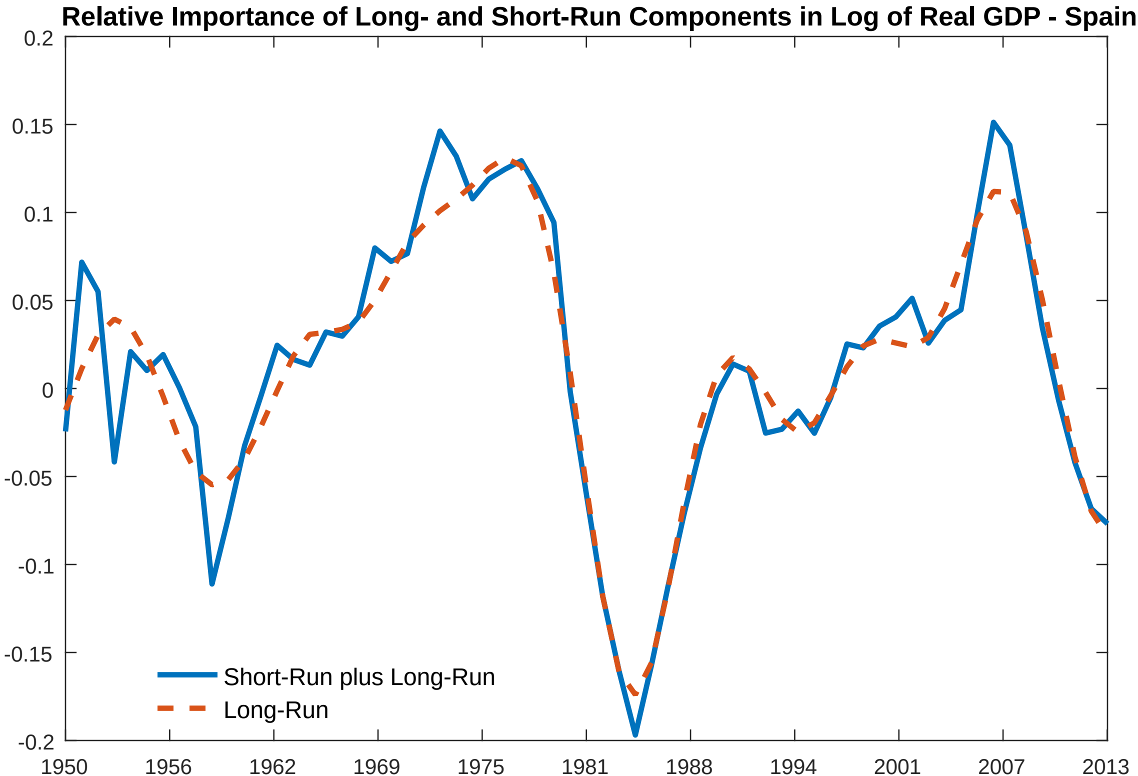

Relative Importance of Long- and Short-Run Components in Log of Consumption
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
1954
1960
1966
1972
1978
1984
1991
1997
2003
2009
2015
Short-Run plus Long-Run
Long-Run


Relative Importance of Long- and Short-Run Components in Log of Total Factor Productivity
0.04
0.03
0.02
0.01
0
-0.01
-0.02
-0.03
-0.04
-0.05
1954
1960
1965
1971
1977
1983
1989
1995
2001
2007
2013
Short-Run plus Long-Run
Long-Run


Relative Importance of Long- and Short-Run Components in Log of Real GDP - France
Short-Run plus Long-Run
Long-Run
0.15
0.1
0.05
0
-0.05
-0.1
1950
1956
1962
1969
1975
1981
1988
1994
2001
2007
2013

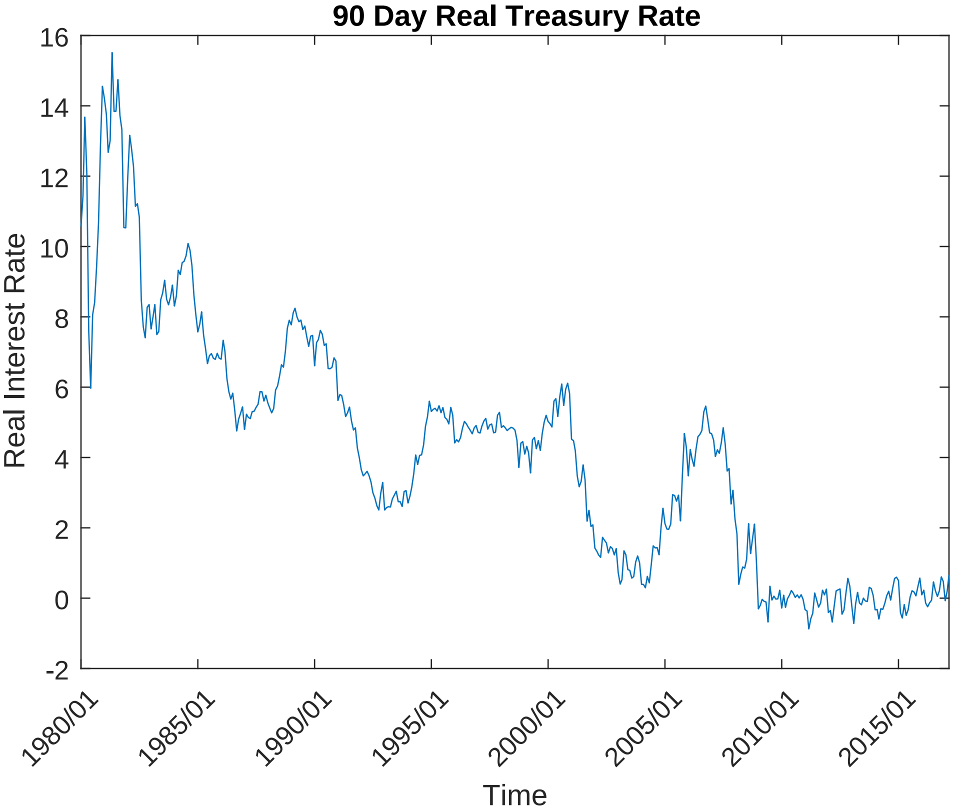


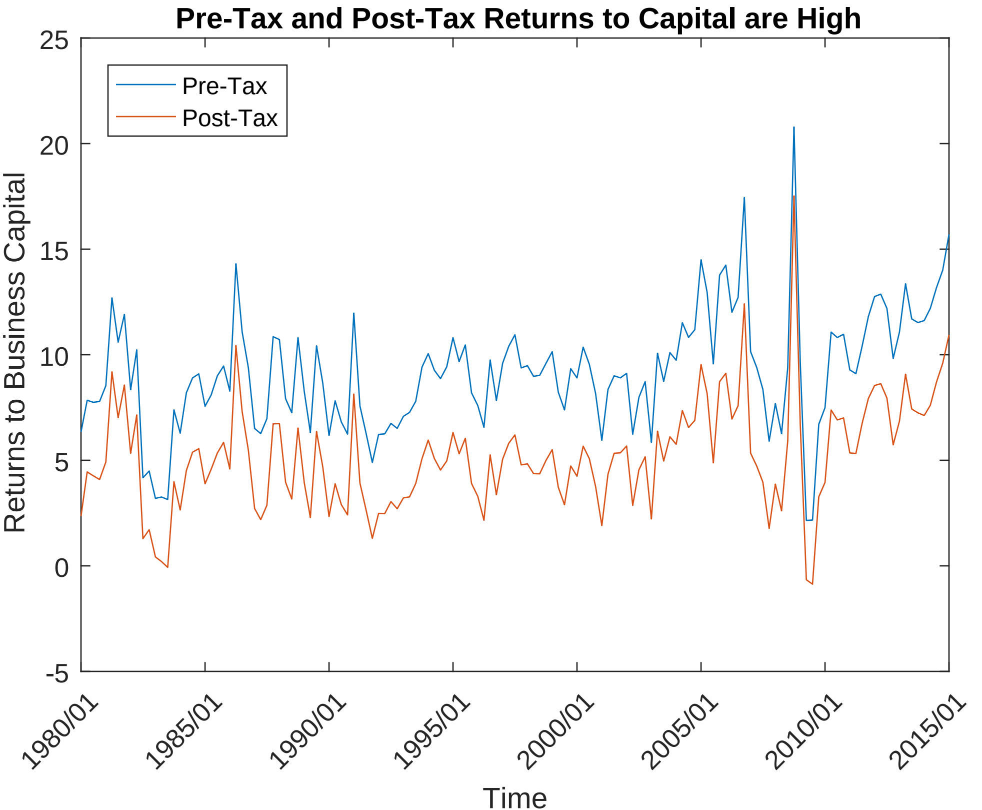
Relative Importance of Long- and Short-Run Components in Log of Real GDP - Germany
Short-Run plus Long-Run
Long-Run
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
1950
1956
1962
1969
1975
1981
1988
1994
2001
2007
2013


Relative Importance of Long- and Short-Run Components in Log of Real GDP - Spain
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
1950
1956
1962
1969
1975
1981
1988
1994
2001
2007
2013
Short-Run plus Long-Run
Long-Run

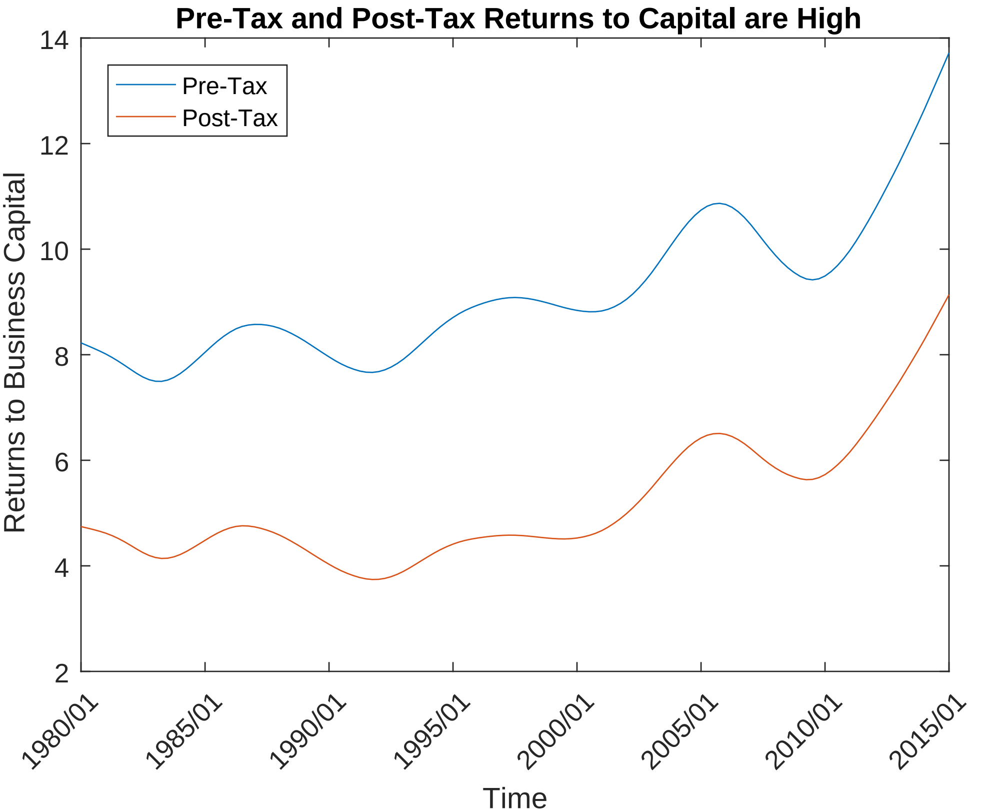
Secular Stagnation? Real Returns to Investment are High

- Gomme, Ravikumar, & Rupert (2015) construct real returns on gov't & private assets
- "*Business capital returns bear little resemblance to short-run gov't returns*"
- Both pre and post-tax returns to private capital are historically high
- 2012-16: 11.8% pre-tax return - historical average = 10.7%
- 2012-16: 7.6% post-tax return - historical average = 6.0%
- U.S. today is not a *low rate of return economy*


90 Day Real Treasury Rate
Real Interest Rate
16
14
12
10
8
6
4
2
0
-2
1980/01
1985/01
1990/01
1995/01
2000/01
2005/01
2010/01
2015/01
Time



Pre-Tax and Post-Tax Returns to Capital are High
Pre-Tax
Post-Tax
Returns to Business Capital
25
20
15
10
5
0
-5
1980/01
1985/01
1990/01
1995/01
2000/01
2005/01
2010/01
2015/01
Time


Pre-Tax and Post-Tax Returns to Capital are High
Pre-Tax
Post-Tax
Returns to Business Capital
14
12
10
8
6
4
2
1980/01
1985/01
1990/01
1995/01
2000/01
2005/01
2010/01
2015/01
Time

Despite High Returns, Investment is Weak

- Investment is well below trend

Average Annual Growth Rate - Real Gross Domestic Investment

1950s	1960s	1970s	1980s	1990s	2000-16
2.0%	5.5%	5.2%	3.7%	5.9%	1.1%

- High returns & low investment suggest either:
- (i) *Much higher risk*, or (ii) *much lower expected future returns*
- Both are possibilities
- Low productivity growth (Haltiwanger et al)
- Impact of uncertainty (Bloom, Baker, and Davis)
- These factors are not reasonably addressed by monetary policy

What Should Fed Do About Low R-Star Conundrum?

- Breakdown of Phillips Curve, dominance of long-run fluctuations, high return-low investment economy, suggest:
- Short-term interest rate policies may not help when economy weakens - but this remains at the top of the Fed's to-do list
- *"Phillips Curve is predictively irrelevant...but remains a workhorse of forecasting models and is the best way to understand policymaker views about unemployment and inflation"* SW, *Phillips Curve Inflation Forecasting*, 2009
- Alternative - develop rules-based policies that focus on low and stable inflation and that promote well-functioning capital markets
- Fed can contribute significantly to understanding how capital market regulatory channels are impacting allocation of capital
- Policies that improve capital allocation to rapidly-growing businesses are much more more beneficial than short-term interest policies aimed at dampening fluctuations