

# **Did Macroeconomic Policy Play a Different Role in the (Post-2009) Recovery?**

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# Major Questions

- The shocks put us in the extreme lower tail—of course things are different.
  - Did we keep following the policy rule we were following before 2008?
    - What, before 2008, did we and markets expect would be done at the zero lower bound?
  - Was that pre-2008 rule the right policy rule to be following?
- What do we wish we had done differently?
- Why haven't we made larger mid-course corrections?

# Major Conclusions

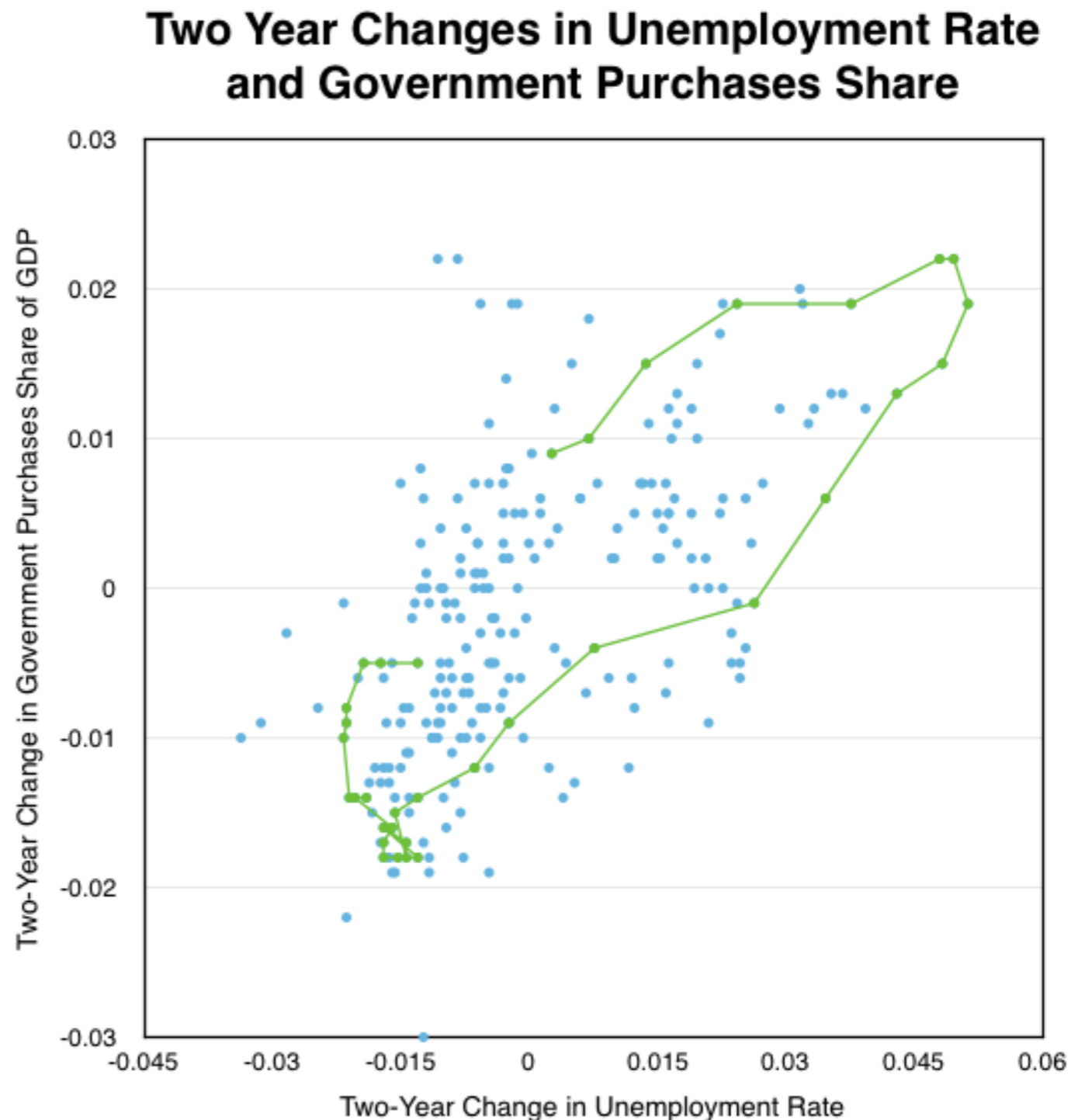
- Our policy rule was:
  - A Federal Reserve willing at the ZLB to go the extra mile following Friedman (1997) (extraordinary QE) but not Bernanke (2000) (helicopter money) or Krugman (1998) (credible promises of irresponsibly higher inflation)
  - Banking/regulatory policy that now appears naively overconfident
  - Fiscal policy effectively off the table even at the ZLB for reasons that still puzzle
- If the Federal Reserve is going to retain plenary stabilization policy power, it needs more tools
- If fiscal policy is to come back in, fiscal authorities badly need to step up their technocratic game

# The Pre-2008 Policy Rule in the United States: Fiscal Policy

- The “Great Moderation”
- The eclipse of discretionary fiscal policy
  - Automatic stabilizers fine
  - But discretionary countercyclical fiscal policy not fine:
    - Too hard to implement
    - Too likely to confuse legislators
      - They needed to focus on prudent long-term funding for the social insurance state
      - An imprudent long-term fiscal position possibly very costly
        - (Not, mind you, that legislators were very good at focusing on the problem)

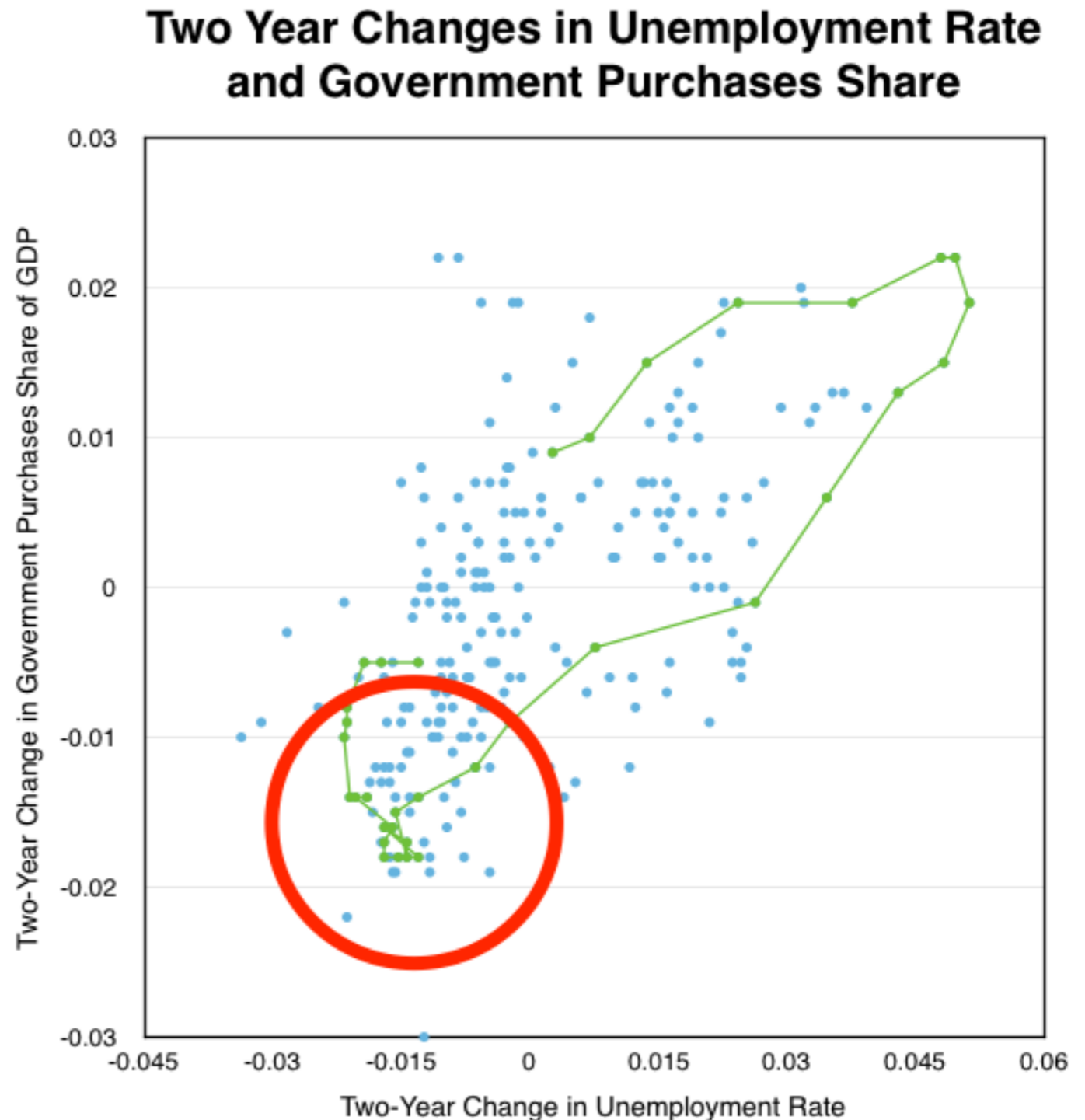
# The Fiscal Pattern: Initial Stimulus

- Expected response on the tax-and-transfer side—simply automatic stabilizers
- On the purchases side:
  - Blue dots since 1954, two-year changes in the unemployment rate and in the government purchases share of GDP
  - Green line starting in 2008:I at (.003, .009), when the unemployment rate begins to rise above its value two years earlier
- Initial spending response at upper edge of post-1954 pattern
- By 2011:I purchases below 2009:I share



# The Fiscal Pattern: Subsequent Austerity

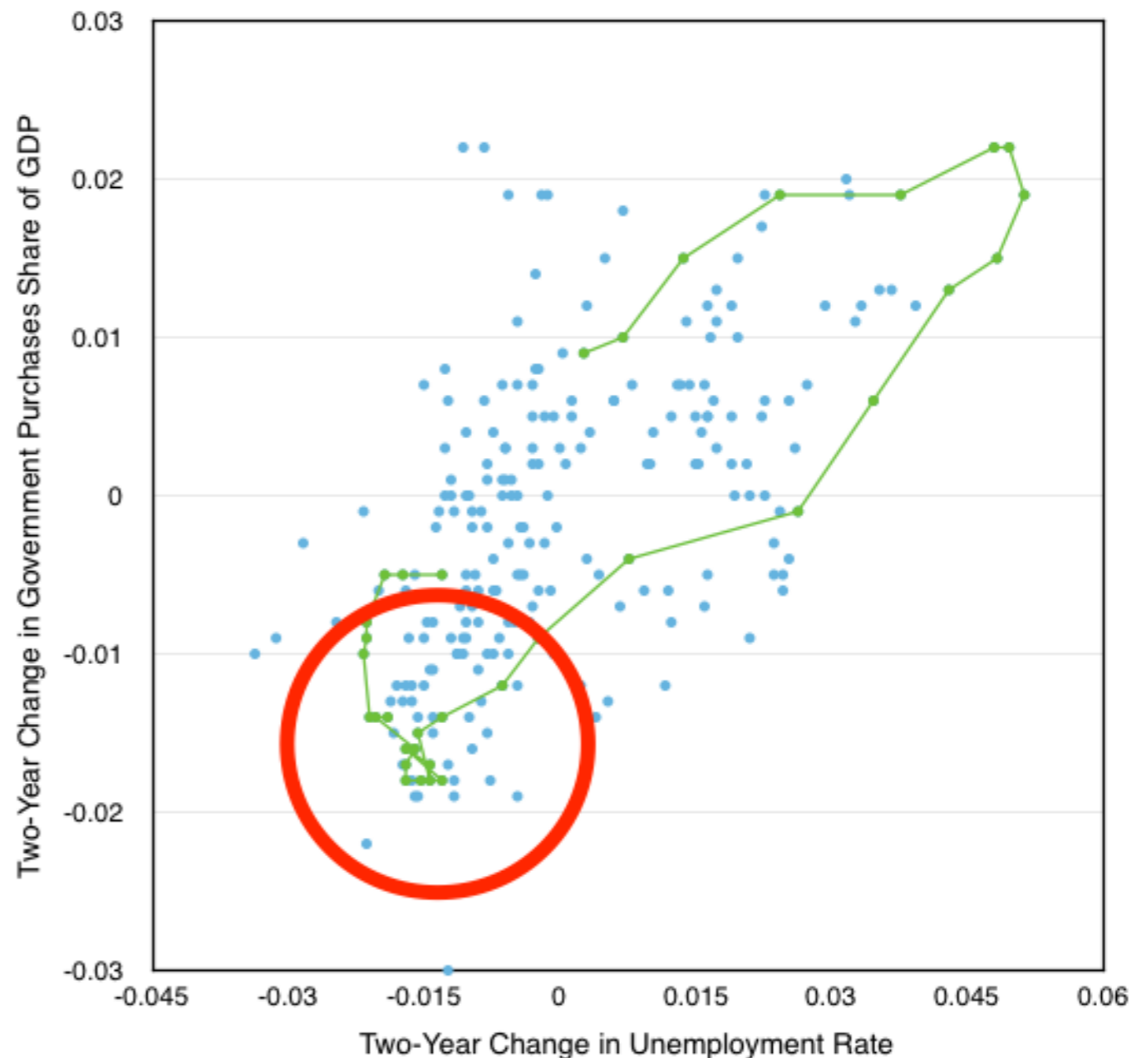
- Green line starting in 2008:I at (.003, .009)
- From 2011:II the economy gets hung up on the bottom left of the scatter...
- Cutting the purchases share by an average of 0.6%-points/year for more than five years...
- That is a big, and unprecedented, deal
  - 3/4 state and local;  
1/4 federal



# The Fiscal Pattern: Substantial Deviation from Policy Rule

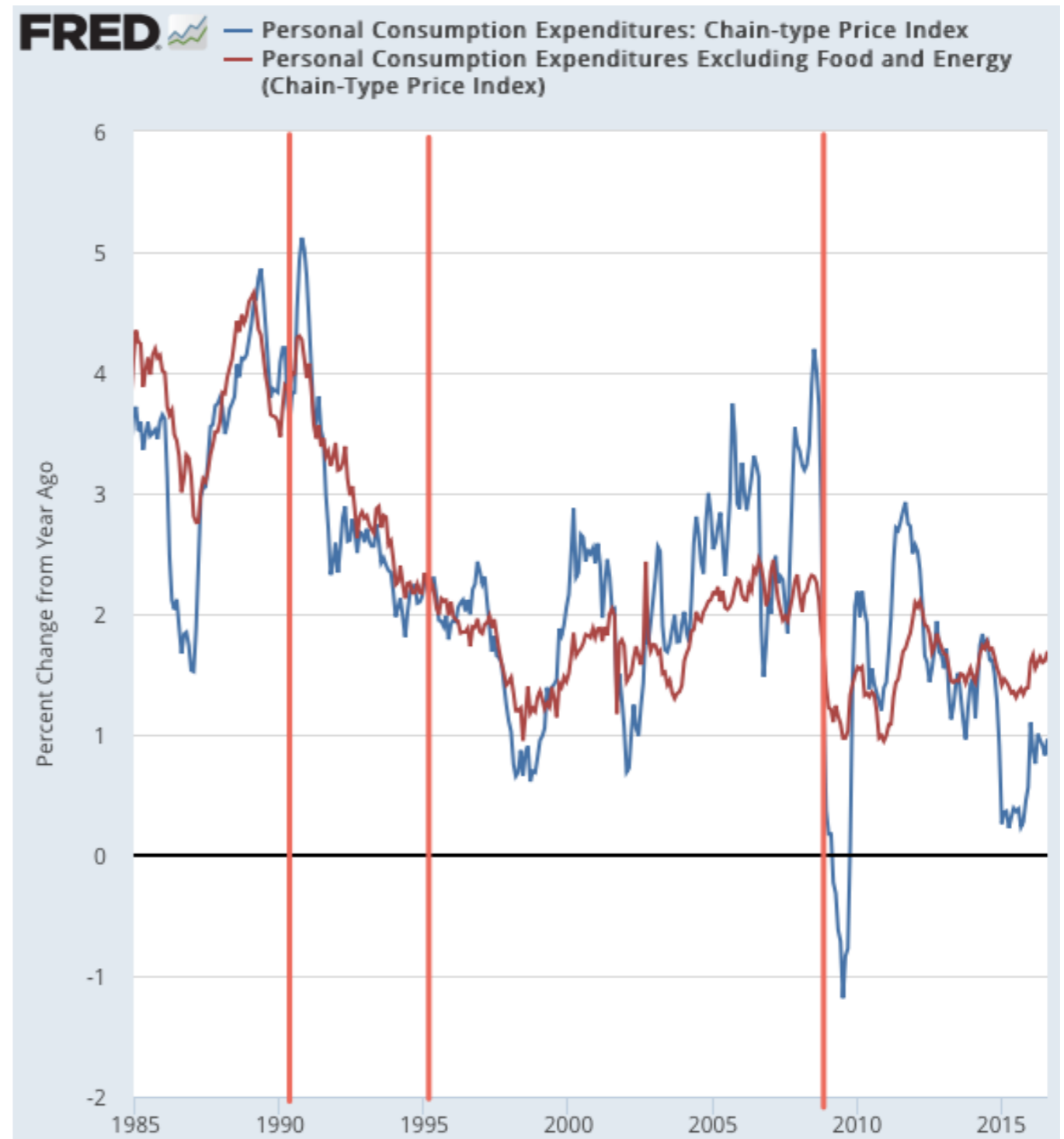
- Green line starting in 2008:1 at (.003, .009)
- This post-2011 austerity does not fit any sort of Keynesian countercyclical principle...
- And it does not fit standard classical principles of what to do in a time of absurdly low borrowing costs either...
- Fear of interest rate spikes and thus of debt burden?
- Opportunistic state-shrinking?
- Federal Reserve chairs in this decade have not thought that this has made their lives easier...

Two Year Changes in Unemployment Rate and Government Purchases Share



# Suggested Characterization: Four Sub-Periods since Start of “Great Moderation”

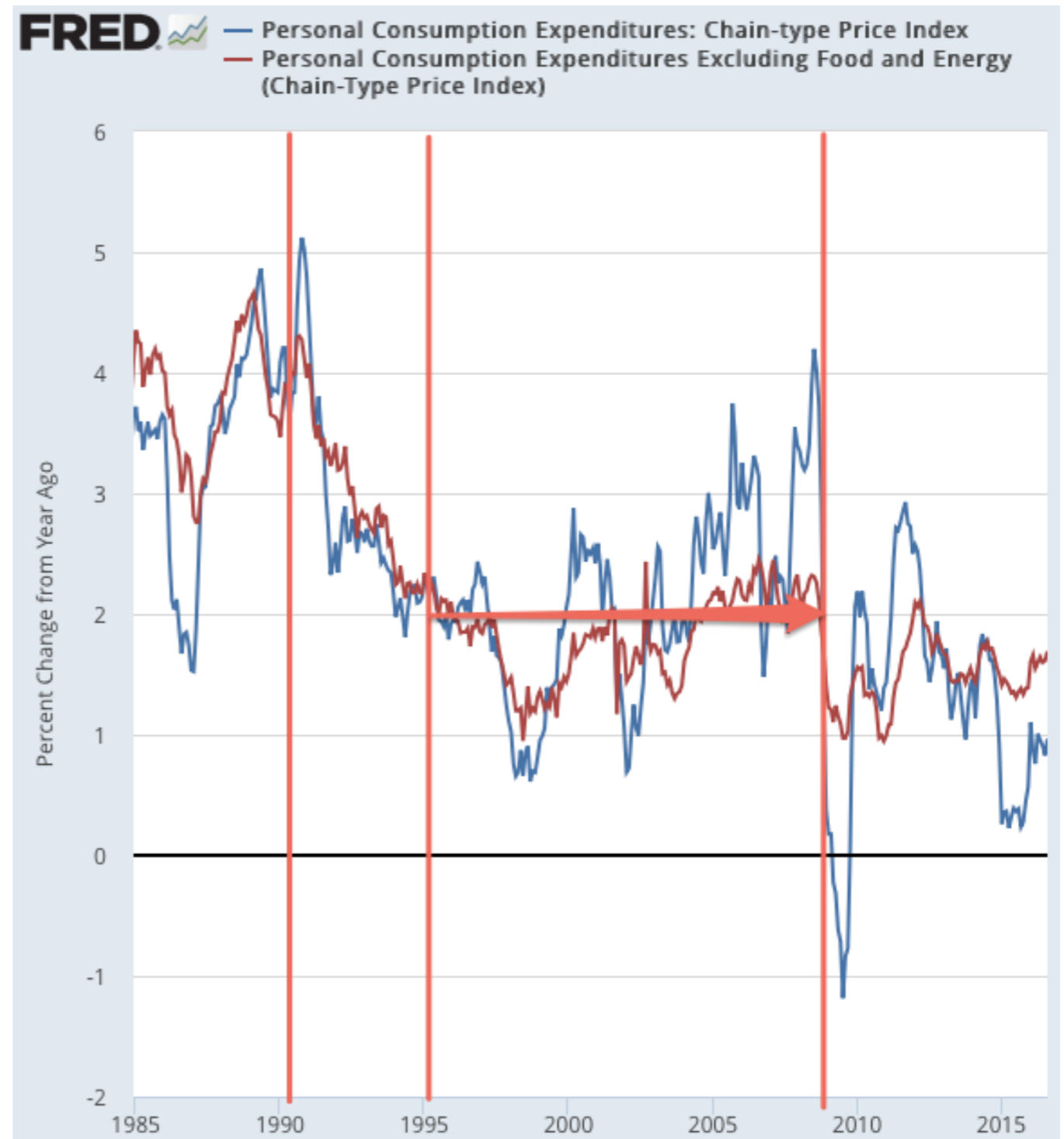
- Comfort with 4%/year PCE inflation until 1990
- Opportunistic seeking for “effective price stability” 1990-1995
- Comfort with near 2%/year average core PCE inflation 1995-2008
- Persistent, unexpected, and undesired (but at each moment small) undershoot since 2008





# 1995: The Decision to Stop at 2% Rather than Aim for 0%

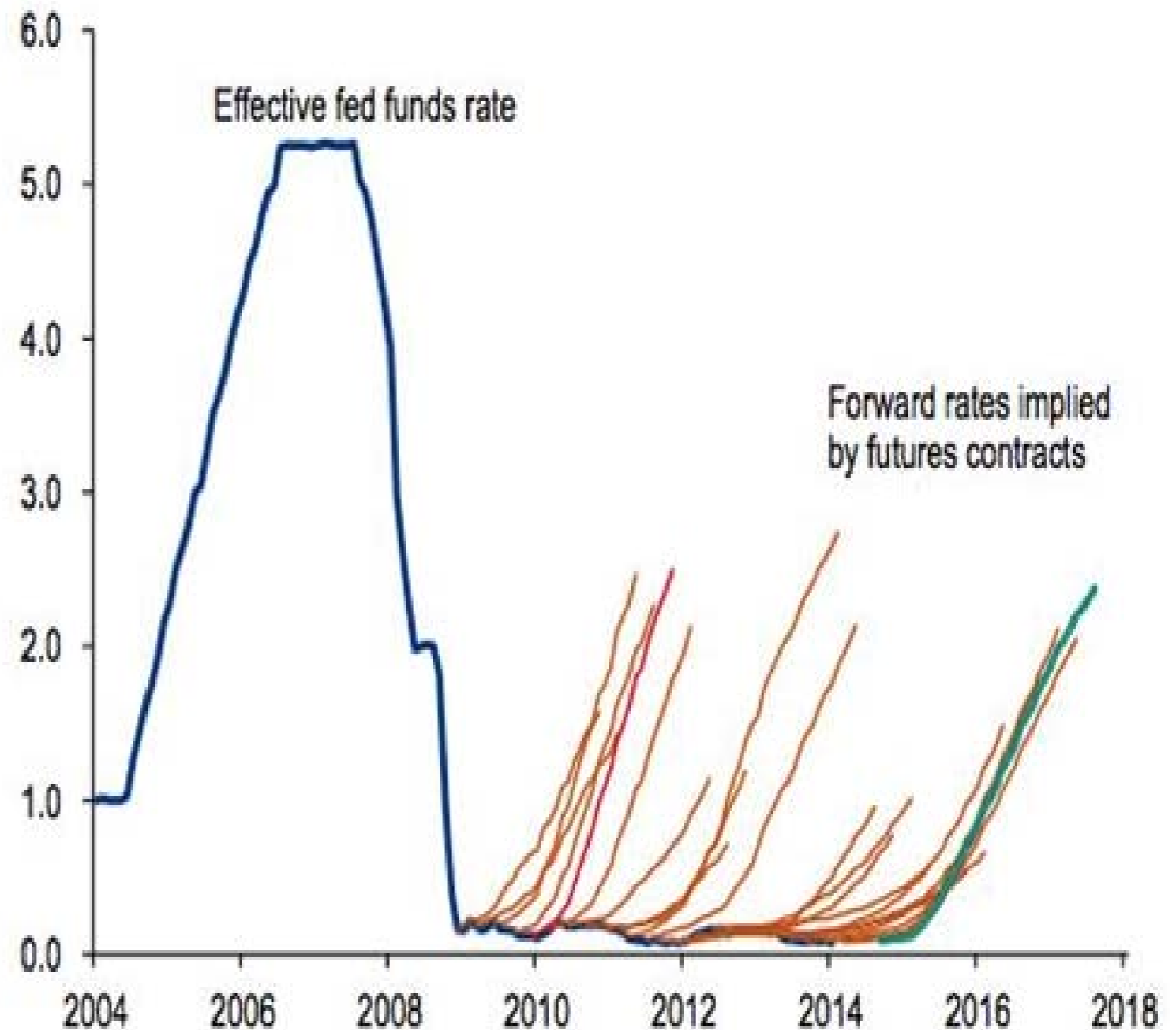
- Defining 2%/year as “effective price stability”
- Greenspan (1997): “A very high probability that the upward bias ranges between 0.5... and 1.5%-points per year...”
- And Greenspan had other fish to fry:
  - Supporting moves toward long-term budget balance
  - The decreasing “weight” of GDP and supporting the 1990s productivity speed-up



# Post-2008 Undershoot: Overoptimism on the Forecast

- It's not that the Federal Reserve is in some sort of a unique bubble
- Market has expected a much stronger outcome as well
- Although not as much stronger as FOMC
- At end of 2009, FOMC expected to normalize to 5% within 3 years
- Today, FOMC expects to normalize to 3%... sometime...

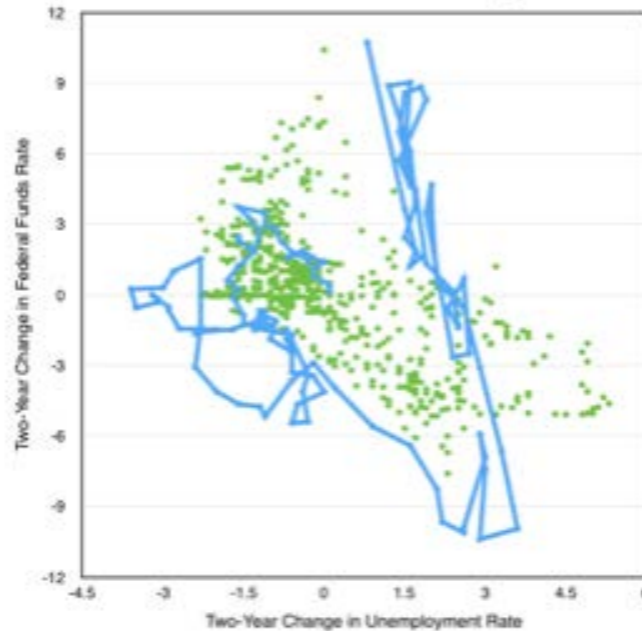
Market sees first funds rate hike in 3Q 2015



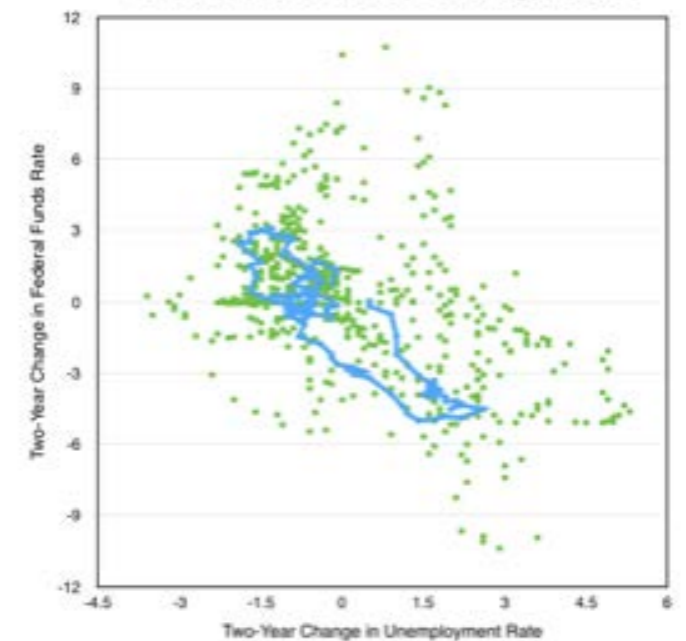
# Post-2007 in Perspective

- Initial two-year delta in Fed Funds when unemployment starts to rise above its value two years earlier:
  - 1957:3 +1.28%
  - 1960:6 -1.03%
  - 1969:6 +4.38%
  - 1974:3 +6.47%
  - 1979:9 +10.72%
  - 1990:3 -0.01%
  - 2000:9 +0.50%
  - 2007:7 -0.35%
- ZLB keeps Fed Funds response to rising unemployment less aggressive than in any episode save 1957

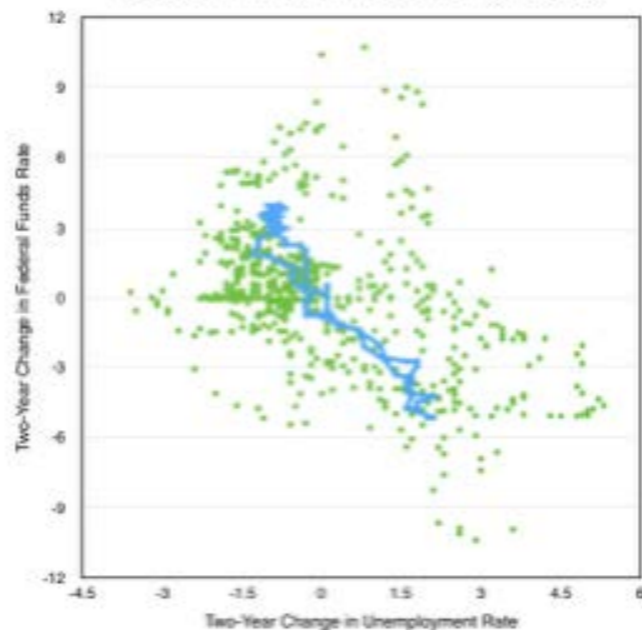
Two-Year Changes in Unemployment and Federal Funds Rates Starting 1979:9



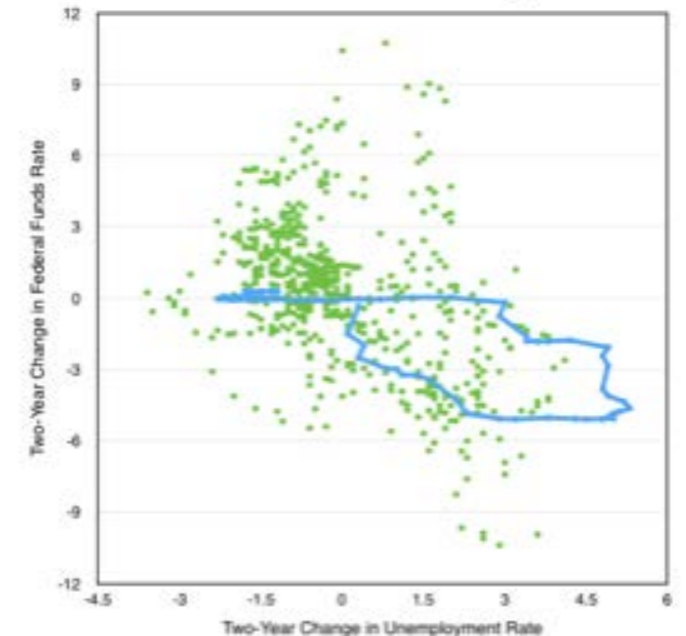
Two-Year Changes in Unemployment and Federal Funds Rates Starting 1990:3



Two-Year Changes in Unemployment and Federal Funds Rates Starting 2000:9



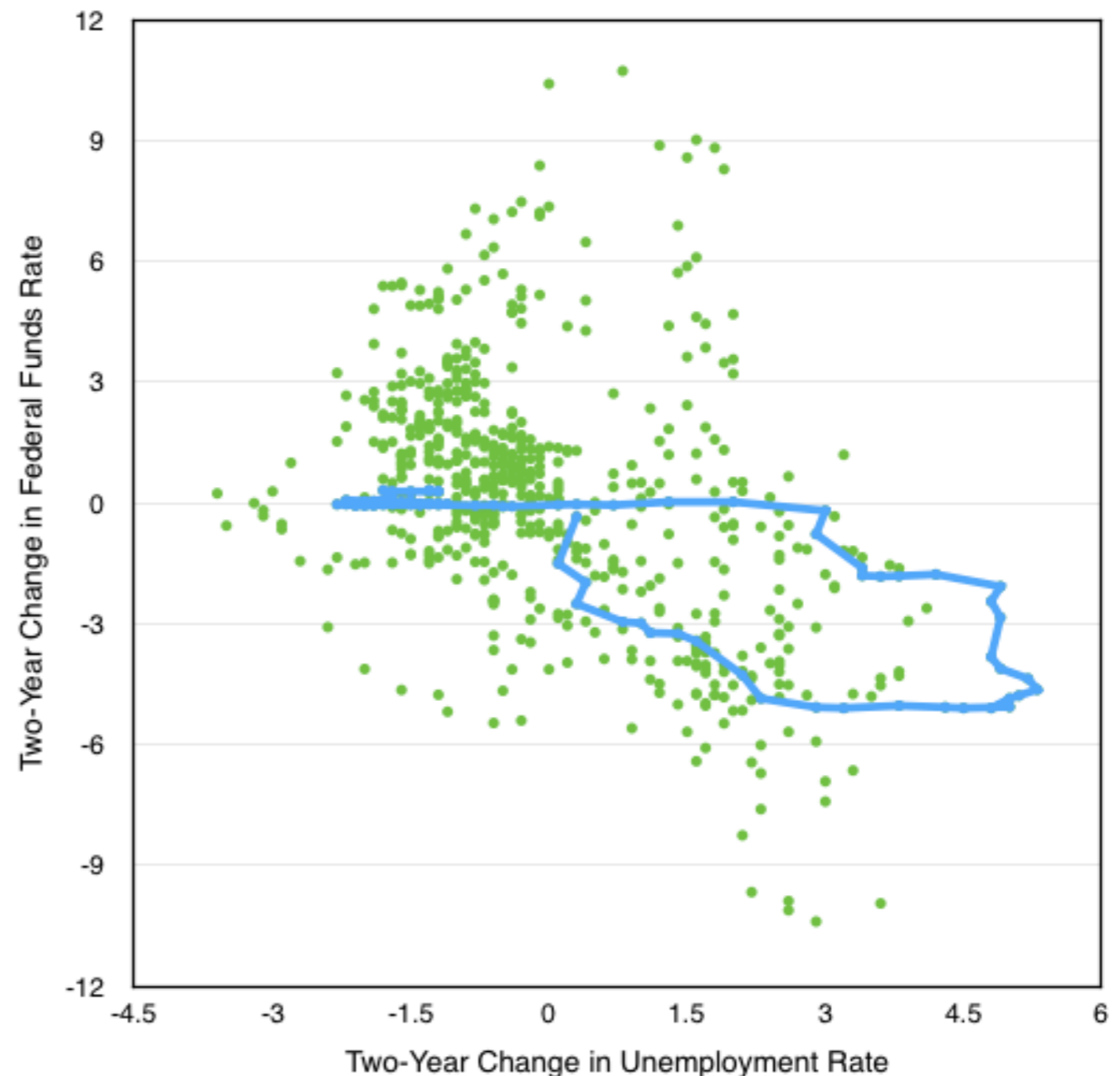
Two-Year Changes in Unemployment and Federal Funds Rates Starting 2007:7



# Post-2007 Crisis, Downturn, and Recovery

- Green dots: two-year changes in Fed Funds rate and in unemployment rate
- Blue line: starting 2007:7.
  - Fed Funds rate drops half as much per unit rise in unemployment as it had post-1979 or post-1974...
  - The zero lower bound, of course...
  - Thereafter no move to raise interest rates above the ZLB until last December
    - The mass of the scatter tells us that this non-raising is *unusual*...
    - How are we to assess this forbearance?

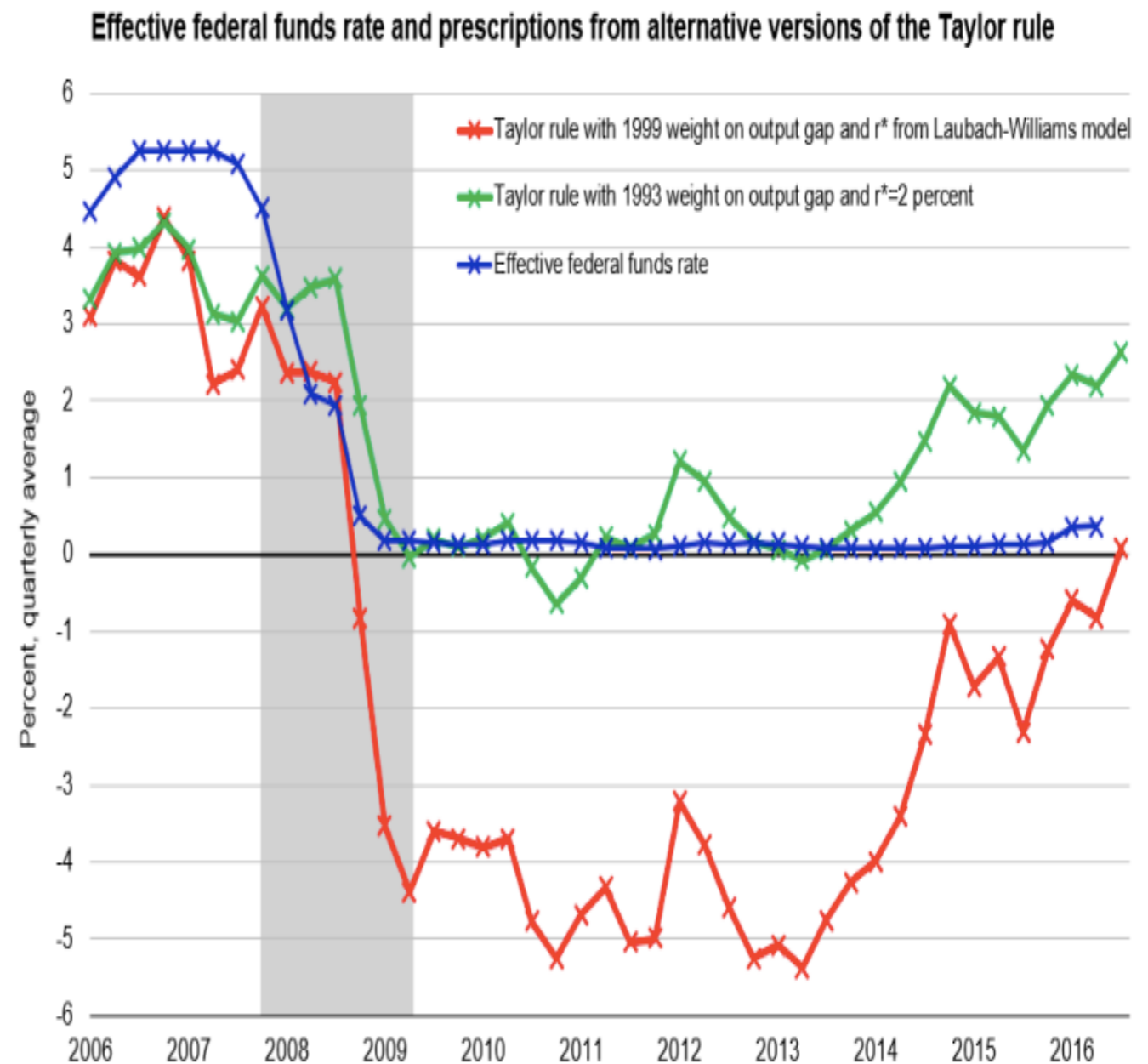
Two-Year Changes in Unemployment and Federal Funds Rates Starting 2007:7





# Since 2008, However, the Slope of the Reaction Function Really Matters

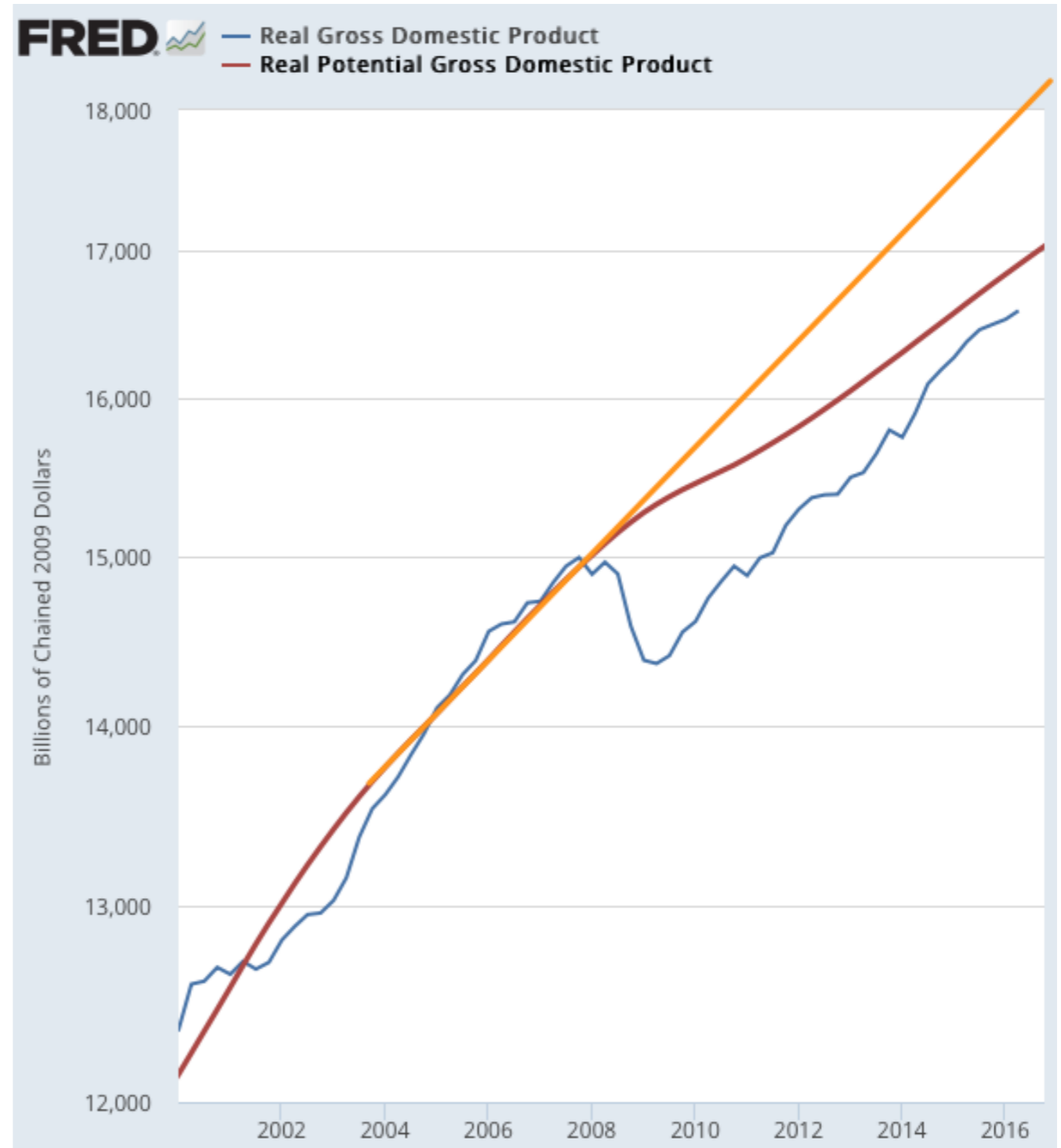
- Taylor (1993); Henderson and McKibben (1993)
- Which version?
  - Taylor (1993)? (0.25 on  $u-u^*$ , 1.5 on  $\pi-\pi^*$ ,  $r^* = 2$ )
  - Taylor (1999) plus Laubach and Williams (2003)? (0.5 on  $u-u^*$ , 1.5 on  $\pi-\pi^*$ , LW  $r^*$ )



Note: Output gap is the percentage point difference between real GDP and the Congressional Budget Office's estimate of potential. Inflation measured by 4-quarter percent change in price index for personal consumption expenditures excluding food and energy (core PCE). Rules use first released estimates of GDP, core PCE inflation, and Laubach-Williams model estimates of  $r^*$ . Output gaps are constructed using CBO's most recent estimate of potential real GDP available at the time of the release. 2016:Q3 values based on nowcasts described on Taylor Rule Utility webpage.

# Where We Are

- Effectively: no recovery
- Convergence of unemployment rate to what we think of as equilibrium
  - But very rash to say the same of employment-to-population ratios
- Not convergence of output to potential
- Rather convergence of potential to output via hysteresis
  - Even buying the post-2003 end of the “new” high-tech high-productivity growth economy...



# What Should the Counterfactual Pre-2008 Monetary Policy Rule Have Been?

- What were we going to do should we hit the zero lower bound in a serious way?
  1. Don't: don't push inflation much below 5%:  
DeLong and Summers (1992)
  2. Don't worry, we won't: Reifschneider and Williams (1999)
  3. Keep buying bonds—eventually cash burns a hole in people's pockets: Friedman (1997)
  4. Helicopter money: Bernanke (2000)
  5. Credible Promises to Be Irresponsible:  
Krugman (1998)
  6. Bring fiscal policy back in

# (3) Unlimited Quantitative Easing

- Milton Friedman (1997):
  - “The Bank of Japan can buy government bonds on the open market. Most of the proceeds will end up in commercial banks, adding to their reserves and enabling them to expand...loans and open-market purchases. But whether they do so or not, the money supply will increase.... Higher money supply growth would have the same effect as always. After a year or so, the economy will expand more rapidly; output will grow, and after another delay, inflation will increase moderately...”
- *Money rather than the entire asset structure as the key to demand...*



# (4) Helicopter Money

- Ben Bernanke (2000):
  - “Contrary to the claims of at least some Japanese central bankers, monetary policy is far from impotent today in Japan.... One can make what amounts to an arbitrage argument —the most convincing type of argument in an economic context.... The monetary authorities can issue as much money as they like. Hence, if the price level were truly independent of money issuance, then the monetary authorities could use the money they create to acquire indefinite quantities of goods and assets. This is manifestly impossible in equilibrium. Therefore money issuance must ultimately raise the price level, even if nominal interest rates are bounded at zero. This is an elementary argument, but... quite corrosive of claims of monetary impotence...”
  - *But the price level is independent of money issuance if one raise the money supply via open market operations and the marginal dollar of cash is held as a savings vehicle...*

## (5) Credible Promises to Be Irresponsible

- Paul Krugman (1998):
  - “In a flexible price economy, the necessity of a negative real interest rate does not cause unemployment.... The economy deflates now in order to provide inflation later.... If the... nominal rate is zero, but the real rate needs to be negative,  $P$  falls below  $P^*$ .... This fall in the price level occurs regardless of the current money supply, because any excess money will simply be hoarded, rather than added to spending. At this point one has a version of the liquidity trap: money becomes irrelevant at the margin...”
  - *Good monetary policy generates the inflation that a flex-price economy would generate automatically...*

# Lessons?

- If independent central banks are going to retain primary responsibility for macroeconomic stabilization in a world in which shocks like 2007-2009 are not unthinkable:
  - They need more and better tools to do the job...
- If fiscal policy is to step up and reassume its stabilization policy role:
  - Fiscal institutions really need to step up their technocratic game...
- If we are to rely on prudential regulation to avoid shocks like 2007-2009
  - Good luck
  - As Minsky pointed out, the same currents of thought that lead financiers to generate systemic risk keep regulators from being able to see and control it *ex ante*...
  - The fact that regulators and speculators share a Foucaultian épistème makes this a Sisyphean task
  - Looking at the configuration of asset prices and the current size of the equity premium, it is difficult to argue that a very sharp curb on forms of risk bearing is the right answer...