Discussion of:

The Forward Guidance Puzzle

by Del Negro, Giannoni and Patterson

Jón Steinsson

Columbia University

October 2015

Three Parts

- Empirical investigation of three forward guidance announcements
  - Aug 2011 ("mid-2013"), Jan 2012 ("late 2014"), Sep 2012 ("mid 2015")
  - Seek to control for "Delphic" component of shock
- Forward guidance in standard medium-scale DSGE model
  - Effects on contemporaneous outcomes implausibly large
  - "Forward guidance puzzle"
- Propose a resolution to the puzzle:
  - Blandard-Yaari perpetual youth model
  - Makes model less forward looking

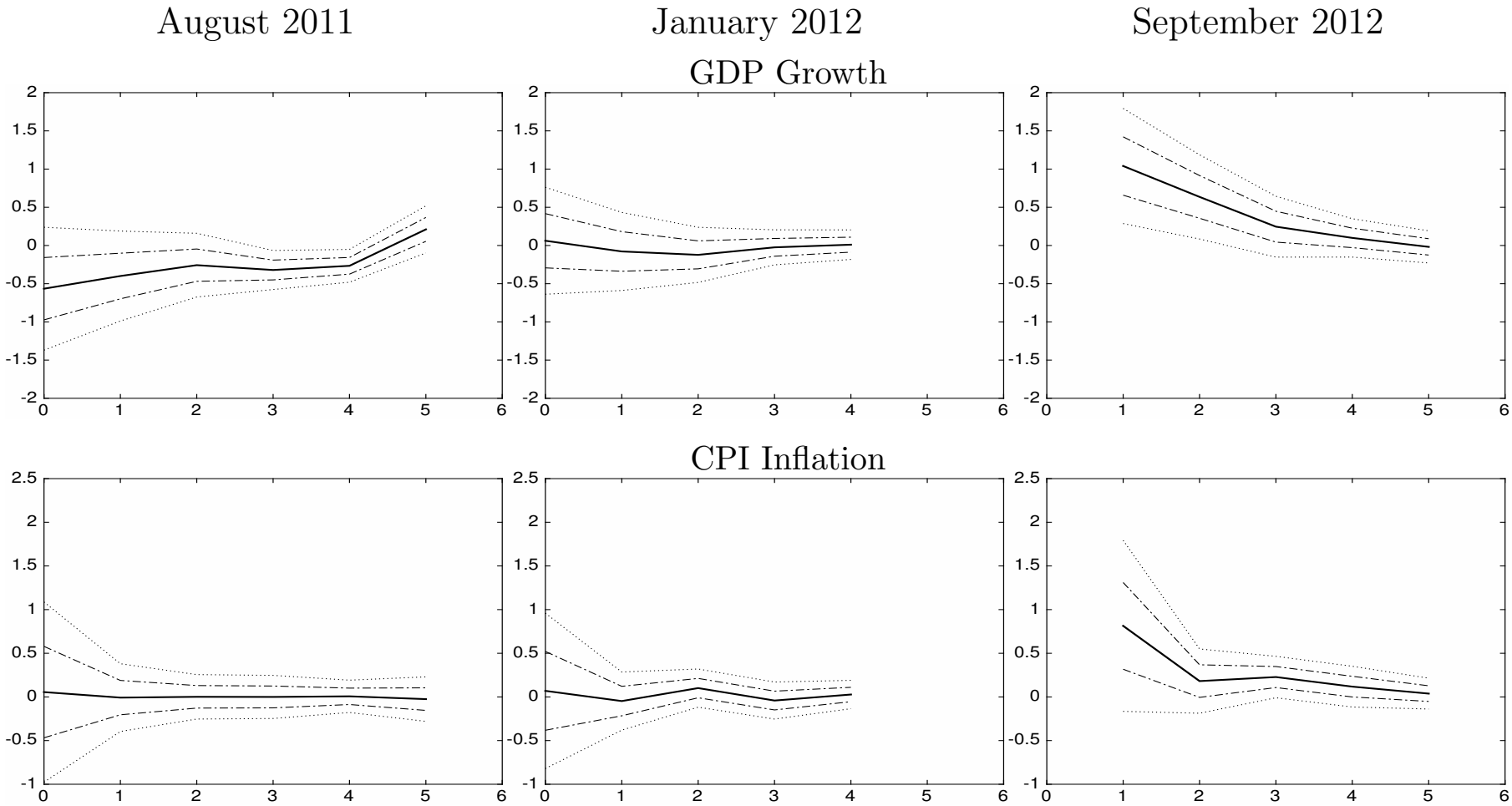
PART I
The Tale of Three Forward Guidance Announcements

Information Content of Announcements

Monetary announcements may convey information about:

- Future monetary policy
  - News about future path of interest rates conditional on unchanged beliefs about other fundamentals
  - "Conventional" view or "Odyssean" forward guidance
- Future path of fundamentals
  - Evidence: Campell et al. 12, Nakamura-Steinsson 15
  - "Delphic" forward guidance

Furthermore, different monetary announcements may contain a different mix


August 2011
January 2012
September 2012
GDP Growth
CPI Inflation

Identification Issue

- To estimate effects of "pure" forward guidance ...

  (i.e., "Odyssean" part only)

  ... must control for news about other fundamentals

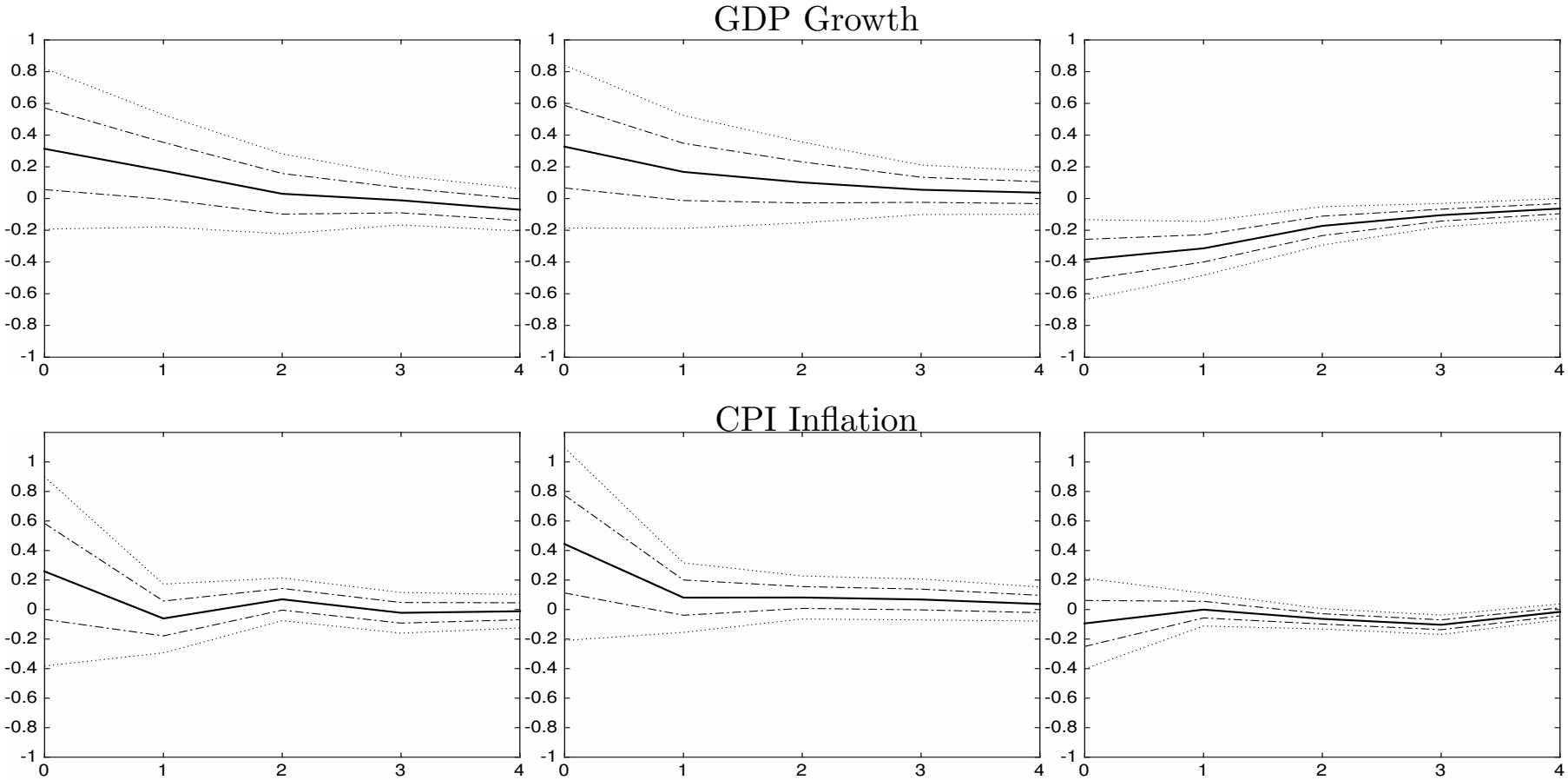
  (i.e., "Delphic" part) and QE

Isolate Effect of News about Interest Rates

- Same as before expect different characterization of policy:

$$\Delta f_{it} = \beta_1 POLICY_t + \beta_2 X_{it} + \epsilon_{it}$$

- Policy includes:
  - Dummy for forward guidance announcement
  - Dummy for QE announcement
  - Dummy for QE continuation announcement
  - Measure of output language
  - Measure of inflation language


Forward Guidance
QE Announcement
Bad Output Language
GDP Growth
CPI Inflation

Measuring the Language

- Very innovative and interesting!
- Next steps:
  - Unexpected versus expected language
  - Unexpected versus expected QE
  - More sophisticated measure of forward guidance

PART II
Forward Guidance in a Standard Medium-Scale DSGE Model

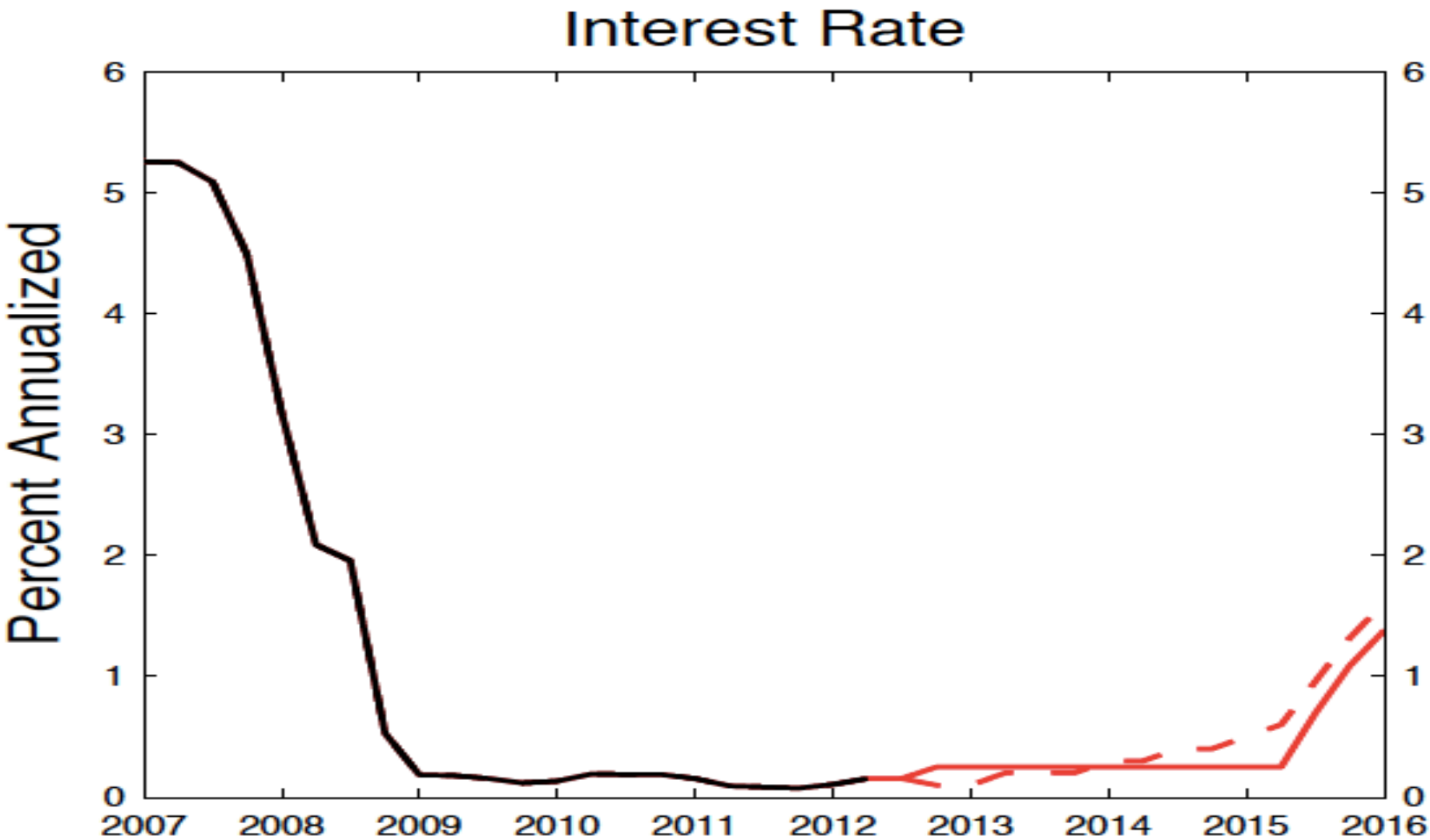
Establishing the Puzzle

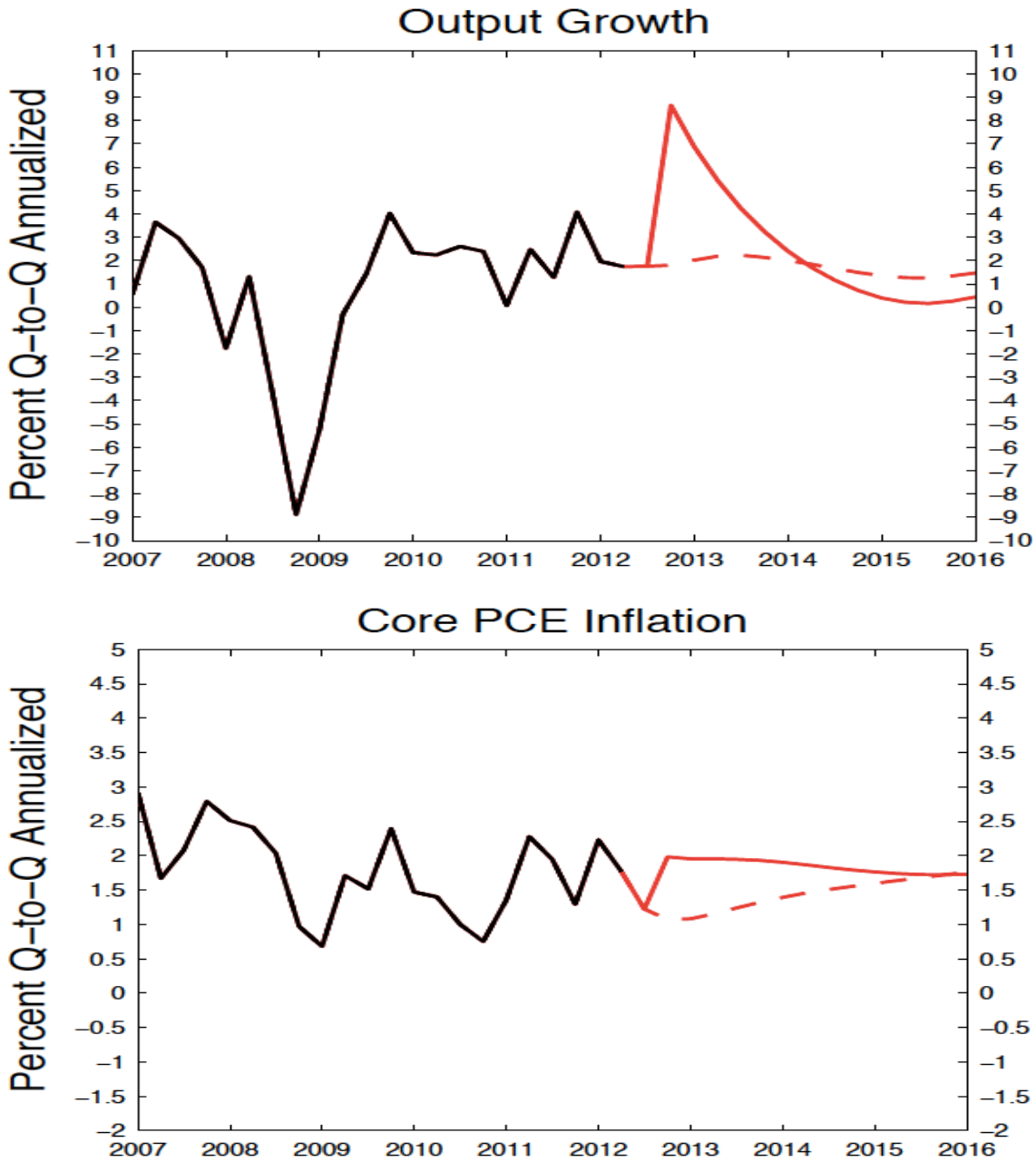
- This section – originally circulated in 2012 – among first papers to

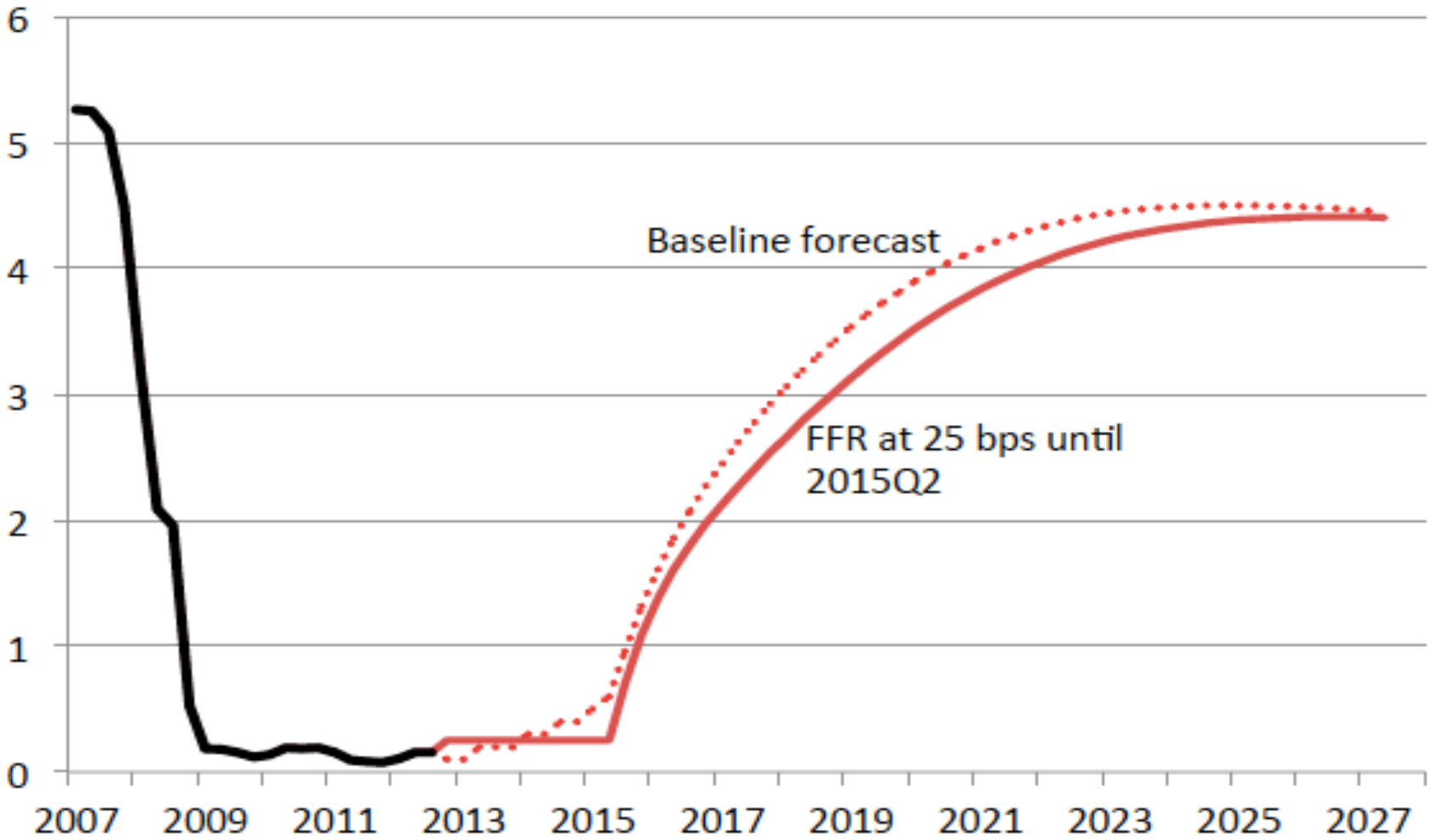
  draw attention to immense power of forward guidance

  (see also Carlstrom, Furst, and Paustian, 2012; Kiley, 2012)
- Conduct policy experiments in FRBNY DSGE model
  - Similar to Christiano-Eichenbaum-Evans 05, Smets-Wouters 07
  - Includes credit frictions as in Christiano-Motto-Rostagno 09
- Policy experiment:
  - Starting from baseline forecast about nominal rates

    (inferred from forwards)
  - Hold nominal rate at 25bp until mid-2015


Interest Rate
Percent Annualized
6
5
4
3
2
1
0
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016


Output Growth
Percent Q–to–Q Annualized
11
10
9
8
7
6
5
4
3
2
1
0
–1
–2
–3
–4
–5
–6
–7
–8
–9
–10
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
Core PCE Inflation
Percent Q–to–Q Annualized
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
–0.5
–1
–1.5
–2
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016


6
5
4
3
2
1
0
2007
2009
2011
2013
2015
2017
2019
2021
2023
2025
2027
Baseline forecast
FFR at 25 bps until
2015Q2

Effects of Forward Guidance

- Very, very persistent fall in nominal rates
- 10-year yield falls more than 5-year yield!!
- How can this be?

Effects of Forward Guidance

- Forward guidance shock reveals:
  - Huge response to far future changes in interest rates
  - Model has very persistent oscillatory dynamics
- Oscillatory dynamics imply that small stimulus over 10 quarters creates large recession five years later
  (not just FRBNY model also SW 07 model)
- Valuable insight about models we use!!
- Not a desirable feature?!?

PART III
The Puzzle Resolved

Why Does It Work?

- Shrinks coefficients on forward-looking terms in all equations
- Makes model less forward looking
- For example in the price Phillips curve (ignoring indexation):

$$\pi_t = \tilde{\beta} E_t \pi_{t+1} + \kappa mc_t$$

where $\tilde{\beta} = \eta\beta$ and $\eta < 1$. So, $\tilde{\beta} < \beta$.

Table 2. Implied Coefficients for Alternative Death Probabilities

Death probability	p	0	0.03	0.06
Implied coefficients				
Discounting in consumption	η	1	0.987	0.960
Discounting in investment	$\tilde{\beta}/(1+\tilde{\beta})$	0.500	0.496	0.490
Discounting in price inflation	$\tilde{\beta}/(1+\iota_p\tilde{\beta})$	0.817	0.809	0.791
Discounting in real wage	$\tilde{\beta}/(1+\tilde{\beta})$	0.500	0.496	0.490
Slope of Phillips Curve	κ	0.022	0.022	0.024

But Isn't this the Interest Rate?

- The β in front of $E_t\pi_{t+1}$ due to firm discounting of future profits.
- So, really, it is one-over the gross interest rate
- In the standard model

$$(1+r)^{-1} = \beta$$

- In the perpetual youth model (ignoring steady state inflation and growth)

$$(1+r)^{-1} = \tilde{\beta} = \eta\beta$$

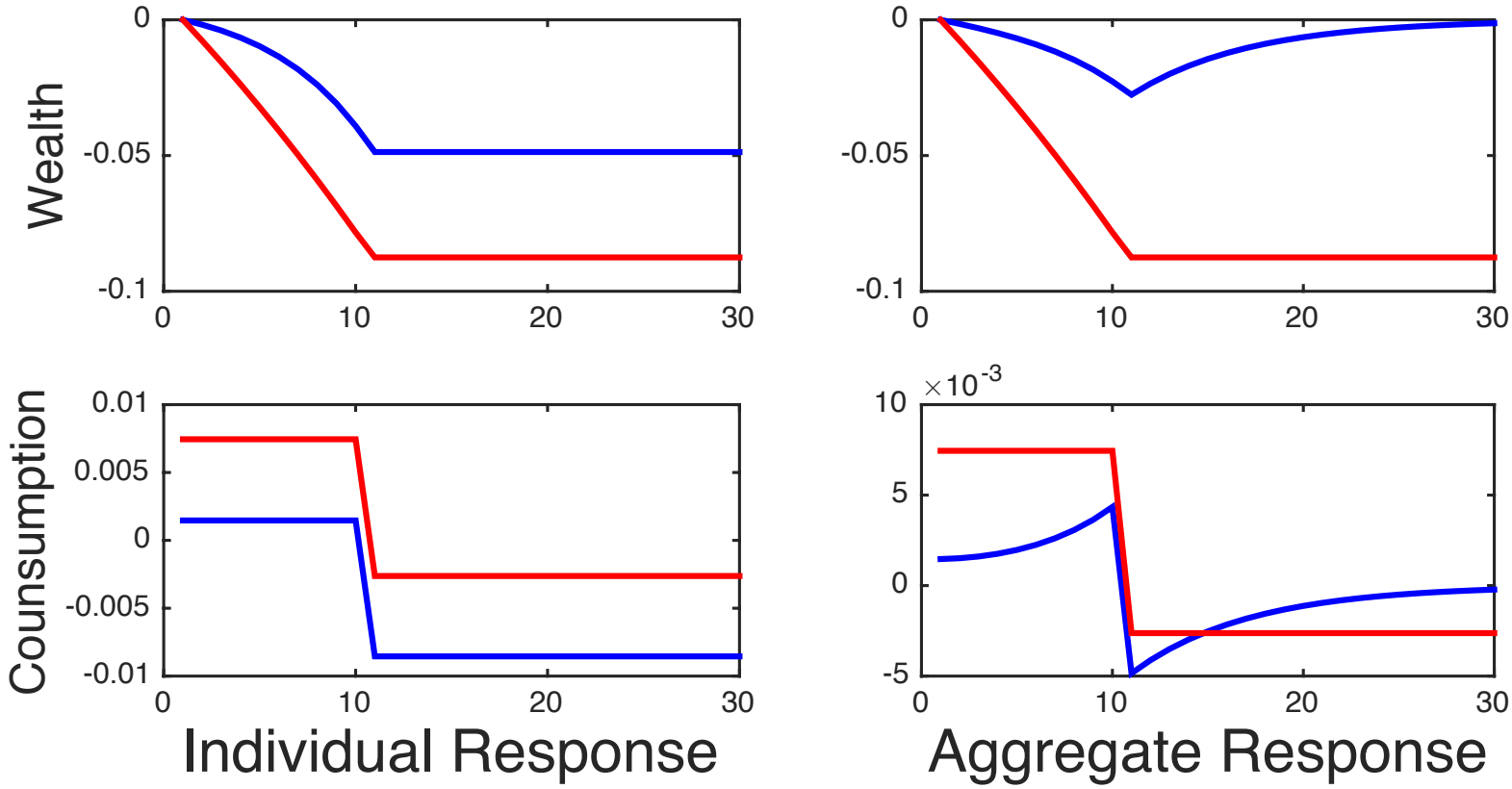
- So, again, it is one-over the gross interest rate that shows up as coefficient on $E_t\pi_{t+1}$

But Isn't this the Interest Rate?

- Interest rate to calibrate to is the same no matter what p is
- $\tilde{\beta}$ should be calibrated to match interest rate and not vary with p (β should vary with p to match interest rate)
- In this case, "forward-lookingness" of all equations except consumption Euler equation will be unaffected by perpetual youth stuff

- What is left is less forward-looking consumption Euler equation

Figure 7: Forward Guidance in a Blanchard-Yaari Model: Individual vs. Aggregate Response



Notes: The figure shows impulse response functions to an anticipated drop in interest rates 10 quarters in the future. The red line shows the simulation with $p = 0.0001$ and the blue line shows the impulse responses with $p = 0.15$.

Conclusion

- Very nice paper!!
- I could go on for an hour about it!