Forward Guidance under Disagreement

Evidence from the Fed's Dot Projections

Gunda-Alexandra Detmers

Magyar Nemzeti Bank

October 2017

Disclaimer: The views expressed in this paper are those of the author and do not necessarily reflect those of the MNB.

Expectations Management of Central Banks

- Overall trend towards **more transparency** in central banking and policy rate guidance.
- before the crisis / ZLB: central banks reluctant to publish **interest rate forecasts** at all (some exceptions, e.g. NZ (1997), NO (2005), SW (2007) ...)
- since crisis / ZLB: increased issuance of forward guidance as an **unconventional monetary policy** tool.
- Forward guidance since then typically conveys a **commitment** ("Odyssean Forward Guidance", see Campbell et al. (2012))

Cons = Pros ?

Concerns about quantitative interest rate projections in normal times were

- a potential crowding-out of private information (Morris/Shin, 2002)
- a misinterpretation as commitment. (Kohn, 2005; Issing 2005)

Yet, Odyssean forward guidance

- serves as commitment and
- consequently should crowd out other information?

Pros & Cons of Commitment

Pros:

- effective tool in steering expectations if
  - central bank is credible
  - standard monetary policy measures are not effective (zlb)

Cons:

- less flexibility – time-inconsistency problem
- risk of losing credibility
- overshooting (yet, standard monetary policy tools again effective)

credible commitment might crowd out other signals: *good or bad?*

Forward Guidance at the Fed since December 2008

Dec 16, 2008	low levels of the federal funds rate “for some time".
March 18, 2009	“an extended period of time".
Aug 9, 2011	**Date-based** forward guidance Aug 9, 11: “at least through mid-2013" Jan 25, 12: “at least through late-2014" Sep 13, 12: “at least through mid-2015"
Jan 25, 2012	Publication of **dot projections** revealing the disagreement among FOMC participants
Dec 12, 2012	**State-based** forward guidance (linked to the actual unemployment rate and inflation projections)
March 19, 2014	Extension of time horizon of forward guidance; low interest rate levels **even after employment and inflation are near mandate-consistent levels**

The role of Disagreement

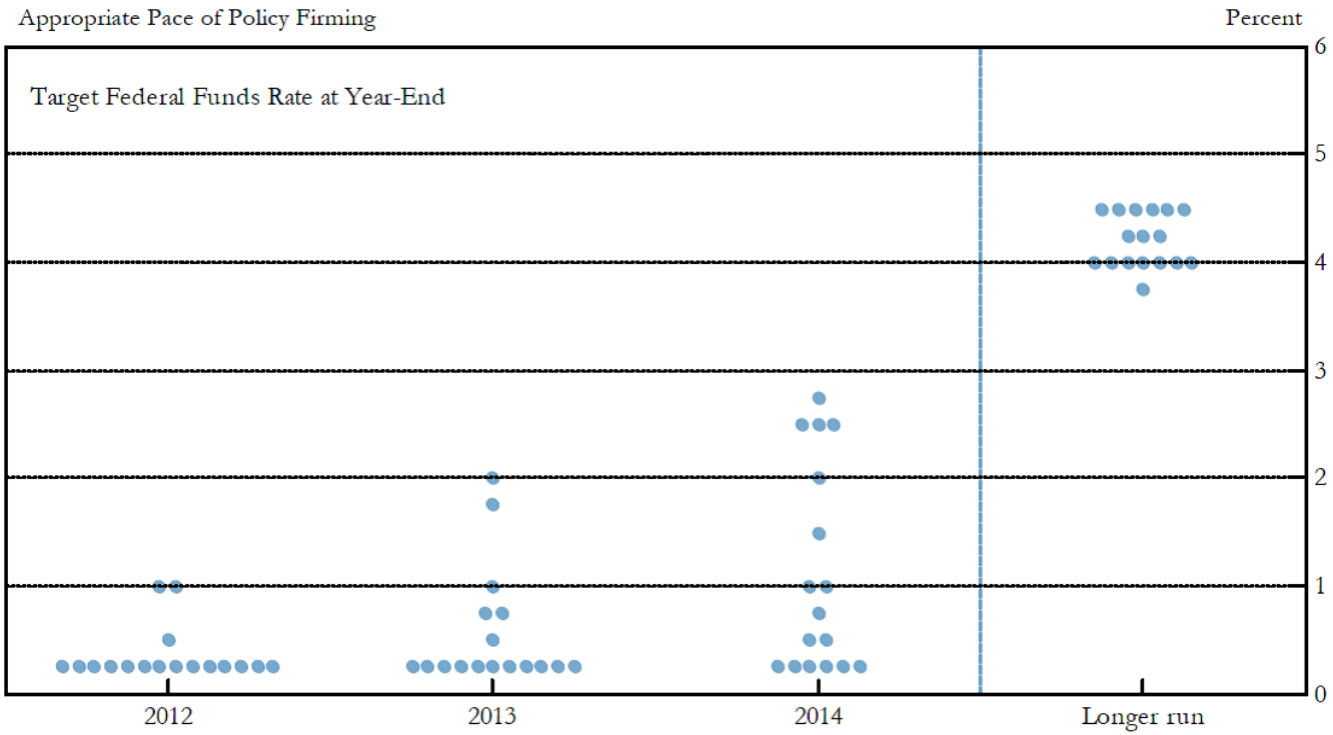
What if policymakers disagree and this disagreement becomes publicly known? *(through dot projections)*

- detrimental effects on credibility
- detrimental effects on forward guidance

+ dot projections might increase the public understanding of monetary policy decisions (together with other macro projections)
+ disagreement might help to forecast monetary policy decisions (Gerlach-Kristen, 2004; Riboni and Ruge-Murcia, 2014)
+ disagreement might prepare markets for different outcomes

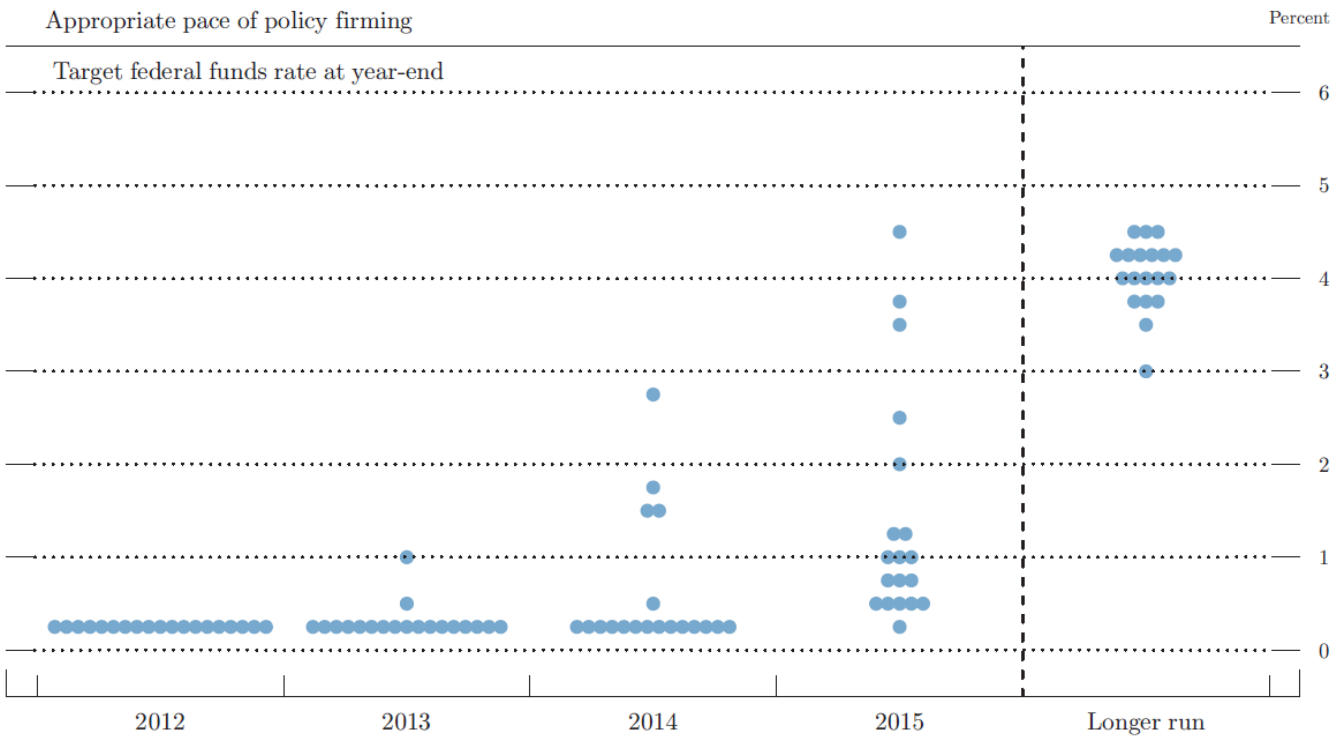
FOMC's dot projections - Disagreement

FOMC participants' assessments of appropriate monetary policy issued on January 25, 2012



FOMC's dot projections - Disagreement

FOMC participants' assessments of appropriate monetary policy issued on December 12, 2012



FOMC's dot projections - Disagreement

- less disagreement in the very short-run and in the longer-run (policymakers have the same steady state in mind)

How does disagreement among FOMC members affect the sensitivity to macroeconomic news?

- if disagreement is high, forward guidance should lose information content and markets should be more attentive to macro news?
- Does the effect differ under date- and state-based forward guidance?

This paper

investigates

- the impact of **date- and state-based forward guidance**
- the influence of **disagreement** on the forward guidance strategy

by measuring the effects on interest rates' sensitivity to macroeconomic news.

contributes to:

- literature on forward guidance and interest rates' sensitivity to macroeconomic news (Gürkaynak et al., 2005, Swanson and Williams, 2014, Raskin, 2013, Moessner and Nelson, 2008)
- literature on disagreement / central bank transparency (e.g. Ehrmann and Fratzscher, 2013)

The Sensitivity of Interest Rates to Macroeconomic News

- macroeconomic models suggest that there is no persistent effect of macroeconomic news on interest rates along the yield curve
- Yet, Gürkaynak et al. (2005) find responsiveness of interest rates to macroeconomic surprises
- Use sensitivity in order to investigate the role of a public signal as the central bank's forward guidance.
  - Does forward guidance crowd out other information?
  - How does disagreement affect this?

Forward Guidance and macroeconomic news

- Moessner and Nelson (2008) find **increased responsiveness** of futures rates to macroeconomic surprises from Aug '2003 - Dec '2005

  $\rightarrow$ market participants not inattentive to other developments

- Swanson and Williams (2014) find **decreased responsiveness** of Treasury yields to macroeconomic surprises at short end of yield curve from Aug '2011 - Dec '2012.

  $\rightarrow$ macroeconomic news matter less during *date-based forward guidance* at the zero lower bound

Date- and State-based Forward Guidance

= Odyssean Forward Guidance (Campbell et al., 2012)

= commitment character

Date-based Forward Guidance

= unconditional forward guidance

- Yet, FOMC raises concerns that it might be seen as commitment.

State-based Forward Guidance

= conditional forward guidance

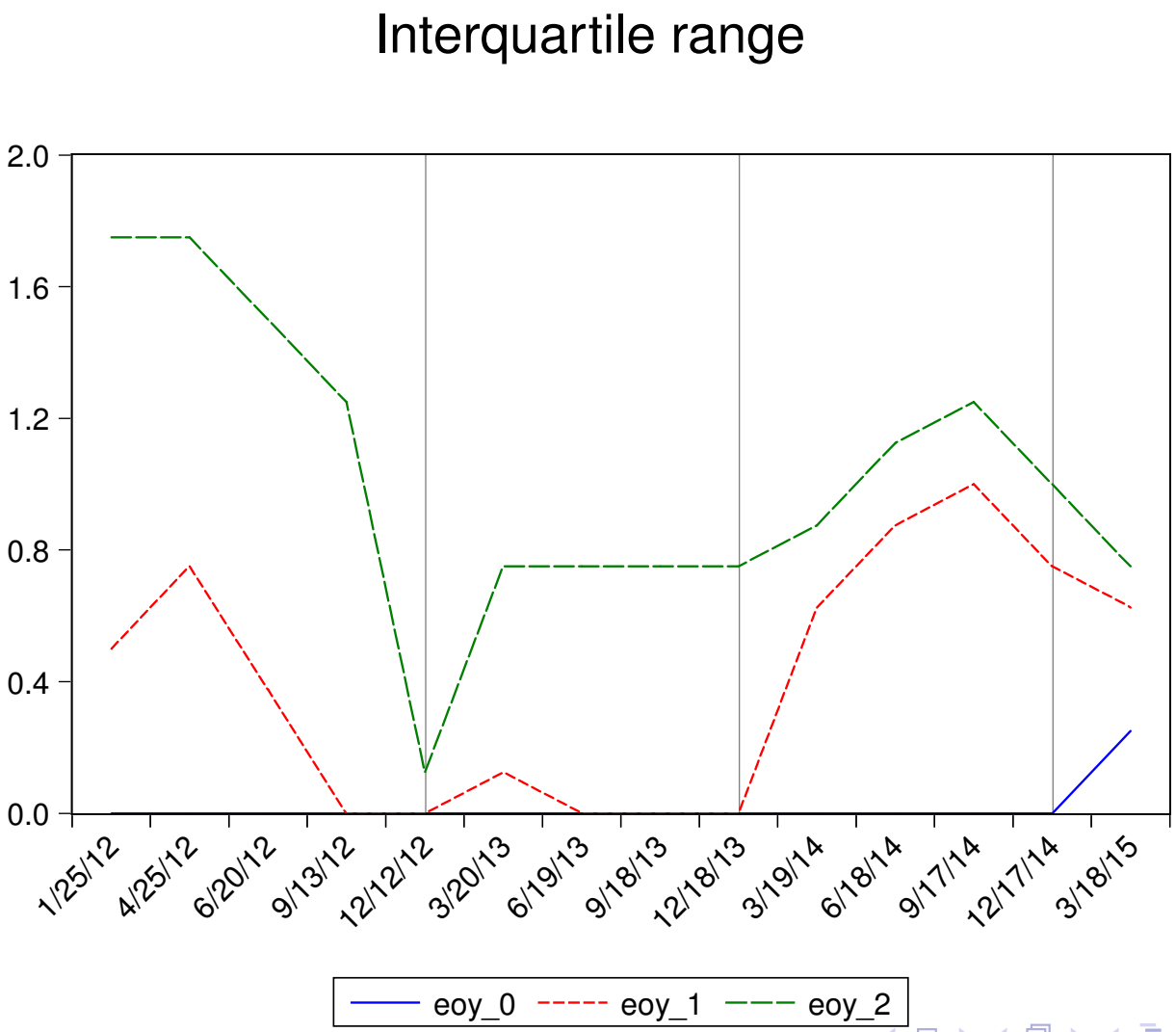
→ define *step dummies for sensitivity analysis*

Measuring Disagreement

How to measure disagreement?

- horizon
  - $\rightarrow$ eoy_1, eoy_2
    - not eoy_0 (December projection, zero disagreement); eoy_3 (only for some m.p. days)
- measure
  - $\rightarrow$ quantile-based measures, as interquartile range (Mankiw et al., 2004, Andrade et al., 2015)
    - results robust for range, std. dev.

Measuring Disagreement



Empirical model

Starting in Dec' 2008 (ZLB), I estimate

$$\Delta r_t^j = \alpha^j + \sum_k \beta^{k,j} s_t^k (1 + \gamma^{d,j} D_t^{date} + \gamma^{s,j} D_t^{state} + \delta^{d,j} DA_t \cdot D_t^{date} + \delta^{s,j} DA_t \cdot D_t^{state}) + \varepsilon_t^j$$

where

- r_t^j = treasury yields of maturities $j =$ 6 months and 1, 2, 3, 5, 10 years.
- s^k = macroeconomic surprises on output, labor and prices
- D_t^{date}, D_t^{state} = step dummies that equal 1 in the respective time periods
- DA_t = interquartile range of dot projections for end of next year published at every second monetary policy meeting

Response to macroeconomic news

- here: Dec 2008 - Aug 2011 as "reference" period

  $\rightarrow$ in SW (2014), this is already a period with less sensitivity.

- all maturities react to nonfarm payrolls and productivity index (in line with SW14, R13)

- only the longer maturities still react to a set of news (compare SW(2014), zero lower bound period)

Sensitivity under Disagreement

	$6M$	$1Y$	$2Y$	$3Y$	$5Y$	$10Y$
γ^d	-0.82***	-0.86***	-0.97***	-0.89***	-0.82***	-0.72***
	(0.13)	(0.05)	(0.02)	(0.04)	(0.08)	(0.18)
γ^s	-1.63***	-0.79***	-0.64***	-0.24	0.19	0.53
	(0.37)	(0.12)	(0.21)	(0.34)	(0.43)	(0.47)
δ^d	1.21	0.06	0.40**	0.92**	2.14***	4.12***
	(0.83)	(0.20)	(0.18)	(0.42)	(0.80)	(1.33)
δ^s	0.99	0.51	1.02**	1.21*	0.64	0.17
	(0.60)	(0.49)	(0.48)	(0.63)	(0.56)	(0.56)

Notes: Estimates from Equation (2). Sample covers announcement days from December 16, 2008 until March 31, 2015. Newey-West standard errors in parentheses; *** (**) (*) statistical significance at 1% (5%) (10%) -level.

Decreased sensitivity during forward guidance periods ($DA = 0$)

If there is no disagreement, I find decreased sensitivity of Treasury yields to macroeconomic news during both forward guidance periods:

- **date-based** forward guidance $\rightarrow$ whole yield curve, **state-based** $\rightarrow$ up to 2Y
- credible commitment $\rightarrow$ forward guidance as **focal point**, crowding-out of other information
- date-based forward guidance matters for a longer horizon than state-based forward guidance $\rightarrow$ **different strength** of guidance leads to different sensitivity

Sensitivity under Disagreement ($DA \neq 0$)

- disagreement does not affect forward guidance at **short maturities** (up to 1Y) $\rightarrow$ markets seem to see current policy rate as guaranteed
- for **longer horizons**: if FOMC disagreement is high $\rightarrow$ markets are again more attentive to macroeconomic news
- forward guidance then loses its information content, other macroeconomic news become more important $\rightarrow$ **disagreement restores sensitivity**
- the effect is less pronounced for **state-based forward guidance**

Robustness checks

Results are robust to

- the chosen measure (interquartile range, range, std. dev.)
- the horizon (eoy_1, eoy_2)
- the inclusion of an uncertainty index

The results are especially pronounced for **surprises that are expected to result in a rise** in interest rates, in line with Swanson and Williams (2014).

Conclusion

1. Credible forward guidance with **commitment** $\rightarrow$ decreased sensitivity of treasury yields to macro surprises.
2. Stronger effect under date-based forward guidance due to its **unconditional** nature.
3. Sensitivity to macroeconomic news increases with level of **disagreement** $\rightarrow$ forward guidance loses its information content, other macroeconomic news become more important.
4. If **no disagreement** $\rightarrow$ unconditional forward guidance affects whole yield curve.
5. Promise of low interest rate (from date-based FG) is seen as **guaranteed** for up to 1Y.
6. For **state-based FG**, disagreement is less detrimental.

Conclusion

Date-based forward guidance was perceived as

- **credible commitment** that brought down interest rates along the yield curve.

Dot projections (disagreement) and transition to state-based forward guidance

- were effective tools to regain **flexibility** as markets become again attentive to other macroeconomic developments.