Central bank communication and the role of forward guidance

ECB Central Banking Seminar
Frankfurt am Main, 3 July 2019

The views expressed in this presentation are those of the presenter and do not necessarily reflect those of the ECB or the Eurosystem.
Why central bank communication?

1. Communication *about* a given policy
   - Accountability: especially relevant when the central bank resorts to unconventional (quasi-fiscal) measures
   - Transparency: explaining the rationale and the workings of new policy tools
   - Dependability: guiding expectations about the usage of new policy tools ("reaction function")

2. Communication *as a policy tool* itself
# Outline

1. Recent trends in monetary policy communication
   2. Effect of central bank communication?
   3. Forward guidance about policy rates
   4. Does the type of forward guidance matter?
   5. How does forward guidance interact with other sources of information?
Central banks have stepped up their communication efforts.

Since the crisis, the central bank has communicated with the public...

Source: Blinder et al. (2017) survey among central bank governors (55 responses) and academic economists (159 responses).
Governors: “In your view, did the crisis induce the central bank to communicate with the public more or less than it did prior to the crisis?”
Academics: “In your view, did your country’s central bank communicate with the public more or less during and after the crisis than it had before?”
Length and difficulty of language of ECB / FOMC statements

- Longer FOMC statements, more difficult language
- Relatively stable ECB introductory statements (more standardised)
## Outline

1. Recent trends in monetary policy communication
2. **Effect of central bank communication?**
   - Forward guidance about policy rates
3. Does the type of forward guidance matter?
4. How does forward guidance interact with other sources of information?
Why listen to central bank communication?

- (Policy decision)
- Central bank might have different information on the evolution of the economy
- Central bank has better information on its own thinking
- Central bank signals can act as coordination device
Precise news is better than no news … but what about vague news?

Channels:

1. Creating news
2. Reducing noise
Only sufficiently precise signals reduce uncertainty.

“Common” interpretation: (central bank) signals as coordination device (Morris and Shin AER 2002)

“Individual” interpretation: agents look for interpretation of others in market prices (Gaballo AEJM 2016)
**Outline**

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3. **Forward guidance about policy rates**
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Common types of forward guidance (FG)

- **Purely qualitative FG**
  E.g. ECB until Jan 2016: “we expect the key ECB interest rates to remain at present or lower levels for an extended period of time”

- **Time-contingent FG**
  E.g. current ECB guidance: “… expects the key ECB interest rates to remain at their present levels at least through the first half of 2020 …”

- **State-contingent FG**
  E.g. FOMC Dec 2012: policy rates appropriate “at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee’s 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored”
“Odyssean” FG
Commitment about future conduct of monetary policy

- Large effects on private sector expectations (but: “forward guidance puzzle”)
- Requires credibility
- State-contingent
- No sizable inflation overshoot

“Delphic” FG
Guidance about the likely future course of monetary policy

- Smaller effects; inflation undershoots target substantially and for extended period of time
- Can be counter-productive if taken as signal that economy is performing poorly (Campbell, Evans, Fisher and Justiniano BPEA 2012)
Forward guidance has been more widespread since the crisis.

Forward guidance as policy tool to
• Provide additional accommodation (at the lower bound)
• Anchor **expectations**, e.g. about policy rates
• Reduce **uncertainty**, e.g. about policy rates

Ongoing discussions:
• Forward guidance puzzle
  (Del Negro, Giannoni, and Patterson, 2015)
• Critical views (Poloz 2014)
• **How to implement forward guidance?**
  – Does of form of FG matter, e.g. its strength (or horizon)?
  – Can more public information be detrimental
    (Amador and Weill, JEP 2010)?
Views on the preferable type of forward guidance vary widely.

Preferred types of forward guidance in the future

Source: Blinder et al. (2017) survey among central bank governors (55 responses) and academic economists (159 responses).

“In the future, which type(s) of forward guidance do you believe would be most effective for your central bank?”
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| 3 | Forward guidance about policy rates           |
| 4 | **Does the type of forward guidance matter?** |
| 5 | How does forward guidance interact with other sources of information? |
Does the type of forward guidance (FG) matter?

- FG affects expectations about future policy rates (Swanson and Williams 2014, Feroli et al. 2017)

- Test whether the type of FG matters for uncertainty.
  - Open-ended FG (e.g. “for an extended period”)
  - State-contingent FG
  - Time-contingent FG: short vs. long horizon

- Cross-country FG experience allows studying how the FG effect varies with the type implemented
- Does the type of FG matter for the responsiveness of bond yields to surprises in macroeconomic indicators?
Asset Price Reaction to a News Announcement in an Efficient Market

-3 -2 -1 0 +1 +2 +3

Efficient market

Release time of announcement

reaction to surprise (= announcement minus expectation)

bond price

time relative to announcement release
But markets might be inefficient ...

![Graph showing bond price over time relative to announcement release. The graph includes labels for release time of announcement, delayed response, overreaction with reversion, and efficient market.](image-url)
The price reaction to a surprise is measured by the change during the announcement window.
Our approach: differentiate across types of FG

- Surprises in macroeconomic announcements from Bloomberg survey
- Effect of news on daily change of two-year government bond yields
- Advanced economies, periods with policy rates at or below 1%
- Identification via changes in FG

If FG credible, we expect:

- No responsiveness under open-ended and long-horizon time-contingent FG
- Lower responsiveness under state-contingent FG, possibly under short-horizon time-contingent FG
- Credibility strengthened in presence of an APP (Eggertsson & Woodford BREA 2003)
Response of bond yields varies by FG type.

\[ \Delta R_t^{c,i} = \alpha^{c,i} + \alpha_{SG} S_G^c + \alpha_{OG} O_G^c + \alpha_{LTG} L_T G_t^c + \alpha_{STG} S_T G_t^c + \beta s_t^{c,i} + \beta_{SG} S_G^c s_t^{c,i} + \beta_{OG} O_G^c s_t^{c,i} + \beta_{LTG} L_T G_t^c s_t^{c,i} + \beta_{STG} S_T G_t^c s_t^{c,i} + \varepsilon_t^{c,i} \]

<table>
<thead>
<tr>
<th>(surprise impact)</th>
<th>Overall</th>
<th>APP in place</th>
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</thead>
<tbody>
<tr>
<td>Time-contingent FG, &lt;1.5years</td>
<td>1.25***</td>
<td>0.25</td>
</tr>
<tr>
<td>Open-ended FG</td>
<td>0.44**</td>
<td>0.51*</td>
</tr>
<tr>
<td>No FG</td>
<td>0.41**</td>
<td>0.41**</td>
</tr>
<tr>
<td>State-contingent FG</td>
<td>0.22*</td>
<td>0.22*</td>
</tr>
<tr>
<td>Time-contingent FG, ≥1.5years</td>
<td>0.08</td>
<td>0.05</td>
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Bond yields respond to macroeconomic surprises …

- **less** under state-contingent FG and long-horizon FG.
- unchanged under open-ended FG.
- **more** under short-horizon FG in absence of APP.
Earlier literature: Reduced disagreement across forecasters shown by Andrade et al. (2015)

Our approach: differentiate across types of FG

- Effect on interdecile range of one-year ahead forecasts of three-month rates in Consensus Economics
- Advanced economies, periods with policy rates at or below 1%

If FG credible, we expect:

- Lower disagreement across forecasters
- Credibility strengthened in the presence of an APP
Response of disagreement across forecasters varies by FG type.

\[ \Omega_{t}^{c,i} = \alpha^{c,i} + \alpha_t + \alpha_{SG}SG_t^c + \alpha_{OG}OG_t^c + \alpha_{LTG}LTG_t^c + \alpha_{STG}STG_t^c + \varepsilon_t^{c,i} \]

<table>
<thead>
<tr>
<th></th>
<th>Overall</th>
<th>APP in place</th>
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<tbody>
<tr>
<td>( \bar{\Omega} )</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>State-contingent</td>
<td>-0.27***</td>
<td>-0.39***</td>
</tr>
<tr>
<td>Open-ended</td>
<td>-0.10</td>
<td>-0.29***</td>
</tr>
<tr>
<td>Time-contingent, long horizon</td>
<td>-0.57***</td>
<td>-0.88***</td>
</tr>
<tr>
<td>Time-contingent, short horizon</td>
<td>0.01</td>
<td>-0.26**</td>
</tr>
</tbody>
</table>

Disagreement (one-year-ahead forecasts of three-month rates) is …

– eliminated under long-horizon FG; halved under state-contingent FG,
– not affected from open-ended FG and short-horizon FG,
– with APP reduced for all types of FG,
– without APP increased under short-horizon FG.
• **Short-horizon** and **open-ended** FG seem to have little (or perverse) effects

• **Long-horizon** FG seems more effective

• All types of FG strengthened in the presence of an **APP**

• **State-contingent** FG
  – Preserves market responsiveness, lowers disagreement
  – Consistent with central bank’s own uncertainty and provides more flexibility
  – Caveats: time inconsistency, credibility requirement, trade-off between simplicity and accuracy/robustness of state contingency
Outline

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Empirical Observations:

- **Short-term** forward guidance can have **unintended effects**. It can increase
  - response of bond yields to macroeconomic news
  - forecaster disagreement
- Less likely in presence of an APP
  (ECB discussion paper #2080, 2017)

Possible Mechanism: Individuals combine information from public and private signals with information from market prices.

- **Opposing effects:**
  - Reduction of uncertainty by central bank
  - Crowding out of collective private information
- Short-term guidance can **inhibit learning from prices**.
  (ECB working paper #2263, 2019)
The market price is a signal in itself. It aggregates private information.

Signals about the state of the economy

private signal A

private signal B

public signal

price
Forward guidance lowers the precision of the market price signal.

**Precision of Signals**

- **price**
- **public**
- **private**

Stronger forward guidance

- **No FG**
- **Short-horizon FG**
- **Long-horizon FG**
Under weak / short-horizon forward guidance, agents rely more on public news.

**Responsiveness of bond yields to (public) news**

- **Model Prediction**
- **Empirical Observation**

<table>
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<tr>
<th>Type of Forward Guidance</th>
<th>Model Prediction</th>
<th>Empirical Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>&lt;1.5 yrs</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>&gt;1.5 yrs</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Stronger forward guidance
Weak forward guidance barely reduces overall disagreement.

**Overall Disagreement**

![Graph showing overall disagreement decreasing with stronger forward guidance](image)
Forward guidance has a strong effect on ex-post uncertainty.

**Uncertainty**
(variance of forecast error across individuals)

1. Uncertainty depends **nonlinearly** on guidance horizon.
2. Effect of a change in guidance horizon depends on horizon of guidance already in place.
3. Marginally extending a short guidance horizon may fail to reduce uncertainty.
1) **Effect of FG is nonlinear in the strength** of guidance.
   - Short-horizon time-contingent FG can elevate uncertainty (relative to no FG),
   - But long-horizon time-contingent FG cements expectations

2) **Rational expectations in presence of noisy market information** explain how weak FG can raise responsiveness to news.
   - Public and private signals on fundamentals become relatively more informative
   - Agents react less to market prices
Key takeaways

• Effect of forward guidance depends on its strength
  – and therefore differs by FG-type
    (e.g. no effect of open-ended FG on news responsiveness)

• Agents combine private, public, and price signals
  – Effect of change in FG depends on strength of guidance already in place

• Role for clear central bank communication
  – Noisy central bank signals can exacerbate uncertainty
ECB Working Papers

#2080
Günter Coenen, Michael Ehrmann, Gaetano Gaballo, Peter Hoffmann, Anton Nakov, Stefano Nardelli, Eric Persson, Georg Strasser: “Communication of monetary policy in unconventional times”, 2017

#2263
Michael Ehrmann, Gaetano Gaballo, Peter Hoffmann, Georg Strasser: “Can more public information raise uncertainty? The international evidence on forward guidance”, 2019