Measuring central bank communication in a low-interest rate world

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Agenda

- The problem: How to measure central bank communication?
- Forward Guidance Indicators for the Federal Reserve and the ECB
- What determines forward guidance?
- Using forward guidance to forecast interest rate changes.

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Motivation

- ***Since 2008, central banks around the world have increasingly focused on providing so-called forward guidance for their policies***. Because monetary policy to a very large extent works through the 'expectational channel', forward guidance in itself has become an important driver of global monetary conditions.

- ***The use of forward guidance is particularly important in countries where interest rates are close to the Zero Lower Bound.*** Because interest rates have fallen for structural reasons, it is very likely that we will see more rather than less forward guidance from central banks in the future.

- We primarily focus on the ***pre-Covid-crisis-period*** and will return to monetary policy during 2020 in a later paper.

The Forward Guidance Indicator (FGI) (I)

- Inducing the ***Forward Guidance Indicator (FGI)***, which is a method of assessing central bank statements.
- FGI is based on the simple idea that each policy statement issued by a central bank contains words that can be categorised as ***'hawkish'*** (optimistic/bullish) or ***'dovish'*** (negative/bearish), either regarding the state of the economy and/or the monetary policy outlook.

The Forward Guidance Indicator (FGI) (II)

- The words have been picked from reading numerous central bank statements going back two decades from a number of inflation targeting countries.
- Specifically, we have made a list of ***about 100 'hawkish' words*** such as ***'expansion'*** or ***'recovery' and 100 'dovish' words*** such as ***'slowdown'*** and ***'recession'***. Based on this list, we do a simple word count of policy statements from each central bank over time.

The Forward Guidance Indicator (FGI) (III)

- How the Forward Guidance Indicator is calculated:

$$FGI = 2 \cdot \frac{(H - D)}{(H + D)}$$

- Where ***H*** is the number of ***'hawkish'*** words in policy statements over the analysed period and ***D*** is the number of *'dovish'* words.

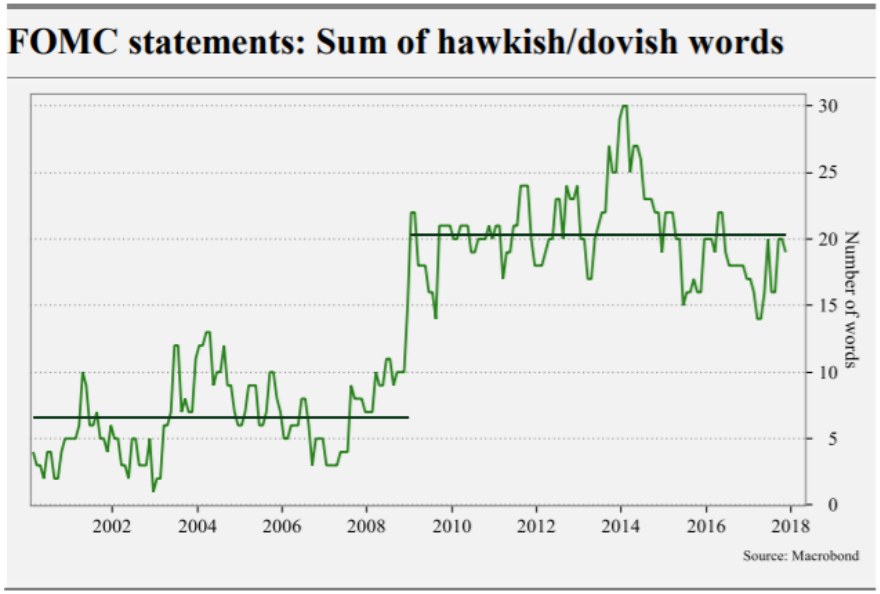
The Forward Guidance Indicator (FGI)

- The FGI is calculated so that the index will always be between -2 (if all words are dovish) and 2 (if all words are hawkish).
- It should be stressed that a zero score in FGI does not necessarily mean that the forward guidance is neutral.
- Pros and Cons of the indicator:
  - Pros: Consistent approach without subjective analysis
  - Cons: Risk of outliers and requires ”long” statements

A closer look at the Federal Reserve (I)

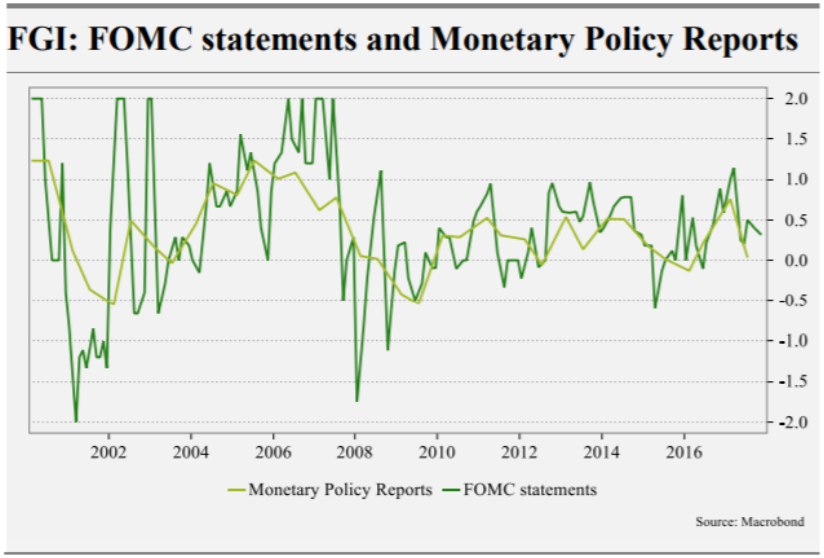
- A key challenge in calculating FGI is the extreme brevity of FOMC statements before the financial crisis of 2008-2009.

- With very few hawkish or dovish words contained in each document, the indicator becomes much more sensitive to changes of even one or two words.



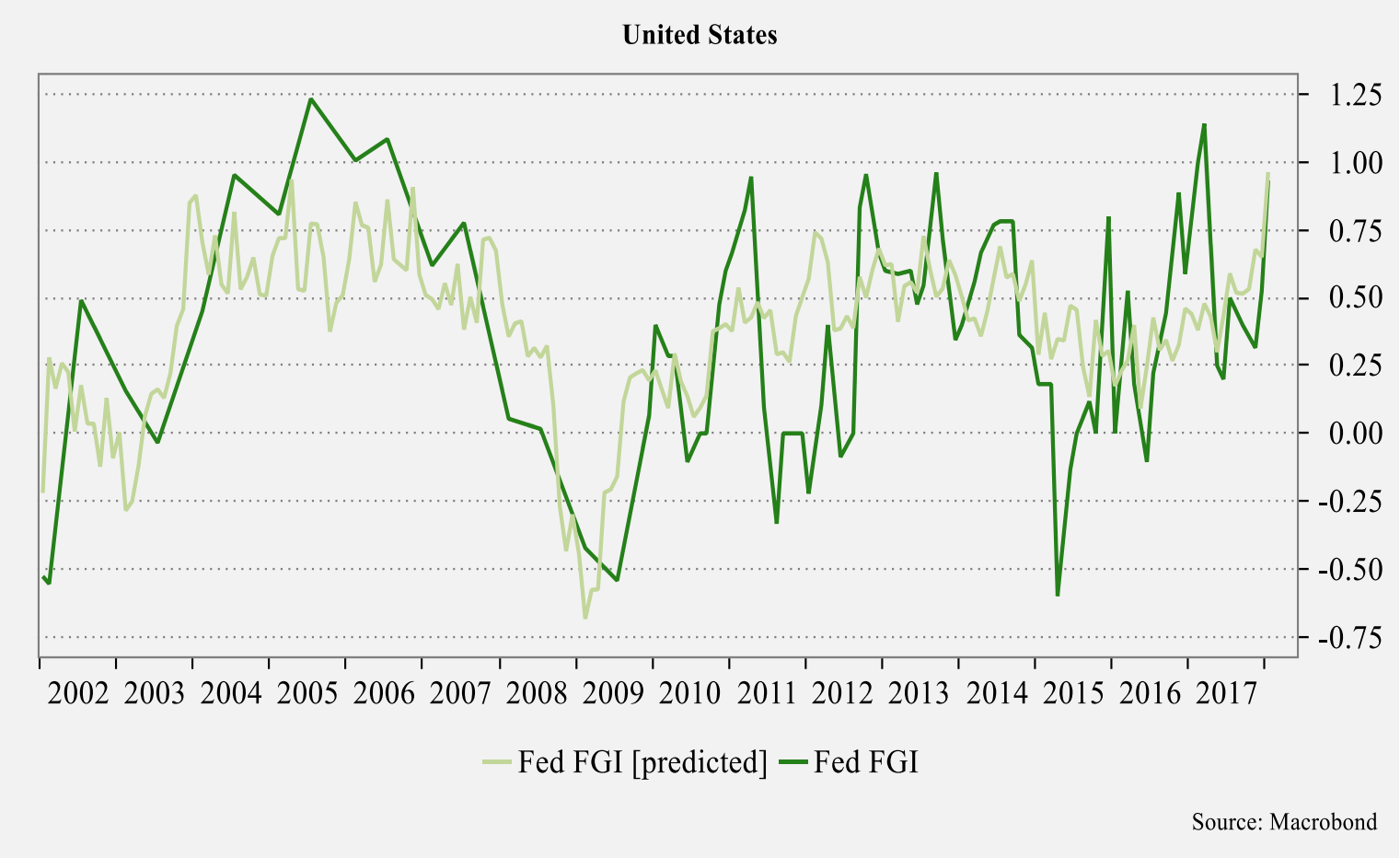
A closer look at the Federal Reserve (II)

- This strongly suggests that the quality of FGI based on FOMC statements before 2010 is questionable.
- To compensate for this problem, we have created a second FGI based on the Fed's biannual Monetary Policy Reports. Of course, the drawback of this second indicator is that it gives us only two observations per year. The graph below shows the two different FGIs.



FGI estimation: US

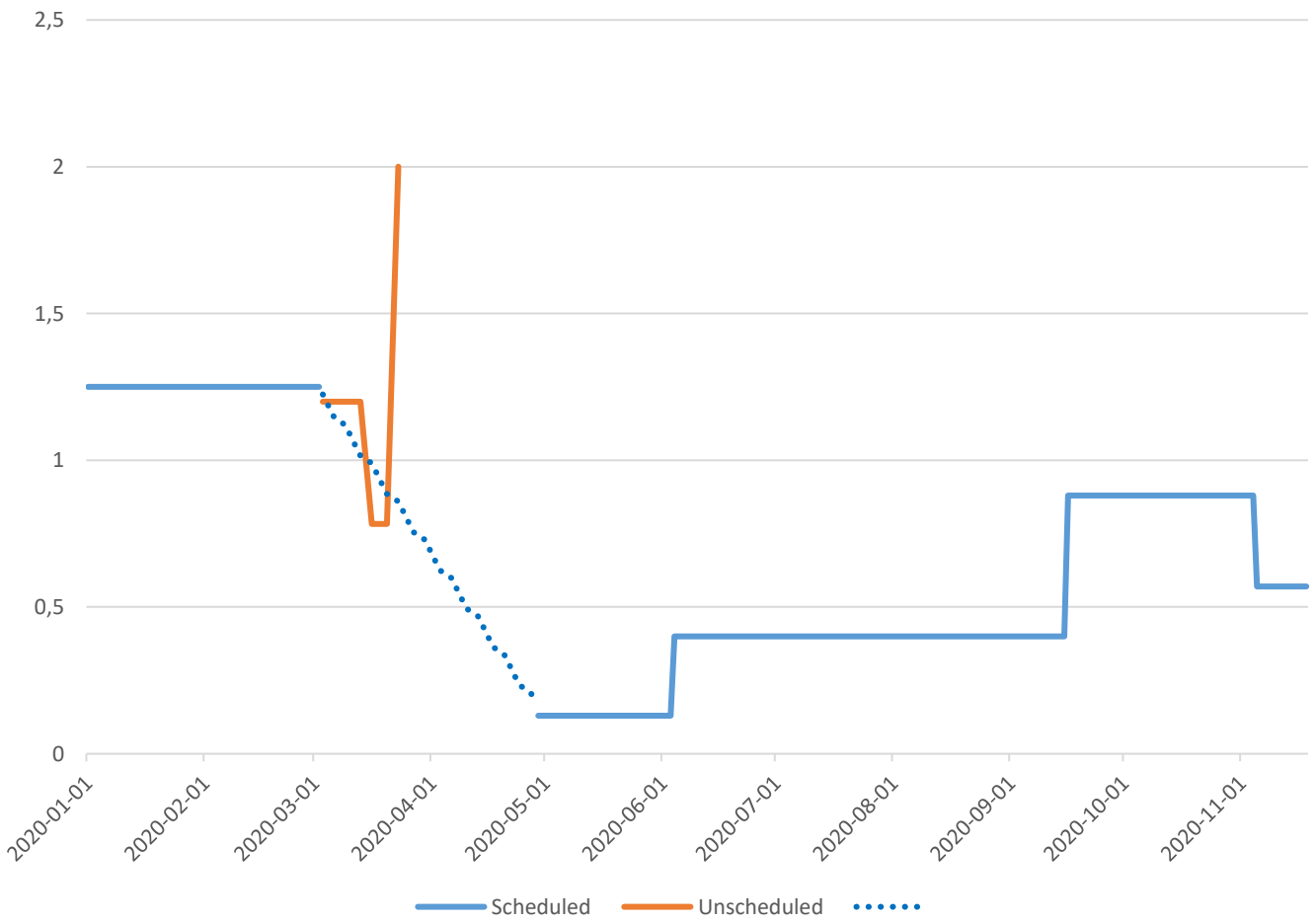
- Explaining FGI using inflation expectations and activity indicators – essentially a Taylor rule



FGI estimation: US

- Explaining FGI using inflation expectations and activity indicators – essentially a Taylor rule

Fed's forward guidance during the pandemic



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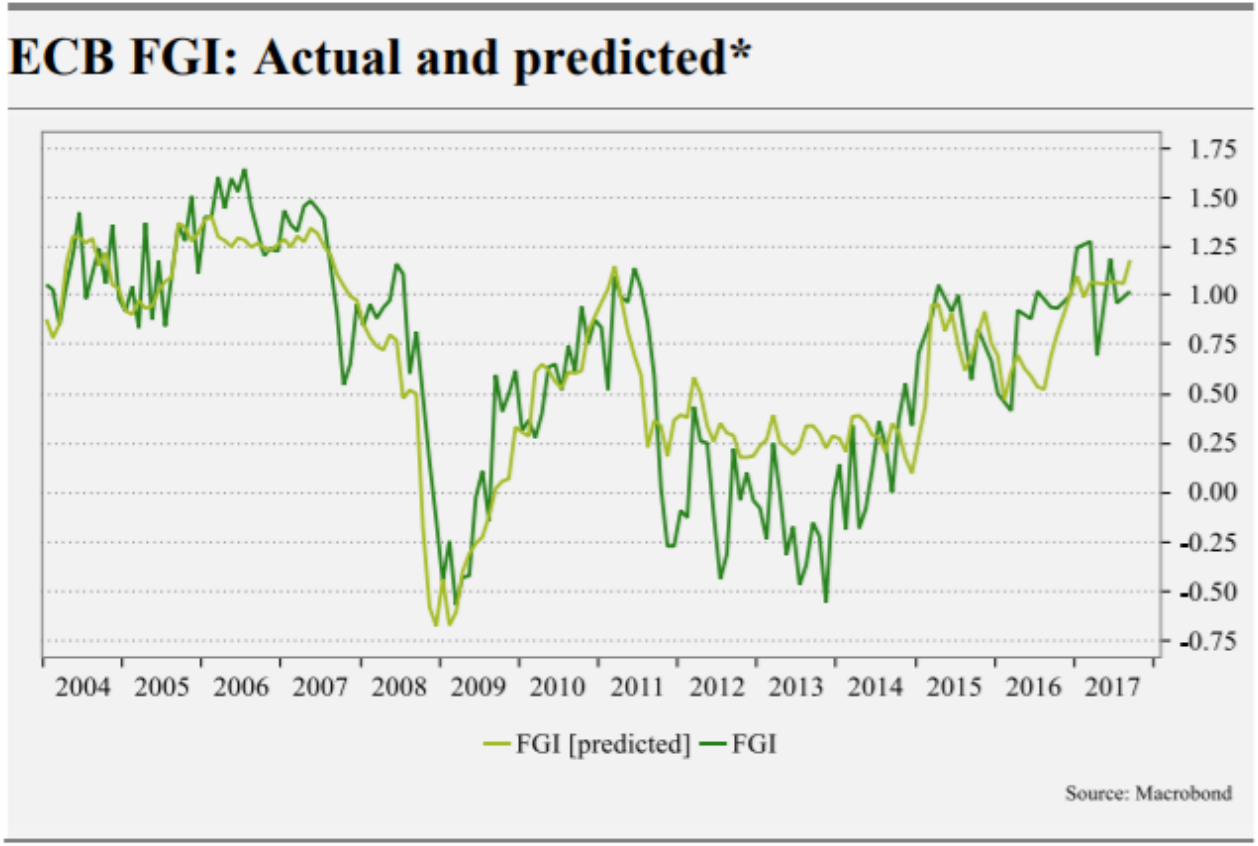
FGI for the ECB (I)

- We have also created a ***Forward Guidance Indicator (FGI) for the European Central Bank (ECB)***, based on exactly the same principles as the FGI for the Federal Reserve.

- While the Fed indicator is based on FOMC statements and Monetary Policy Reports, for the ECB we simply use the ***introductory statement of its president***.

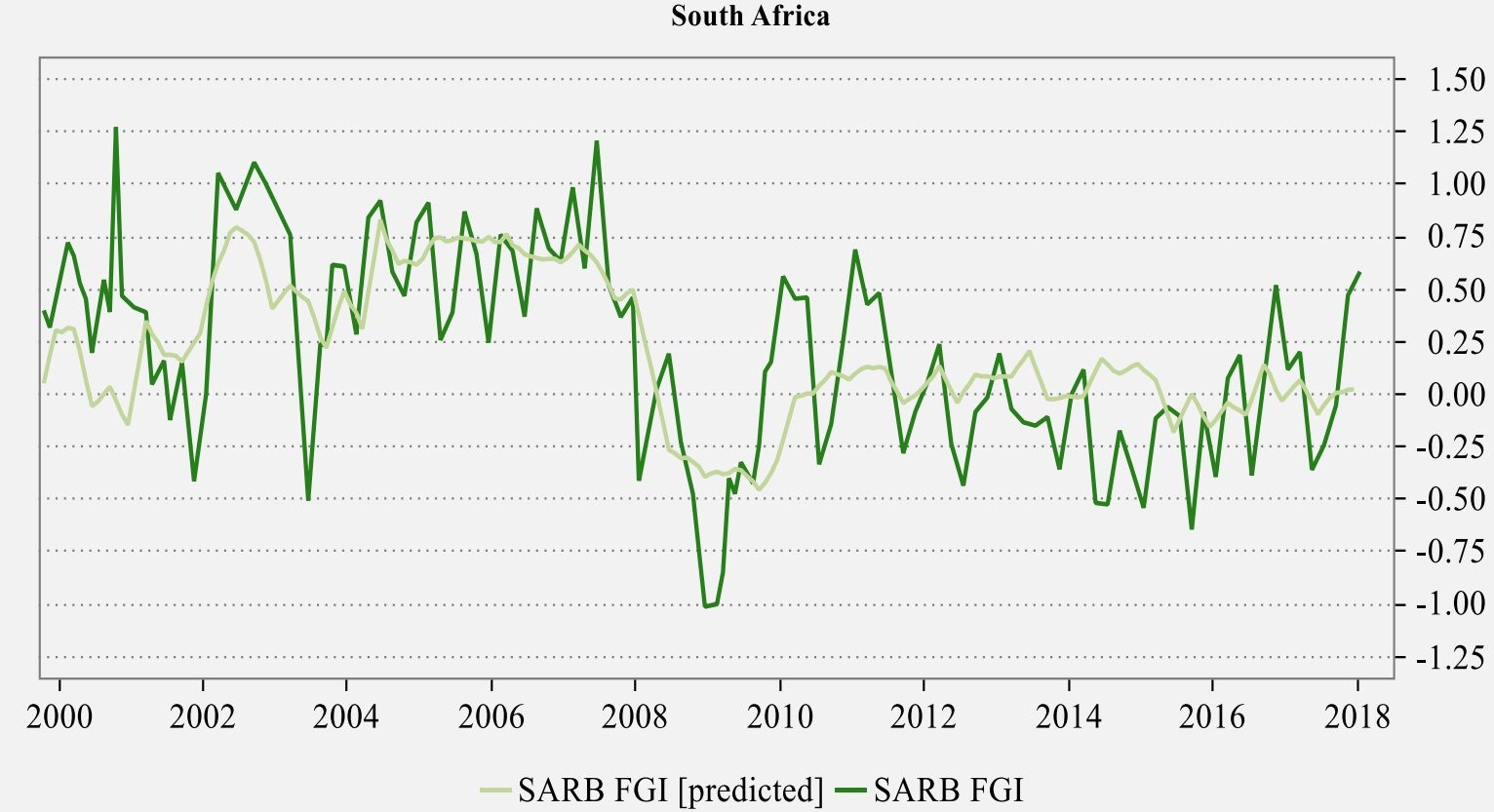
- One advantage of these introductory statements compared to FOMC statements is that they are longer, which makes for ***a much less volatile indicator*** of the ECB's forward guidance

FGI for the ECB (I)



*OLS regression based on business and consumer confidence, inflation expectations and EUR/USD

FGI estimation: South Africa



General results

FGI estimation (coefficients)					
	Intercept	*Inflation exp.*	*Activity indicator*	*R2*	*Period (from)*
Fed	-1.54953***	0.99669***	0.27285***	0.44	2002
ECB	-2.15576***	1.45447***	0.31049***	0.45	2002
SNB	0.07922	0.29309*	0.25128***	0.18	2003
SARB	-1.36257***	0.31917***	0.39857***	0.49	1999
RIKS	1.10533***	-0.26727***	0.5026***	0.46	2001
MNB	-1.04872***	0.57137***	0.14184***	0.18	2003

Explaining policy rates using FGI:
3, 6 and 12 month change

- Using FGI to explain and forecast changes in central bank's policy rates
- We introduce a 2008 dummy as well as a ZLB coefficient dummy

Policy rate estimation (coefficients)				
	3m (R2)	***6m (R2)***	***12m (R2)***	***FX***
Fed	30*** (0.49)	53*** (0.32)	66*** (0.29)	-
ECB	30*** (0.28)	45*** (0.20)	52*** (0.12)	-
SNB	29*** (0.29)	61*** (0.41)	89*** (0.36)	-
SARB	100*** (0.32)	160*** (0.30)	132*** (0.21)	x
RIKS	31*** (0.25)	44*** (0.17)	43*** (0.12)	-
MNB	29*** (0.29)	-	-	x

Future research

- Including more central bank (but skeptical about more insights)
- Impact forward guidance on macroeconomic developments
- Forward guidance and financial market developments
- CB communication during Covid-19-pandemic