IMPACT OF MONETARY POLICY COMMUNICATION IN INDONESIA[1]

This paper assesses the impact of monetary policy communication in Indonesia, focusing on the features and impact of monetary policy press releases and reports. It shows that the transparency of monetary policy has improved significantly over time, as monetary policy press releases have provided more information. However, the clarity of the messages appears to have declined. The paper also highlights that surprises on monetary policy decisions are relatively frequent, though the size of the surprises is small. Press releases and monetary policy reports do not appear to have a significant impact on market rates.

1. Communication is an important tool of monetary policy at Bank Indonesia (BI). With the adoption of an inflation targeting framework in 2005, transparency and clarity of monetary policy has played an increasingly important role in guiding market expectations. As a result, communication tools and events have increased over time. BI has increased its disclosure of information relevant for monetary policy through press releases, monetary policy reports, monetary policy reviews, speeches by senior BI officials, press conferences, and outreach.

2. This paper assesses the impact of monetary policy communication in Indonesia from three perspectives. First, the transparency and clarity of monetary policy communication is key to align BI and the market's understanding of the drivers of monetary policy decisions. Second, with this alignment in understanding, monetary policy decisions should be generally predictable for the market. Third, the efficacy of monetary policy can be strengthened with communication with the latter clarifying policy decisions, or providing new information not previously priced in market rates.

3. The analysis presented below focuses on two tools of monetary policy communication at BI—monetary policy press releases and monetary policy reports. Press releases are issued at the end of the regular monthly or extraordinary monetary policy committee meetings. Monetary reports are published on a quarterly basis. For other months of the year, BI issues monetary policy reviews, which are similar to the monetary policy reports, excluding the forward-looking analysis. In this paper, references to monetary policy reports encompass both monetary policy reports and reviews. The reports are not issued on the same day as the monetary policy press release, allowing a separated identification of their impact.

A. Transparency and Clarity

4. Transparency of monetary policy has improved over time. Transparency is a key element of accountability and a way to enabling markets to respond more smoothly to policy decisions. Transparency provides the public with a better understanding of the central bank's objective and the factors that motivate monetary policy decisions (Dincer and Eichengreen, 2014). The Dincer-

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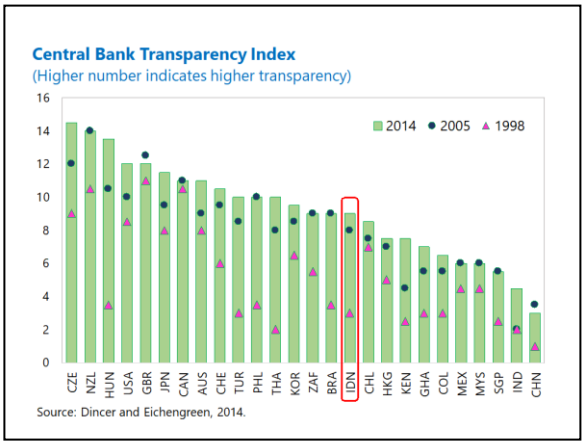
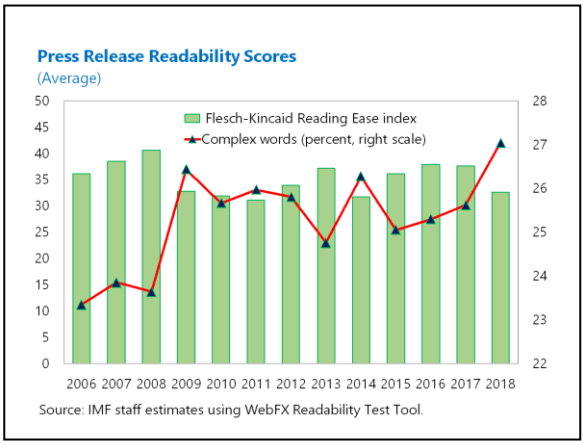
Eichengreen transparency index suggests that BI's monetary policy transparency has improved substantially over the last two decades.[2] BI's monetary policy transparency now ranks among the highest for emerging markets.



5. However, the communication of multiple objectives of monetary policy remains a challenge. BI's legal mandate is to achieve and maintain the stability of the rupiah value (in terms of prices of goods and services and the exchange rate). To achieve this goal, Bank Indonesia adopted the inflation targeting framework, where inflation is the primary monetary policy objective, while adhering to the free-floating exchange rate system. In this framework, the exchange rate policy aims to minimize excessive exchange rate volatility, rather than to peg the exchange rate to a particular level. In practice, at different times, BI has referred to multiple objectives such as inflation, current account deficit, protection against volatile global markets, safeguarding the competitiveness of domestic financial markets against changing policies in other countries, etc.



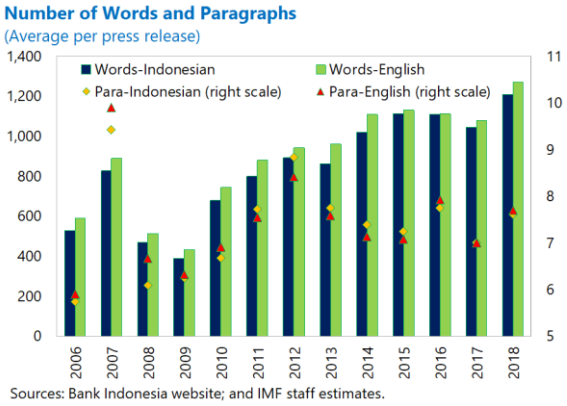
6. While BI has provided more information in its monetary policy press releases over time, the clarity of message appears to have weakened. The literature suggests that clarity of monetary policy message improves the effectiveness of monetary policy. Blinder (2008) suggests that clearer communications have higher signal-to-noise ratios and should thus provide more useful information. Using the Flesch-Kincaid measure of readability, Bulir, Cihak, and Jansen (2014) measured the clarity of inflation reports by four central banks before and during the GFC and found an association of clarity and reduced market volatility. The Flesch-Kincaid[3] measure of readability suggests, among other things, that longer sentences (and complicated words with many syllables) reduce the clarity of messages. Our analysis finds that the length of monetary policy press releases (the number of words) has increased over time, reflecting an increase in both the number and length of paragraphs. As each paragraph

[2] The Dincer-Eichengreen transparency index is constructed from the assessment of 15 areas, including whether there is a formal statement of monetary policy objective(s) with explicit prioritization of objectives when there are multiple objectives, a quantification of the primary objective(s), independence vis-à-vis the government, and public provision of data relevant for the conduct of monetary policy.

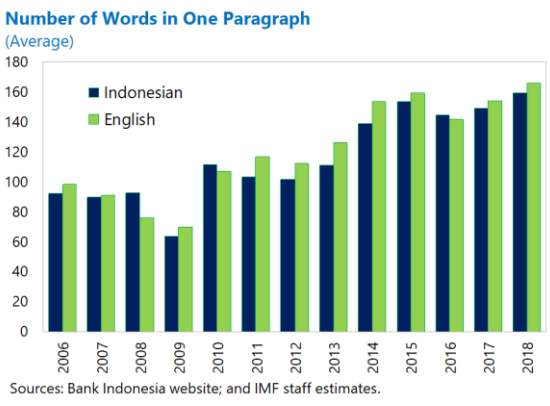
[3] Flesch-Kincaid Index on 0–100 scale is based on this formula: 206.835 - 1.015 x (words/sentences) - 84.6 x (syllables/words). Low scores indicate text that is complicated to understand. For most business writing, a score of 65 is a good target.

typically covers a different issue, BI has included more information over time. However, paragraphs have become longer, essentially due to longer sentences, which is typically associated with a loss of clarity. The results are broadly similar whether the Indonesian or English version of the press releases are analyzed (Figure 1).

Figure 1. Indonesia: Press Releases Words and Paragraphs



Sources: Bank Indonesia website; and IMF staff estimates.

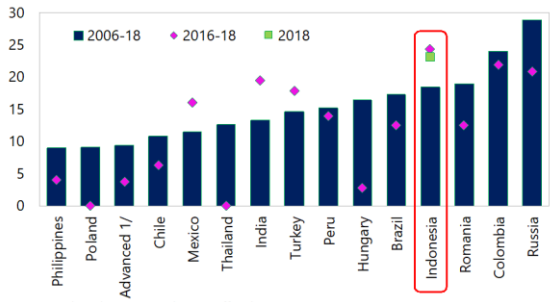


Sources: Bank Indonesia website; and IMF staff estimates.

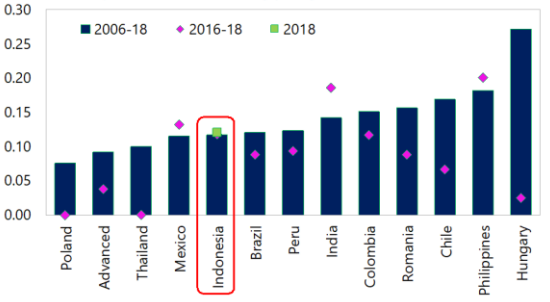
B. Predictability

7. Monetary policy is somewhat predictable as shown by forecast errors in Bloomberg analysts surveys (Figure 2). The forecast error by the median analyst is relatively frequent compared to other emerging markets. In particular, in periods of stress, the frequency of error is higher. Even though forecast errors are relatively frequent, their size is relatively small including the mean square forecast error of BI policy decision , when compared to other emerging markets.

Figure 2. Indonesia: Predictability of Interest Rate Decision



Sources: Bloomberg LP.; and IMF staff estimates.
1/ Average of Canada, Australia, Czech Republic, Korea, New Zealand, Norway, United Kingdom, and United States.



Sources: Bloomberg LP.; and IMF staff estimates.
1/ Average of Canada, Australia, Czech Republic, Korea, New Zealand, Norway, United Kingdom, and United States.

C. Impact on Market Rates

8. Monetary policy surprises have a significant impact on money market rates, but there is no evidence that they affect the bond market (Table 1). If the market anticipated monetary policy decision correctly, market rates should reflect that anticipation. As a result, policy decisions that are in line with market expectations do not have a significant impact on market rates. In contrast, unanticipated decisions (surprises) should have a significant impact on market rates. We test this understanding against money market rates, bond yields and the exchange rate (see Appendix III for a description of the estimation approach). The results indicate that anticipated monetary policy decisions have no significant impact on market rates. As expected, decision surprises have a significant impact on money market rates, with the impact declining along the maturity curve. In contrast, rate surprises do not have a significant impact on bond yields and the exchange rate because of shallow financial markets, including an incomplete yield curve, a money market active only for maturities up to one month.[4]

Table 1. Indonesia: Impact of Monetary Policy Surprise and Anticipation 1/

Variables	Overnight Interbank	Interbank				Government Bond Yield			Exchange Rate
		1-week	2-week	3-week	1-month	1-year	5-year	10-year	
Unanticipated	1.369 ***	1.000 ***	1.195 ***	0.469 ***	0.540 ***	0.285	0.133	-0.008	112.883
	(0.357)	(0.19)	(0.252)	(0.17)	(0.21)	(0.175)	(0.113)	(0.096)	(75.787)
Anticipated	0.442	0.334	0.505 *	0.203	0.231	-0.014	0.001	-0.115	0.946
	(0.376)	(0.224)	(0.258)	(0.221)	(0.167)	(0.087)	(0.057)	(0.058)	(20.736)
Constant	-0.014	0.003	0.014	0.005	0.010	-0.003	-0.003	-0.006	-2.198
	(0.039)	(0.016)	(0.019)	(0.016)	(0.025)	(0.015)	(0.01)	(0.048)	(5.42)
Observations	135	135	135	135	135	126	138	141	141
R-squared	0.079	0.213	0.246	0.075	0.050	0.029	0.013	0.001	0.027

1/ Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

9. Monetary policy press releases appear not to have a significant impact on market rates once policy rate decisions are accounted for (Table 2). Beyond the rate decision, the monetary policy press release can convey additional information that move market rates. Such information could be in the in the form of forward guidance, or highlight of risks not accounted for by the market. We test this hypothesis to explore whether in the absence of policy rate surprises there is still a significant impact of press releases on market rates (see Appendix III for a description of the estimation approach). The results indicate that press releases do not have a signficant impact on market rates beyond the policy rate decision itself. While there is a significant impact of policy rate changes on the short-end money market maturity curve, it does not propagate along the entire curve. In addition, there is no significant impact on bond yields and the exchange rate. The results

[4] Other aspects of the shallow financial markets in Indonesia include the availability of government securities for maturities of one year or higher and the small issuance of short-term government securities.

are supported by an alternative estimation approach (Appendix II), where we regress the absolute change in market rates on a dummy variable for press releases in the full sample. Even though press releases have no significant independent impact on market rates, they might be useful in other ways not assessed here. For example, over time, they may provide more clarity on the policy framework without affecting market rates contemporenously.

Table 2. Indonesia: Impact of Press Release on Market Rates 1/

	Interbank				Government Bond Yield			Exchange
Variables	1-week	2-week	3-week	1-month	1-year	5-year	10-year	Rate
Overnight	0.759 ***	0.327 **	0.063	-0.211	-0.055	0.009	-0.071	47.169
	(0.1)	(0.144)	(0.081)	(0.313)	(0.091)	(0.089)	(0.083)	(34.571)
Surprise dummy	-0.046 **	-0.051	0.028	-0.005	0.029	0.012	0.008	-14.485
	(0.018)	(0.034)	(0.032)	(0.05)	(0.03)	(0.019)	(0.014)	(10.925)
Surprise dummy*Overnight	-0.439 ***	-0.095	-0.087	0.304	-0.094	-0.023	0.077	-51.566
	(0.106)	(0.178)	(0.078)	(0.315)	(0.141)	(0.09)	(0.084)	(35.952)
Unanticipated	1.008 ***	1.201 ***	0.466 ***	0.539 **	0.213	0.159	-0.015	134.627 *
	(0.147)	(0.246)	(0.171)	(0.212)	(0.159)	(0.117)	(0.09)	(81.048)
Anticipated	0.301 **	0.479 **	0.214	0.237	-0.049	0.009 *	-0.056 *	-7.623
	(0.141)	(0.208)	(0.227)	(0.152)	(0.112)	(0.061)	(0.028)	(22.487)
Constant	0.028 ***	0.042 **	-0.010	0.013	-0.010	-0.008 ***	0.037	5.984
	(0.008)	(0.017)	(0.017)	(0.037)	(0.023)	(0.013)	(0.01)	(5.707)
Observations	135	135	135	135	122	135	135	135
R-squared	0.725	0.422	0.083	0.078	0.046	0.026	0.026	0.052

1/ Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

10. Monetary policy reports do not appear to have significant impact on financial markets (Table 3). To measure the impact of monetary policy reports on market rates, we consider whether there is a significant shift in the yield curve on the days of release of the reports (restricted sample) as compared to other days (full sample). We measure the shift by estimating whether a movement in the short-end of the yield curve (overnight interbank rate) significantly propagates to all maturities along the yield curve (see Appendix III for a description of the estimation approach). There is no significant difference between the coefficient of the restricted and full sample estimations (Table 3), suggesting that monetary policy report have no significant impact on market rates. The results are supported by an alternative estimation approach (Appendix II), where we regress the absolute change in market rates on a dummy variable for press releases in the full sample. As noted for press releases, even though monetary policy reports have no significant impact on market rates, they might be useful in other ways not assessed here.

Table 3. Indonesia: Impact of Monetary Policy Reports on Market Rates 1/

Variables	Interbank								Bond Yield						Exchange Rate	
	1-week	1-week	2-week	2-week	3-week	3-week	1-month	1-month	1-year	1-year	5-year	5-year	10-year	10-year		
Overnight interbank rate	0.330 ***		0.185 ***		0.028		0.010		0.054		0.009 *		-0.005		4.028	
	(0.063)		(0.07)		(0.023)		(0.03)		(0.037)		(0.005)		(0.013)		(3.59)	
Overnight rate (full sample)		0.313 ***		0.242 ***		0.031 **		0.012 *		-0.002		0.001		-0.001		1.551
		(0.029)		(0.04)		(0.014)		(0.007)		(0.004)		(0.002)		(0.003)		(1.402)
Constant	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	-0.002	0.000	-0.129 ***	0.020 ***	-2.117	4.554 **
	(0.023)	(0.006)	(0.026)	(0.006)	(0.015)	(0.005)	(0.03)	(0.006)	(0.01)	(0.004)	(0.005)	(0.002)	(0.014)	(0.004)	(5.499)	(2.11)
Observations	106	2703	106	2703	106	2703	106	2703	92	2390	106	2692	106	2703	106	2703
R-squared	0.557	0.461	0.224	0.283	0.021	0.009	0.001	0.001	0.031	0.000	0.016	0.000	0.001	0.000	0.003	0.000

1/ Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

11. In conclusion, this paper shed some light on the transparency, clarity, predictability, and impact of monetary policy communication in Indonesia. It showed that while monetary policy transparency has improved over time, and monetary policy is somewhat more predictable in Indonesia than in peer countries, the clarity of communication appears to have weakened. The analysis of the impact of monetary policy communication on market rates indicates that monetary policy surprises have a significant impact on money market rates, but not on bond yields, highlighting a weak transmission of monetary policy. The results suggest that in addition to improving the clarity of monetary policy communication, deepening financial markets would support the effectiveness of monetary policy and its communication. Key financial deepening reforms include improving liquidity and activity in the money market beyond one month of maturity and increasing the issuance of short-term government securities.

Appendix I. Data Source

Variables	Description	Source
Unanticipated Policy	The difference between BI's rate decision (it) and analysts' anticipated rate (Et-1it)	Bloomberg L.P. (Bank Indonesia Reference Interest Rate Index)
Anticipated Policy	The difference between analysts' anticipated rate (Et-1it) and actual BI's rate (i_{t-1})	Bloomberg (Bank Indonesia Reference Interest Rate Index)
Press Release Dummy	Dummy variable for Monetary Policy Press Release date (if any press release 1, otherwise 0).	Bank Indonesia
MPR Release Dummy	Dummy variable for Monetary Policy Report Release date (if any MPR release 1, otherwise 0).	Bank Indonesia
Policy Rate Change Dummy	Dummy variable for Monetary Policy Rate (BI rate) Change (if any rate changes 1, otherwise 0).	Bank Indonesia
Macroeconomic Release Dummy	Release dates for major macroeconomic variables of Indonesia – GDP, CPI, The Nikkei Indonesia Manufacturing Purchasing Managers' Index and Current Account balance (if any release 1, otherwise 0).	Bloomberg L.P.
Policy Rate Change	Change in Monetary Policy Rate (BI rate) from previous day	Bank Indonesia
Overnight Interbank	Change in actual overnight interbank money market rate from previous day	Bank Indonesia
1-week Interbank	Change in actual 1-week interbank money market rate from previous day	Bank Indonesia
2-week Interbank	Change in actual 2-week interbank money market rate from previous day	Bank Indonesia
3-week Interbank	Change in actual 3-week interbank money market rate from previous day	Bank Indonesia
1-month Interbank	Change in actual 1-month interbank money market rate from previous day	Bank Indonesia
1-year Government Bond Yield	Change in 1-year government bond yields from previous day	Bloomberg L.P. (GIDN1YR index)
5-year Government Bond Yield	Change in 5-year government bond yields from previous day	Bloomberg L.P. (GIDN5YR Index)
10-year Government Bond Yield	Change in 10-year government bond yields from previous day	Bloomberg L.P. (GIDN10YR Index)
Exchange Rate	Change in Indonesian spot rupiah per U.S. dollar form previous day	Bloomberg
FedRate	Change in Federal Funds Effective rate from previous day	Haver Analytics
1-month money market rate	Change in 1-month U.S. Treasury Bill Yield from previous day	Haver Analytics
10-year government bond yield	Change in 10-year U.S. Treasury Bond Yield from previous day	Haver Analytics
EMBI spread	Change in JPMorgan Emerging Market Bond Global (EMBIG) Index Sovereign Spread for Indonesia	Bloomberg L.P. (JPSSGIDO Index)
CDS	Change in Indonesia 5-Year Sovereign Credit Default Swaps	Bloomberg L.P.

Appendix II. Impact of Press Release and Monetary Policy Report

Impact of Press Release and Monetary Policy Report—An Alternative Approach 1/

Variables	Overnight Interbank	Interbank				Government Bond Yield			Exchange Rate
		1-week	2-week	3-week	1-month	1-year	5-year	10-year	
Press Release Dummy	-0.051	-0.005	0.010	-0.014	0.008	0.000	0.011	-0.117 **	-5.434
	(0.052)	(0.02)	(0.022)	(0.018)	(0.023)	(0.013)	(0.008)	(0.05)	(6.642)
MPR Release Dummy	0.002	0.028	0.006	-0.029 *	0.015	-0.021 *	-0.017 ***	-0.012	-8.120
	(0.076)	(0.032)	(0.027)	(0.017)	(0.027)	(0.011)	(0.005)	(0.09)	(6.662)
Policy Rate Change	-0.401	-0.262 **	-0.197	-0.131	-0.097	0.033	-0.002	0.061	-18.329
	(0.233)	(0.127)	(0.164)	(0.143)	(0.114)	(0.049)	(0.037)	(0.048)	(29.573)
Macroeconomic releases dummy	-0.042	-0.035 **	-0.050 ***	-0.007	-0.056 ***	-0.004	-0.004	-0.011	-7.000
	(0.038)	(0.015)	(0.013)	(0.016)	(0.012)	(0.01)	(0.005)	(0.056)	(6.43)
Constant	0.253 ***	0.142 ***	0.150 ***	0.081 ***	0.158 ***	0.095 ***	0.062 ***	0.230 ***	70.726 ***
	(0.018)	(0.008)	(0.008)	(0.006)	(0.007)	(0.004)	(0.002)	(0.022)	(5.299)
Observations	2,703	2,703	2,703	2,703	2,703	2,506	2,840	2,965	2,966
R-squared	0.0009	0.0023	0.0027	0.0011	0.0040	0.0008	0.0017	0.0006	0.0002

1/ Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Appendix III. Description of Analytical Approaches

Predictability of Monetary Policy – Measuring Monetary Policy Surprises

Bloomberg conducts a survey of analysts covering Indonesia, prior to BI's monetary policy meeting decisions. The difference between BI's rate decision (i_t) and analysts' anticipated rate ($E_{t-1}i_t$) constitutes a monetary policy surprise (unanticipated monetary policy change). The change in policy rate by BI (Δi_t) can therefore be broken down into unanticipated ($\Delta i^u_{j,t}$) and anticipated policy change ($\Delta i^a_{j,t}$).

$$\Delta i_t = (i_t - i_{t-1}) = (i_t - E_{t-1}i_t) + (E_{t-1}i_t - i_{t-1}) = \Delta i^u_{j,t} + \Delta i^a_{j,t}$$

Where "i" is the policy rate; "t" is the time index; "$E_{t-1}i_t$" is the market expectation at time "t-1" of the policy rate at time t.

Efficacy of Monetary Policy – Market Reaction to Monetary Policy Surprises

To capture the impact of monetary policy surprises on market rates (money market, bond yield curve, and the exchange rate) we run an ordinary least square with robust standard errors. The dependent variables are market rates, the independent variables are anticipated and unanticipated rate changes in policy rates, and the control variables include global factors (changes in U.S. Fed rates, 1-month money market rate, and 10-year government bond yield), and country risk (EMBI and CDS for Indonesia).

$$\Delta m_t = \alpha_0 + \alpha_u \Delta i^u_{j,t} + \alpha_a \Delta i^a_{j,t} + \alpha_c Controls + \varepsilon_t$$

Efficacy of Monetary Policy – Isolating the Impact of Press Release on Market Rates

The identification approach here relies on the fact that on days when there is no monetary policy surprise, there should be no significant shift in market rates. If such shift is observed, it could be attributed to the content of the press release (not to the policy rate decision), provided other key drivers of market rates are accounted for. While a random event can move particular maturities or the entire yield curve, a consistent and significant shift in the curve on days when the press release is issues (and there is no rate surprise) could be reasonably attributed to the content of the press release. To capture such impact, we interact the short-end of the money market (overnight rate) with a dummy variable indicating whether there was a policy rate surprise or not.

$$\Delta m_t = \alpha_0 + overnight + surprise + overnight * surprise + \alpha_u \Delta i^u_{j,t} + \alpha_a \Delta i^a_{j,t} + \alpha_c Controls + \varepsilon_t$$

Where "overnight" is the overnight money market rate and "surprise" is the dummy variable which takes the value 1 if there is a monetary policy rate surprise, and zero overwise.

Efficacy of Monetary Policy – Impact of Monetary Policy Reports on market rates

The identification approach here relies on the fact that if on days when a monetary policy report is released, there is significant shift in market rates relative to other days (or the entire sample covering all days between 2005 and 2018), such a shift it could be attributed to the content of the monetary policy reports (not to the policy rate decision), provided other key drivers of market rates are accounted for.

$$\Delta m_{r,t} = \alpha_{r,0} + \alpha_{r,1} overnight + \alpha_{r,c} Controls\ (for\ restricted\ sample) + \varepsilon_t$$

$$\Delta m_{f,t} = \alpha_{f,0} + \alpha_{f,1} overnight + \alpha_{f,c} Controls\ (for\ full\ sample) + \varepsilon_t$$

Where "overnight" is the overnight money market rate. A significant difference between αr,c and αf,c would be attributed to the impact of monetary policy reports.

Impact of Press Release (MP) and Monetary Policy Reports (MPR) on market rates (full sample) – Robustness check.

Here we focus on the impact of MP and MPR on market rate, irrespective of the direction of the impact. In the full sample, we estimated the impacts by regressing the absolute value of market rate changes on dummy variables capturing whether there a PR or MPR was release on a given day, while controlling of other factors that could affect market rates.

$$|\Delta m_t| = \alpha + \beta_1 D(MP)_t + \beta_2 D(MPR)_t + \beta_3 D(Macro)_t + \beta_4 \Delta i_t + \beta_5 Controls\ + \varepsilon_t$$

Where $|\Delta m_t|$ = absolute value of change in market rates; D(MP) = press release dummy; D(MPR) = monetary policy report dummy; D(Macro) = macroeconomic release dummy (covering the release of data on growth, inflation, trade); Δi_t = change in policy rate.