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Central Banks' Voting Records and Future Policy

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Abstract

We assess whether the voting records of central bank boards are informative about future monetary policy using data on five inflation targeting countries (the Czech Republic, Hungary, Poland, Sweden and the United Kingdom). We find that in all countries the voting records, namely the difference between the average voted-for and actually implemented policy rate, signal future monetary policy, making a case for publishing the records. This result holds even if we control for the financial market expectations; include the voting records from the period covering the current global financial crisis and examine the differences in timing and style of the voting record announcements.

JEL-Classification: D78, E52, E58

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1 Introduction

Monetary policy transparency has increased dramatically over the last two decades (Geraats, 2009; Posen, 2003). Today, central banks typically communicate effectively with the public and explain their policies in great detail. Every monetary policy decision is accompanied by minutes or press releases that outline the arguments that central bankers expressed during the monetary policy meeting. The most transparent central banks where bank boards[1] decide by majority vote also release attributed voting records, typically together with the minutes.[2] In this paper we aim to examine whether voting records are informative about future policy. From the voting records, we are able to calculate an indicator called $skew$, defined as the difference between the average policy rate voted for by the individual board members and the policy rate that is the outcome of the majority vote. Our empirical model tests whether $skew$ conveys new information in addition to all the other information already incorporated into financial market expectations prior to the monetary policy meeting.

While some previous research has extensively examined the information content of voting records in the case of the UK (Gerlach-Kristen, 2004), many other central banks' voting records have not been examined empirically yet. This is mainly due to the fact that the practice of publishing the voting records of board members has been adopted relatively recently and several central banks make their voting records public only in the transcripts of their monetary policy meetings, published with a several-year lag.

In this paper, we examine the informative power of voting results in five inflation-targeting countries – the Czech Republic, Hungary, Poland, Sweden and the UK, where monetary policy is decided by a majority vote of at least formally independent committee or board members. In consequence, our research gives a greater international perspective than previously published case studies and is able to draw conclusions that are not country-specific.

[1] The decision-making bodies in central banks are typically called either monetary policy committees or bank boards. We use the two terms interchangeably in our paper.

[2] Fry et al. (2000) reports that approximately 90% of central banks around the world make decisions in committees.

On the most general level the question of whether the voting records of central bank boards and monetary policy committees (MPCs) reveal information about future changes in monetary policy is related to the literature on central bank communication and central bank transparency, surveyed by Blinder et al. (2008) and Geraats (2002, 2009) respectively. The general conclusion of both strands of literature is that the way central banks communicate to the public and their degree of transparency matters for monetary policy. Most of the theoretical and empirical studies also indicate the benefits of more open and more transparent central bank behaviour. However, not all the studies reach unequivocal conclusions. For example, the model in Morris and Shin (2002) leaves open the possibility that more information provided by a central bank is welfare reducing, while Meade and Stasavage (2008) show that the Federal Reserve's decision to release full transcripts of Federal Open Market Committee (FOMC) meetings decreased the incentives of its participants to voice dissenting opinions. Winkler (2000) draws similar conclusions and puts forward a conceptual framework to distinguish different aspects of transparency. Therefore, our ambition is to contribute to this research by examining the effect of monetary policy transparency on policy predictability.

We find that the voting record is informative of future monetary policy changes in all the sample countries. It adds news to the information set used by financial markets to form expectations prior to the voting record announcement. This result is robust to various sensitivity checks such as to different sample periods or to the timing and style of the voting record announcement. Our dataset provides two 'natural experiment' setups, where we can quantify the effect of publicly unavailable voting results (for the case of Poland) and the effect of publicly unavailable names of voting members (for the Czech case). The voting record is informative about future policy in these two setups as well. This implies that releasing voting record in a timely fashion is beneficial for greater monetary policy predictability, but releasing the names themselves is less important for transparency than releasing the voting outcome itself.

The paper is organized as follows. Section 2 presents the institutional background of monetary policy decision-making in our sample countries. The empirical methodology is discussed in section 3. Section 4 gives the results. Section 5 offers concluding remarks. Appendix containing data description follows.

2 Institutional Background

This section gives information on the background of central bank committees' decision-making about monetary policy. The bank boards typically meet on a monthly frequency and decide on the level of the repo rate. The frequency of monetary policy meetings varies. For example, the Bank of England and the Hungarian and Polish central banks meet monthly. The Czech National Bank used to meet monthly up to 2007 but has met eight times a year since 2008, the same as the Riksbank for the large part of our sample period. Occasionally, the central banks hold extraordinary policy meetings.

The boards take decisions based on a majority vote. In the event of a tie, the chairperson (the governor, if present at the meeting) has the casting vote. The policy decision is announced on the same day. Minutes explaining the monetary policy decision, i.e. the voting of central bankers, are published approximately one or two weeks later. Except for Poland, the voting record is an integral part of the minutes and summarizes the qualitative information contained in the minutes. In the case of Poland, the voting record appears no sooner than 6 weeks (and no later than 12 weeks) after the policy meeting.[3] Polish case documents that the informative power of the voting records does not depend on the ex ante known publishing time lag. An in-depth study on voting records in Poland is provided by Sirchenko (2011).

The voting results are typically attributed, but not always. For example, the voting ratio was released without an explicit statement on how the individual board members voted for the monetary policy decisions in the Czech Republic in 2000–2007. From mid-2000 to January 2006 the (unattributed) voting record was published in the minutes only, while since February 2006 the voting record has been released at the press conference held about 3 hours after the announcement of the interest rate decision. In addition, the Czech National Bank has recently published the transcripts of its monetary policy meetings in 1998–2001, which include the voting record as well. Hence, the Czech case offers us a second natural experiment set-up in which we can test whether the voting ratio has a similar informative power to the full voting record. The results show that this

[3] More specifically, if the repo rate was changed, the voting record is first published in the Court and Economic Gazette of the Ministry of Justice and only after that in the inflation report. Voting records

is the case. The lesson learnt from the Czech case is therefore to publish at least the voting ratio if there are serious concerns about disclosing names.

It is noteworthy that disagreement among central bankers is common. The theoretical literature offers several possibilities, why disagreement occurs. For example, Gerlach-Kristen (2008) investigates the role of the MPC chairman in committee decision-making in a model that generates real-world-like dissenting frequencies. The possibility of dissent arising is due to the fact that individual policy-makers receive private information about the unobserved optimal interest rate. Differences in private information sets among the MPC members then give rise to different votes by the time the policy decision is made. Riboni and Ruge-Murcia (2008a) try to model central bank decision-making taking into account its dynamic nature. They show that even in periods in which policy-makers' preferences do not differ, policy-makers may fail to reach a consensus and change the policy from the status quo, due to the possibility of future disagreement. In a similar vein, Farvaque et al. (2009) examines how different decision rules in monetary policy committees affect the volatility of interest rates.

We find that the voting was not unanimous in 46% of cases for the Czech central bank, 70% for the Hungarian central bank, 46% for the Polish central bank, 19% for the Swedish central bank and 59% for the Bank of England during our sample period. The frequency of unanimous voting depends to a certain extent on the size of the bank board, with Hungary having more than 10 members in the board during our sample. The typical magnitude of monetary policy rate change is 25 basis points. Other magnitudes are less common, although central banks decreased policy rates quite aggressively during the recent financial crisis, often by 50 or even 100 basis points during certain meetings. Substantial policy rate changes of similar magnitude were also observed in the Czech Republic, Hungary and Poland during the period of transition to a market economy, which was characterized by more volatile macroeconomic development. The data are further described in Appendix.[4]

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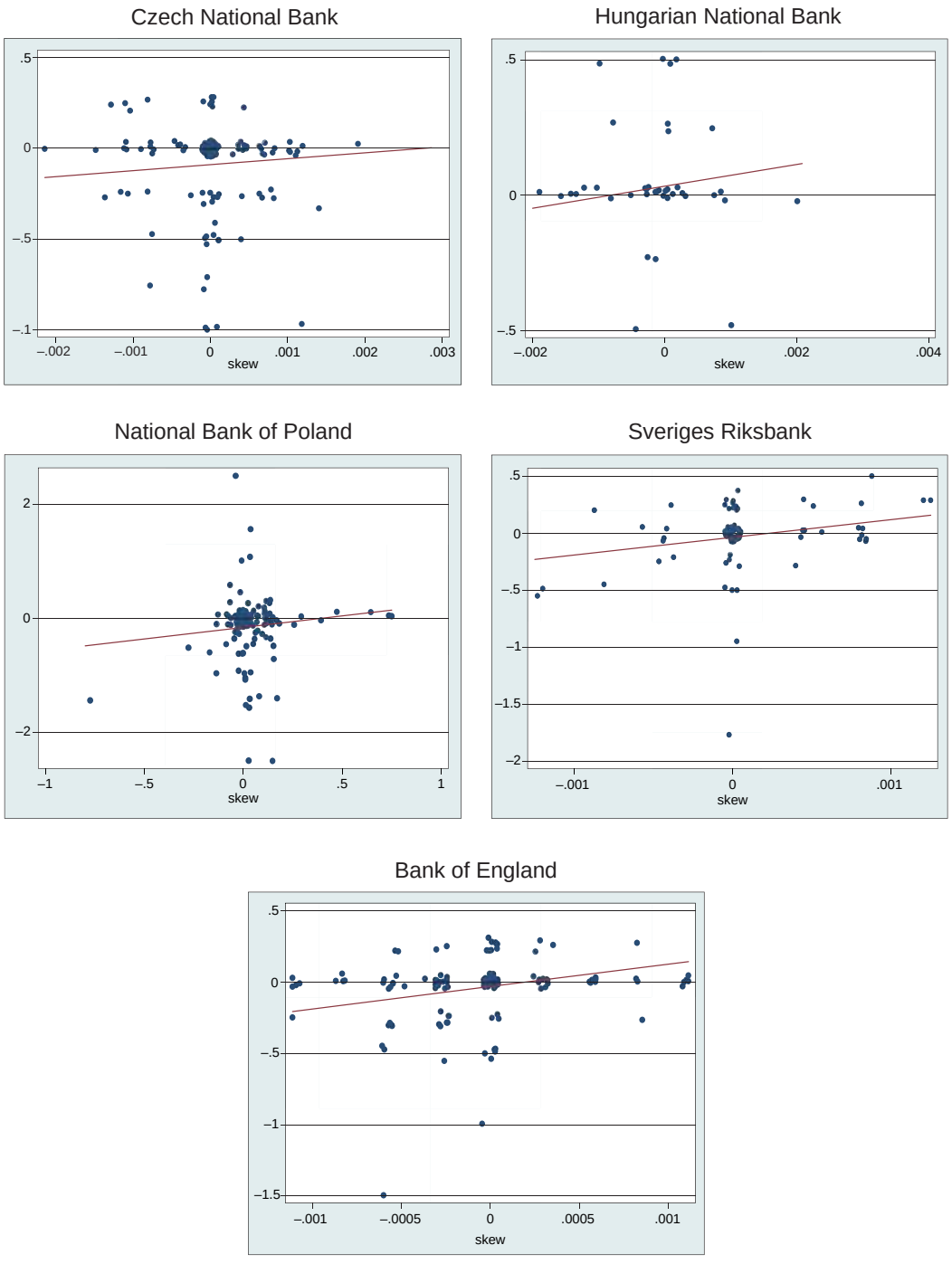
have to be published in the Court and Economic Gazette no sooner than 6 weeks and no later than 12 weeks after the voting took place.

[4] The central banks' voting record release schedules are described in the working paper version (see Appendix 3) of this article (see Horvath et al., 2010).

Figure 1: Actual Voting Record Skew and Future Policy Rate Change



Note: Skew, plotted on the x-axis, is calculated as the difference between the average repo rate voted for by the individual board members and the actual repo rate decision at the given meeting (see (1) for formal definition). The future monetary policy rate change is plotted on the y-axis. Jitter is used for overlapping observations for expositional purposes.

Figure 1 presents the link between the actual voting record $skew$ and the future policy rate change. In all countries, the link seems to be positive, although there are cases where $skew$ can give a noisy signal about future policy, for example when the rates are not changed and one board member dissents. When we look at the various signal-to-noise ratios, we see that there is a certain level of noise in an individual member's voting record, but when more than one member dissents at the same policy meeting, the level of noise declines and is typically well above 50%.[5] We perform a regression analysis in the following section to shed light on the extent to which the voting record gives systematic information for future policy. For the regression analysis, the future policy rate change is stacked in fewer categories, as large-magnitude policy changes happen rarely (more on this below).

[5] More specifically, we calculate the signal-to-noise ratio as follows. When at least 25% of board members dissent – for example at least two members out of seven vote for higher rates – at a particular meeting and the rates are not changed, we classify the $skew$ variable as giving the correct signal when the rates are increased at the next policy meeting. Calculating the signal-to-noise ratio in this way, the ratio is 71% for the Czech Republic, 67% for Hungary, 64% for Poland, 80% for Sweden and 54% for the UK. The ratio is above 50%, indicating that the voting record gives more often a correct, rather than noisy, signal.

3 Empirical Methodology

Our empirical methodology follows the approach developed by Gerlach-Kristen (2004). Gerlach-Kristen (2004) analyses the voting record of the MPC of the Bank of England over the period 1997–2002, while we provide a more comprehensive international comparison. More specifically, we focus on the following five countries that conduct their policies within an inflation-targeting regime: the Czech Republic, the United Kingdom, Hungary, Poland and Sweden.

Following Gerlach-Kristen (2004), we define a measure of disagreement in the bank board, the variable $skew$, as

$$skew_t = average(i_{j,t}) - i_t \tag{1}$$

where $i_{j,t}$ is the interest rate voted for by bank board member j at a monetary policy meeting at time t, and i_t denotes the monetary policy rate. We follow the benchmark study and assess whether the voting record reveals information on future monetary policy by estimating the following baseline regression model for each country separately.

$$\Delta i_{t+1} = a_0 + a_1 skew_{\tau(t)} + a_2 \Delta i_t + u_{t+1} \tag{2}$$

It is assumed in (2) that the interest rate decision is taken at time t. The votes are released at time $\tau(t)$, i.e. in the period between the interest rate decisions at t and $t+1$.[6]

We estimate (2) by an ordered probit technique to reflect the discrete nature of monetary policy rate changes. It is important to emphasize that the discrete dependent variable has been stacked in fewer categories, as some policy change magnitudes, such as 75 basis points, happened rarely. Therefore, the dependent variable was coded in four to

[6] The votes are often released together with the minutes, typically about two weeks after the interest rate decision at t. It is worth emphasizing that we focus on the voting record, as this is the only quantitative information in the minutes; alternatively, one would have to classify the qualitative information contained in the minutes.

five categories depending on the country and defined as follows: large decrease, decrease, no change, hike and large hike ($\leq$-50, -25, 0, +25 and $\geq$+50 basis point changes respectively).[7]

The coefficients a_1 and a_2 are expected to take positive values. As regards the sign of a_1, if some bank board members favour higher rates, $skew$ is positive and a future interest rate hike is more likely, conditional upon the voting record being informative for future policy. As regards the coefficient a_2, it reflects interest rate smoothing and the attempt of central bankers to avoid sudden policy reversals. If a_1 is significant, we can infer that the voting record improves the explanatory power of a 'naïve' model which assumes only smoothing and reactions to shocks.

Our second baseline model extends this naive model by considering the information set available to the financial markets. We approximate their information set from the yield curve. In this extension, we can test whether the information set available to the financial markets contains all the information sets available to the individual committee members. If the financial markets have an identical information set and evaluate the information at least as effectively as the central bank, the information content of the $skew$ indicator should be built into the slope of the term structure of interest rates. In that case, parameter b_1 would be insignificant in our second baseline model (as would b_2 if interest rate smoothing is fully priced into the term structure). In the opposite case, the voting record reveals additional information to the financial markets. To assess these considerations formally, we estimate a regression of the following form:

$$\Delta i_{t+1} = b_0 + b_1 skew_{\tau(t)} + b_2 \Delta i_t + b_3 (i_{\chi(t),L} - i_{\chi(t),S}) + u_{t+1} \qquad (3)$$

As compared to (2), equation (3) now includes an additional term to control for financial market expectations. $i_{\chi(t),L} - i_{\chi(t),S}$ represents the slope of the term structure,

[7] The number of categories is set according to the log-likelihood of competing models. An alternative way would be to test whether the thresholds estimated within the ordered probit model differ significantly from each other. Note that the coding of the dependent variable substantially lowers the potential impact of vertical outliers. As concerns the potential impact of horizontal outliers, we estimate the regressions based on various sub-samples, with the results being affected minimally.

where L and S denote the respective money market maturities[8] and it is assumed that $L > S$ (following Gerlach-Kristen, 2004, we will consider various maturities). $\chi(t)$ denotes the time period between the interest rate decisions, and the data on $i_{\chi(t),L}$ and $i_{\chi(t),S}$ will be from the day before the release of the voting record (thus, $\chi(t) < \tau(t)$).

Regarding our two natural experiment set-ups, we can test whether $skew$ is informative in the period when voting records are disclosed with a considerable time lag, as in the aforementioned case of Poland. We can also test whether the voting ratio is informative when only unattributed voting records are available, as in the aforementioned case of the Czech Republic.

We add two robustness checks to our baseline models. First, we extend the empirical specification by Gerlach-Kristen (2004) to include a measure of dispersion in the voting records, which can serve as an indicator of the degree of uncertainty the board members face. We measure the dispersion of the voting results by the standard deviation of the individual votes.[9]

$$\Delta i_{t+1} = b_0 + b_1 skew_{\tau(t)} + b_2 \Delta i_t + b_3 (i_{\chi(t),L} - i_{\chi(t),S}) + b_4 dispersion_t + u_{t+1} \quad (4)$$

The sign of b_4 is not clear-cut, although more uncertainty may trigger looser monetary policy (Soderstrom, 2002; Bekaert et al., 2010). Second, we also estimate Equation (3) based on the data before the 2008–2009 financial crisis in order to test the sensitivity of the results.

[8] An alternative would be to include interest rate futures or forwards, but these were not available for all the sample countries.

[9] The share of the largest minority could serve as an alternative measure.

4 Empirical Results

This section gives the empirical results on whether the voting record is informative about future monetary policy. We first present our baseline estimates (Equations (2) and (3)) for all countries. Alternative specifications follow.

The results reported in Table 1 suggest that the voting record is indeed informative about future policy rate changes. The lagged repo rate change is typically significant, suggesting that the central banks smooth interest rates to a certain extent and try to avoid sudden reversals in their policies. The variable $skew$ is statistically significant at conventional levels in all countries in the first baseline 'naïve' model as well as in the second baseline model with financial market expectations. The pseudo R-squared – the measure of regression fit – varies from 0.13 to 0.49. Our results for the UK confirm the previous empirical findings by Gerlach-Kristen (2004). In a similar spirit and using the same measure of dissent in the MPC, Fujiki (2005) reaches a similar conclusion for the Bank of Japan, and Andersson, Dillen and Sellin (2006) do likewise for the Riksbank.

In the case of Poland, where the voting record is published with a significant lag separately from the minutes and is not available before the next policy meeting, $skew$ carries additional information available only to board members, not to the financial markets. The adjusted pseudo R-squared increases from 0.23 in the specification with lagged policy rate changes and term structure (not reported) to 0.33 in the specification with lagged policy rate changes, term structure and $skew$. We therefore conclude that despite the time lag the $skew$ indicator contains additional information that can be used by board members. Releasing voting records faster would be beneficial for transparency of monetary policy.

The results for the Czech Republic use the data until 2006:7 in the specification with financial market expectations (column 2 in Table 1). The reason is that from this period onwards the voting record was released only about 3 hours after the monetary policy decision was announced. The monetary policy decision was typically announced at around 1 p.m. and the voting ratio was released at around 3.30 p.m. at a press conference. In principle, we could collect the interbank rates at say 2 p.m. and therefore use more recent data as well, but it has to be emphasized that the interbank market was not very liquid during the financial crisis.

Table 1: Does the Voting Record Predict Repo Rate Changes? Baseline Estimates

$$\Delta i_{t+1} = b_0 + b_1 skew_{\tau(t)} + b_2 \Delta i_t + b_3 (i_{\chi(t),L} - i_{\chi(t),S}) + u_{t+1}$$

Country	Czech Rep.		Hungary		Poland		Sweden		UK	
Sample	2000:7–2008:12		2005:10–2009:2		1998:2–2009:12		1999:1–2009:2		1997:6–2009:2	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged repo changes (b_2)	1.34***	0.46	1.44***	0.97***	0.73***	0.66***	1.03***	0.87***	0.87***	0.99***
	(0.27)	(0.42)	(0.32)	(0.38)	(0.12)	(0.17)	(0.19)	(0.21)	(0.23)	(0.19)
Skew (b_1)	1.74***	1.14***	0.62*	0.62*	0.33***	0.63***	1.58***	1.27***	1.22***	1.58***
	(0.33)	(0.40)	(0.33)	(0.33)	(0.08)	(0.14)	(0.36)	(0.39)	(0.39)	(0.29)
Term structure (b_3)		2.53**		3.92***		1.97***		1.26*		1.52***
		(1.15)		(1.36)		(0.36)		(0.74)		(0.49)
Adj. pseudo R-squared	0.24	0.20	0.34	0.49	0.13	0.33	0.24	0.25	0.20	0.32
Observations	100	75	40	40	142	108	90	90	142	142

Note: * statistically significant at 10% level, ** statistically significant at 5% level, *** statistically significant at 1% level. Standard errors in parentheses. Ordered probit estimation. Term structure stands for difference between 1Y and 3M interbank rate in given country. Data for Czech Republic in column 2 until 2006:7 only. Data on 12M interbank rate in Poland is available only from 2001 onwards, therefore number of observations in column (6) is smaller than that in (5).

Therefore, we preferred to restrict the sample to 2006:7. The results for the Czech Republic also suggest that publishing the voting ratio (without an attributed voting record) may be sufficient to foster a better understanding of the future course of monetary policy.

We also carried out a number of robustness checks. In the baseline specifications, the term structure was defined as the difference between the 12-month and 3-month interbank rate. Alternatively, the term structure is based on different maturities, defined in the regressions presented in Table 2 as the difference between the 3-month and 1-month interbank rate. The results remain largely unchanged. $skew$ remains statistically significant and its estimated size is largely similar. The results are thus is line with Weber (2010), who in a theoretical models shows that the publication of voting records reveals the bank board's opinion heterogeneity and thus provides more information to the financial markets than the publication of the final decision only. Better informed financial markets are then able to better predict the central bank's future behaviour, providing a rationale for the publication of voting records.

Introducing dispersion – a measure of disagreement in the board – as an additional explanatory variable does not change the interpretation of the baseline estimates. The dispersion is statistically significant at 10% level in Hungary and the UK. This suggests that a more dispersed opinion about policy rate is associated with a loosening of policy in these two countries. The dispersion in the other countries is insignificant.

Table 3 reports the results based on the sample excluding the financial crisis period (up to 2007:7). Again, the results remain largely stable. Finally, we included the level of interest rates as additional regressor to tackle the issue that the increase in the policy rate by 0.25 if the rate is at, for example, 1% or when it is at 5% can give different message to the public. Even after the inclusion of the level of interest rate, $skew$ remains statistically significant (these results are available upon request).

Table 2: Does the Voting Record Predict Repo Rate Changes?
Alternative Specifications – Different Maturities in Term Structure and Uncertainty

$$\Delta i_{t+1} = b_0 + b_1 skew_{\tau(t)} + b_2 \Delta i_t + b_3 (i_{\chi(t),L} - i_{\chi(t),S}) + b_4 dispersion_t + u_{t+1}$$

Country	Czech Rep.		Hungary		Poland		Sweden		UK	
Sample	2000:7–2006:7		2005:10–2009:2		1998:2:2–2009:12		1999:1–2009:2		1997:6–2009:2	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged repo changes (b_2)	0.08	0.45	1.22***	0.88**	0.63***	0.69***	0.92***	0.87***	1.15***	0.99***
	(0.43)	(0.42)	(0.37)	(0.40)	(0.13)	(0.18)	(0.19)	(0.21)	(0.18)	(0.19)
Skew (b_1)	0.89**	1.14***	0.50*	0.48	0.35***	0.60***	1.48***	1.29***	1.70***	1.54***
	(0.41)	(0.40)	(0.28)	(0.36)	(0.09)	(0.14)	(0.37)	(0.41)	(0.29)	(0.31)
Term structure (b_3)	10.24***	2.48**	2.10	4.67***	1.61***	1.75***	3.23**	1.24*	0.41***	1.58***
	(2.87)	(1.15)	(1.96)	(1.73)	(0.30)	(0.41)	(1.45)	(0.74)	(0.67)	(0.50)
Dispersion (b_4)		–0.93		–7.88*		–1.03		0.93		–3.99*
		(2.54)		(4.51)		(0.88)		(2.85)		(2.28)
Adj. pseudo R-squared	0.27	0.20	0.35	0.54	0.24	0.41	0.27	0.25	0.29	0.33
Observations	75	75	40	40	142	108	90	90	142	142

Note: * statistically significant at 10% level, ** statistically significant at 5% level, *** statistically significant at 1% level. Standard errors in parentheses. Ordered probit estimation. Term structure stands for difference between 3M and 1M (1Y and 3M) interbank rate in odd (even) columns in given country. Data for Czech Republic in columns 1 and 2 until 2006:7 only. Uncertainty stands for standard deviation of individual votes in bank board. Data on 12M interbank rate in Poland is available only from 2001 onwards, therefore number of observations in column (6) is smaller than that in (5).

Table 3: Does the Voting Record Predict Repo Rate Changes? Alternative Specifications – Data until Financial Crisis Only

$$\Delta i_{t+1} = b_0 + b_1 skew_{\tau(t)} + b_2 \Delta i_t + b_3 (i_{\chi(t),L} - i_{\chi(t),S}) + u_{t+1}$$

Country	Czech Rep.		Hungary		Poland		Sweden		UK	
Sample	2000:7–2007:7		2005:10–2007:7		1998:2–2007:7		1999:1–2007:7		1997:6–2007:7	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lagged repo changes (b_2)	1.24***	0.46	1.50***	1.22	0.64***	0.49***	1.01***	0.67***	0.99***	0.46***
	(0.31)	(0.42)	(0.47)	(0.80)	(0.13)	(0.20)	(0.23)	(0.27)	(0.21)	(0.25)
Skew (b_1)	1.66***	1.14***	0.47*	1.94**	0.28***	0.62***	1.39***	1.84***	1.57***	1.28***
	(0.35)	(0.40)	(0.47)	(0.92)	(0.08)	(0.15)	(0.28)	(0.44)	(0.29)	(0.32)
Term structure (b_3)		2.53**		8.08***		2.44***		2.24*		2.99***
		(1.15)		(3.19)		(0.47)		(0.88)		(0.68)
Adj. pseudo R-squared	0.19	0.20	0.35	0.71	0.11	0.37	0.24	0.25	0.23	0.33
Observations	87	75	22	22	114	80	79	79	123	123

Note: * statistically significant at 10% level, ** statistically significant at 5% level, *** statistically significant at 1% level. Standard errors in parentheses. Ordered probit estimation. Term structure stands for difference between 1Y and 3M interbank rate in given country. Data until 2007:7 exclude global financial crisis period. Data for Czech Republic in column 2 until 2006:7 only. Data on 12M interbank rate in Poland is available only from 2001 onwards, therefore number of observations in column (6) is smaller than that in (5).

All in all, the results suggest that the voting record bears relevant information about future monetary policy for all the countries in our sample and, in consequence, serves as a useful tool for improving the transparency of monetary policy. On a more broader level, our findings comply with previous studies on the behavior of individual board members (see, for example, Chappell, McGregor and Vermilyea 2005; Bhattacharjee and Holly 2006, 2010; Brooks, Harris and Spencer 2008; Besley, Meads and Surico 2008; Hansen and McMahon 2008 and Riboni and Ruge-Murcia 2008b) showing that there is often significant evidence of heterogeneity among them. In combination with the assumption that monetary policy is better conducted in an environment with no information asymmetry between the central bank and the markets, the publication of voting records revealing the heterogeneity of the bank board members is desirable.

5 Concluding Remarks

We examine whether the voting records of central bank boards or monetary policy committees are informative about future monetary policy. For this reason, data on five inflation targeters (the Czech Republic, Hungary, Poland, Sweden and the United Kingdom) that release voting records are collected. It is found that in all these countries the voting records are indeed informative about future monetary policy and thus in principle improve monetary policy predictability.

More specifically, it is found that if a minority votes for higher rates than the majority, it is more likely that there will be a rate hike at the following meeting. This result is robust to controlling for financial market expectations as well as different sample periods. The result for Poland suggest that committee members tend to put the same effort into forming their views no matter whether their voting is published soon after the meeting or after a longer period of time. Hence, releasing voting records faster would be beneficial for both the public and the central bank, which could gain credibility.

Similarly to Gerlach-Kristen (2004) the results in this paper hold regardless of whether the voting record is attributed or not. In consequence, where there are concerns that attributed voting records might expose individual board members to some external pressure (such as in the case of a monetary union with board members not voting for national interests), the voting results can be published as non-attributed and still contribute to a better understanding of monetary policy. All in all, monetary policy transparency can be improved by releasing the voting record in a timely fashion.

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Appendix: Data

Voting records

Voting records were collected from the following central banks (start and end dates of the sample in brackets): the Czech Republic (1998:1–2008:12), the United Kingdom (1997:6–2009:2), Hungary (2005:10–2009:2), Poland (2000:2–2008:12) and Sweden (1999:1–2009:2). Typically, voting data are available at a monthly frequency.

As regards the Czech Republic, the 1998:1–2000:4 voting results were available only in transcripts that are published with a 6-year delay. Therefore, the baseline estimates for this country are based on the data from 2000:7 onwards. In addition, the baseline estimates for the Czech Republic are restricted until 2006:7 in the specification with financial market expectations. The reason is that from this period onwards the voting record was released only about 3 hours after the monetary policy decision was announced. The monetary policy decision was typically announced at around 1 p.m. and the voting ratio was released at around 3.30 p.m. at a press conference. In principle, the interbank rates could have been collected at, say, 2 p.m. and therefore more recent data could have been used as well, but it has to be emphasized that the interbank market was not very liquid during the financial crisis. In light of this fact, we restrict the data for the Czech Republic to the period until 2006:7.

Interbank rates

Interbank rates are collected to capture financial market expectations. The source of the data is Datastream. Specifically, we use PRIBOR rates for the Czech Republic, BUBOR rates for Hungary, WIBOR rates for Poland, STIBOR rates for Sweden and LIBOR rates for the UK for the following maturities: 1 month, 3 months and 12 months.