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**The use of staff policy recommendations  
in central banks**



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**The use of staff policy recommendations in central banks**

(A stáb véleményének felhasználása a központi bankok döntéshozatalában)

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# Abstract

The focus of this paper is on the use of staff policy recommendations in central banks. Based on the responses to a recent survey conducted by the Bank of International Settlements, the paper tries to answer two questions. (1) How (to what extent) do central bank decision-makers make use of staff views regarding the appropriate policy? (2) What institutional features determine the extent to which staff policy views are utilised by decision-makers? The ‘weight’ with which staff policy views are taken into account is proxied by how explicitly they are presented to the policy board. Based on the survey responses about how staff policy views are presented, a Staff Recommendation Explicitness Index (SREI) is constructed for each central bank surveyed. SREI is then regressed on a number of candidate explanatory variables. The results suggest that the use of staff policy views, proxied by SREI, is negatively related to the size of the policy committee. Furthermore, the use of staff policy views seems more pronounced if the committee is consensus-seeker and if the monetary regime is inflation targeting. Tentative explanations are offered for each of these findings.

**JEL classification:** D71, E58.

**Keywords:** monetary policy, central bank staff, committee, decision-making.

## Összefoglalás

A tanulmány a jegybanki szakértői stábok által készített monetáris politikai javaslatok döntéshozók általi felhasználását vizsgálja. Egy, a Nemzetközi Fizetések Bankja (BIS) által a közelmúltban készített kérdőíves felmérés alapján két kérdésre próbálunk választ találni. 1) Hogyan (milyen mértékben) használják a jegybanki döntéshozók a stáb véleményét a megfelelő monetáris politika alakításában? 2) Milyen intézményi jellemzők határozzák meg azt, hogy a döntéshozók mekkora mértékben hasznosítják a stáb véleményét? Elemzésünkben a stábvélemény figyelembevételéhez tartozó „súlyt” azzal reprezentáljuk, hogy ez a vélemény mennyire explicit formában kerül bemutatásra a döntéshozó testületben. A kérdőíves felmérésnek a stábvélemények megfogalmazására, explicittségére vonatkozó válaszai alapján – minden vizsgált jegybank esetében – létrehoztuk egy mutatót (Staff Recommendation Explicitness Index, SREI). Az SREI alakulását számos szóba jöhető változóval próbáljuk magyarázni. Eredményeink szerint a stábvélemény (SREI-vel reprezentált) hasznosítása negatív kapcsolatban van a monetáris politikai döntéshozó testület méretével. További eredmény, hogy a stábjavaslatok felhasználása hangsúlyosabb olyan jegybankokban, ahol a döntéshozatali stílus konszenzuskereső, illetve ahol a monetáris politika inflációs célkövető rendszerben működik. A fenti eredményekre a tanulmány bemutat néhány lehetséges magyarázatot.

# 1 Introduction

There is a growing literature on central bank governance issues. The main focus of this line of research is the structure and functioning of policy boards, i.e. the decision-making bodies in central banks that are responsible for monetary policy. These studies analyse the benefits of collective versus individual decision-making, the optimal size of policy boards, the role of external board members, decision-making styles (collegial vs. individual), voting procedures and communication strategies.

Few attempts have been made at analysing the interactions of the decision-making body and central bank staff. Perhaps because of lack of data, the literature so far has not paid too much attention on how the information necessary to make monetary policy decisions is collected. Indeed, the implicit assumption in many of these papers is that policy board members gather their own information about the economy individually, they have their own individual ‘model’ of the economy and, based on these two and their preferences, they make their choice. In practice however, the information necessary to make decisions is usually gathered, filtered and structured predominantly by the central bank staff and passed on to the policy board collectively. Needless to say, individual policy board members may depart from the assessment presented by the staff. However, by serving as a common starting point, the set of information compiled by the staff is a very important element of the decision-making process.

This staff input to the decision-making process may vary in depth and breadth. At one extreme, it may simply consist of an assessment of the state of the economy. It can go further to include forecasts and policy simulations. It may even present a set of policy alternatives for a specific meeting of the policy board. Finally, at the other extreme, it may include an explicit policy recommendation by the staff, as a synthesis of all this information.

It is this last bit of staff input that this paper is about to investigate. Two major questions are addressed. First, to what extent decision-making bodies in central banks make use of staff policy views? Second, what institutional features determine the degree to which staff policy views are taken into consideration by decision-makers?

The nature of this investigation is largely empirical, made possible by new survey data on the provision of central bank staff policy analysis and advice to policy boards compiled by the Bank of International Settlements (BIS) in 2007.

The motivation of the paper is twofold. First, the paper may contribute to the literature of central bank governance by analysing staff/policy board interactions, a dimension that so far was largely uncharted by this line of research. Second, by presenting the relevant practice, it makes benchmarking possible for the central banking community.

The structure of the paper is the following. Section 2 sets out some useful concepts. Although no overarching theoretical framework for analysing the role of staff input is presented, there are some findings in the central bank governance literature that are relevant for this topic. Section 3 gives a brief description of the survey questionnaire and presents some stylised facts about the responses. Section 4 describes the construction of an index of staff recommendation explicitness, used here as a proxy measure for the degree to which policy views from the staff are utilised. This index is then calculated for all survey respondents, which gives a picture of central bank practice regarding the use of staff policy views. Section 5 is a regression analysis which attempts to identify the institutional features that may influence the explicitness of staff policy recommendations. Finally, Section 6 concludes.

## 2 Conceptual framework

One does not need a comprehensive survey to see that central banks differ in how their decision-makers make use of staff policy views. Anecdotal evidence suggests a large variation in this practice. At one extreme, there are central banks that require a number of (non-voting) senior staffers each to give their written recommendations on the right policy action before each policy meeting. At the other extreme, there are central banks where staff policy views, if formulated at all, are never made explicit for decision-makers.

The first, most general framework that comes to mind when trying to explain the extent to which staff policy views are utilised is that of supply (by the staff) and demand (by decision-makers). There are a number of reasons to argue that the supply of staff policy views is pretty elastic, i.e. that the actual degree to which these views are utilised is demand-determined. First, it is easy for the staff to formulate these views since it has already gathered, processed and organised all the necessary information as part of its primary job. It is only one more small step to draw the policy conclusion. Second, once it has formulated a policy view, staff has an incentive to pass it on to decision-makers because of a reputation externality. Staff members probably care about their professional reputation (e.g. their prospective labour market value), which is difficult to distinguish from the institutional reputation of their central bank. Since the institutional reputation of a central bank depends largely on the proper conduct of monetary policy, if the staff has a view about this, it is in its interest to share it with decision-makers. Third, staff may formulate and share a policy view simply because it is told to do so by decision-makers, some of whom usually are line managers for the staff.

The conjecture that the use of staff policy views is demand-determined does not reveal that much about the subject though. The next step is to investigate the drivers of the ‘demand side’, that is, the benefits and costs for policymakers to consider staff policy views when making a decision. One way to start this is to take a policy board consisting of  $n$  voting members, with  $n$  potentially different views on the right policy move. They have to decide whether to consider an additional view, that of the staff, increasing the number of views to  $n+1$  (or more, if more than one view from the staff are considered). Note that this problem is very similar (though not identical) to that of the ‘optimal MPC size’, an issue with sizeable coverage in the central bank governance literature.

The workhorse framework for analysing the optimal MPC size (see Sibert, 2006; Berger, Lybek and Nitsch, 2006; Erhart and Vasquez Paz, 2007) compares information pooling benefits (increasing in  $n$ ) with information processing costs (also increasing in  $n$ ).

The information pooling benefits of having an extra member on the policy board are usually illustrated with the Condorcet Jury Theorem (CJT). The CJT in this context would assume that each of the  $n$  members on the board make a draw  $x_i$  about the right policy move. The draws are independent and identically normally distributed with mean  $\mu$  and variance  $\sigma^2$ , that is,  $x_i \sim N(\mu, \sigma^2)$ . If the decision is made by simply taking the average of the draws, then increasing the size of the board would improve the accuracy of decision-making, as  $\bar{x}_i \sim N(\mu, \sigma^2/n)$  by the law of large numbers. Note that the assumptions of independent draws and of a voting procedure consisting of simple averaging (no interaction between members) are crucial for this result to hold as well as an additional one that board members do not vote strategically.

Collective decision-making is rarely as simple as taking an average of unarticulated views. It usually includes a discussion phase, when decision-makers share their arguments, try to convince each other, possibly form coalitions, etc. It is easy to see that this exercise gets more complex, time-consuming and less efficient, i.e. involves more information processing cost as board size  $n$  increases.

In this framework, the optimal MPC size is where the marginal information pooling benefit of having an extra member on the committee equals the marginal information processing cost.

### SPECIAL FEATURES OF STAFF POLICY VIEWS

The ‘information pooling benefits vs. information processing costs’ framework frequently used for analysing optimal MPC size may give some insights regarding what determines the use of staff policy views. However, there are important differences



between taking on an extra committee member and considering the staff's policy view. The special features of taking staff policy views on board may in some respect be more beneficial than adding an extra member to the committee, but in other ways they represent relative disadvantages as well.

Considering staff policy views is relatively more beneficial because of the following special features.

- (1) *No votes attached.* As argued above, most information processing costs emerge at the discussion phase of decision-making as committee members in this phase usually try to convince each other about the right policy move. Note that this is especially the case if the committee strives for a consensus decision. Since the staff does not vote, they don't have to be convinced. Therefore their policy views may be utilised in the decision-making process at relatively little information processing cost.
- (2) *Well-informed.* The staff's primary job is to process all the information necessary to make a monetary policy decision. Being experts on analysing and forecasting the macro economy and financial markets, they are especially well-informed, at least about the premises of a decision. Indeed, Romer and Romer (2008) show that staff forecasts of inflation and unemployment at the US Fed tend to outperform FOMC forecasts. Staff may also have (individually or collectively) second thoughts about their own forecast which they would find hard to pass on to decision-makers but would take into account if they themselves had to form a view about the right policy.
- (3) *Already a pooled information.* The staff consists of many members, so to the extent that the staff policy view presented to decision-makers takes account of individual staff member views, it already brings information pooling benefits. If for example, the staff policy view is formulated by taking the average of  $m$  individual staff members', the Condorcet Jury Theorem implies that the sampling variance around the 'right decision' is  $\sigma^2/m$ , that is, smaller than that of individual staff members ( $\sigma^2$ ). This means that for the policy board there is more information pooling advantage in considering the staff's policy view than taking on an additional voting member.<sup>1</sup> Of course, this pooling advantage of taking staff policy views on board is largely reduced if staff opinion is dominated by one or a few individuals.

The disadvantages of taking on staff policy views (relative to adding an extra member to the MPC) are the following.

- (4) *More subject to 'groupthink'.* Groupthink is a term borrowed from social psychology (see Janis, 1982). It describes a type of collective thought where strong group cohesiveness prevents group members to give appropriate consideration to relevant decision alternatives. Experience suggests that groupthink may lead to extreme and irrational decisions. Factors that increase the chance of groupthink are (1) similar professional background of group members, (2) insulation of the group from outside opinions and analyses and (3) directive leadership. In case of central bank staffs (at least the part engaged in processing information for monetary policy decision-making), it can be argued that factors (1) and (2) are usually present. First, this part of the staff consists predominantly of professional macroeconomists, with many of them pursuing long careers in central banking. Therefore their professional background and experience is rather homogeneous. Second, since central banking in any given country is usually a monopoly, central bank staffs supporting this activity do not have to face classic peer groups (at least not in their home countries). Private sector macro-analysts may do somewhat similar jobs, but their resources and, consequently, the depth and breadth of their analysis is typically more limited, therefore they do not classify as serious peers. The result could be that there is little relevant external scrutiny and the staff's opinion formation process becomes relatively isolated.

Note that there are institutional solutions to counterbalance the tendencies towards groupthink. Excess group cohesiveness may be reduced if internal competition within central bank staff is actively encouraged. This may take the form of asking for policy advice from different departments or individuals separately.

- (5) *Tends to be more aligned with internal members' view.* Some studies document systematic differences between policy-related behaviour of internal and external members of central bank decision-making committees (Gerlach and Kristen, 2007; Spencer, 2006). Staff policy opinion may be closer to the views of internal members of the policy committee for a

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<sup>1</sup> Assuming of course that staff members' and policy board members' draws about the 'right decision' are identically distributed.

number of reasons. First, in many occasions internal members are career central bankers, i.e. they are coming from the staff, sharing the same background and possibly the same bias. Second, internal members are usually line managers of the staff, therefore there may be a tendency in the staff to spontaneously align its view with that of their bosses in order to avoid conflicts, increase the chances of promotion, etc. Third, there may be explicit or implicit pressure or guidance from internal members on the staff to bend their policy opinion towards that of their bosses. Needless to say, the two latter phenomena are clearly sub-optimal in terms of long-term institutional efficiency, but that does not mean that they are not present at a given point in time.

If staff policy views are closer to that of internal members of the policy board, external members may oppose to making these views explicit during the decision-making process. Surprisingly, it may serve the interest of internal members as well if staff policy views which are too much aligned with their own are not represented during policy deliberations. Caillaud and Tirole (2007) analyse in a game theoretic setting the factors that influence the chances of persuading a group of decision-makers (in our context the central bank policy board) by a ‘sponsor’ (in our context the governor, or the group of internal members) of an idea, project, etc. (a particular rate decision). They show that the sponsor’s ability to get his project approved by the group depends on the extent of congruence among members (“internal congruence”) and between them and the sponsor (“external congruence”). One of their surprising findings is that, given that there is some asymmetry within the group, an increase in “external congruence” actually reduces the chances for the sponsor to acquire qualified majority for his project. The intuition they offer for this is that strong external congruence may mean that the most favourable group members become “too partial”, quickly rubber-stamping the sponsor’s initiative and preventing him to design persuasion cascades to bring on the less favourable ones.

Applying these insights to the central bank setting, if staff policy views are closer to that of the governor (who in some cases may act as the “sponsor” of a rate-setting idea towards the policy board), then taking them on board during the policy debate is a form of increasing external congruence, and as such, may prove to be counter-productive for the governor.

This completes the description of the benchmark conceptual framework (information pooling benefits vs. information processing costs) for analysing optimal MPC size and the departures from this framework when applied to the use of staff policy views. The insights gained here will be used in the empirical part of the paper, in the selection of potential explanatory variables for the use of staff policy views.

### 3 About the survey questionnaire

The empirical analysis is based on the responses to a comprehensive survey carried out by the BIS in July-September 2007. The survey questionnaire, titled “*The provision of monetary policy analysis and advice by central bank staff to central bank policy boards*”, is a 20-page multiple-choice document, consisting of four main sections:

- Decision-making framework
- Staff input to decision-making (forecast, risk assessment, policy advice)
- Guidance by decision-makers
- Evolution of the staff input process

A comprehensive review of the survey results is given by Nelson (2008). The focus of this paper is much narrower than that of the questionnaire as here only the part dealing with the content and presentation of staff policy advice is analysed. It is important to note that the questionnaire makes a distinction between policy “advice” (synonymous with “policy recommendation”) and policy “analysis” (e.g. pros and cons of policy options, their likely consequences, etc., but no explicit policy recommendation).

The questionnaire was sent out to central banks, targeting at the chief economist or equivalent level. By the end of the survey period 37 responses were received, of which 7 was anonymous. The sample of respondent central banks is well-balanced with a roughly even split between industrial (19) and emerging (18) countries, as well as inflation targeters (17) and other monetary regimes. The sample also includes 9 national central banks (NCBs) from the European System of Central Banks (ESCB). Note that although the NCBs do not pursue independent monetary policies, their governors are members of the ECB’s decision-making body (the Governing Council). As decision-makers, they may ask for policy advice from the staff of their national central banks. Therefore these central banks qualify for inclusion in our analysis, since we are not interested in the decision-making itself but in the channelling of staff policy views to decision-makers.

## 4 The use of staff policy views

The analysis of the use of staff policy views in central banks should start at whether staffs give any policy recommendations at all. The responses for the question asking for this reveal that in the majority of central banks, staffs provide some form of policy recommendations (Table 1). In slightly more than half of the responding central banks, this seems to be done on a regular basis.<sup>2</sup> Moreover, this result does not depend on economic development or the monetary regime. An interesting result is the prevalence of staff policy recommendations in ESCB member national central banks.

However, the mere existence of staff policy recommendations does not reveal the whole story about how these views are utilised. The extent to which policy boards are interested in the staff's policy view may vary from central bank to central bank. These differences are difficult to measure. In this analysis the 'weight' with which a staff policy view is taken into account is proxied by how explicitly it is presented to the policy board. It is reasonable to assume that if an MPC pays more attention to the staff's policy opinion it will require this opinion to be presented more explicitly. If staff policy views are presented very explicitly (e.g. senior staff members give their individual policy opinions in writing) it is taken as an indication of more use of staff policy views by the policy board than in a case when staff opinion is less explicit (e.g. when the policy board member supervising the staff gives his/her impression about the 'average' staff policy opinion during the rate-setting meeting). Having accepted this relationship between the explicitness and use of staff policy advice, the next step is to measure explicitness.

### CONSTRUCTING THE STAFF RECOMMENDATION EXPLICITNESS INDEX (SREI)

In order to construct an index which captures how explicitly policy recommendations are presented in each central bank, survey responses about certain features of the policy advice (written/oral, multiple/single, etc.) were used. Four principles formed the basis of constructing the index:

1. Allowing multiple recommendations (differing staff views) to be presented is more explicit than requiring staff to present a single view
2. Written recommendations (i.e. policy advice documents) are more explicit than oral ones
3. An oral recommendation is more explicit if it is supplemented by a policy analysis document (i.e. one which contains no recommendation, but an elaboration of policy options and their likely consequences by staff)
4. An oral recommendation is more explicit if presented by a non-voting staff member than if presented by a voting member

**Table 1**

#### Provision of staff policy recommendations

(per cent of responses)

Type of central bank (sample size)	Regularly	Occasionally	Never
Industrial (19)	63	16	21
Emerging (18)	50	11	39
Inflation Targeter (17)	59	6	35
Non-IT (20)	55	20	25
ESCB NCB (9)	67	33	0
Whole sample (37)	57	14	30

<sup>2</sup> The breakdown provided here differs slightly from that of Nelson (2008), who reported 67% of central banks having regular staff recommendation and 47% of them having explicit staff recommendation. The reason may be that the samples are somewhat different: Nelson (2008) only covers the survey responses of the 30 central banks that participated at the 2007 BIS Autumn Economists' Meeting, while the present analysis covers all 37 survey responses.

Based on the survey responses, one can get a picture on the institutional solution in each bank. The four principles used here implied  $2^4=16$  possible combinations (plus the one of no policy recommendation at all), but some non-sensical could be eliminated. Altogether 10 different ways of channelling staff recommendations to decision-makers were identified.

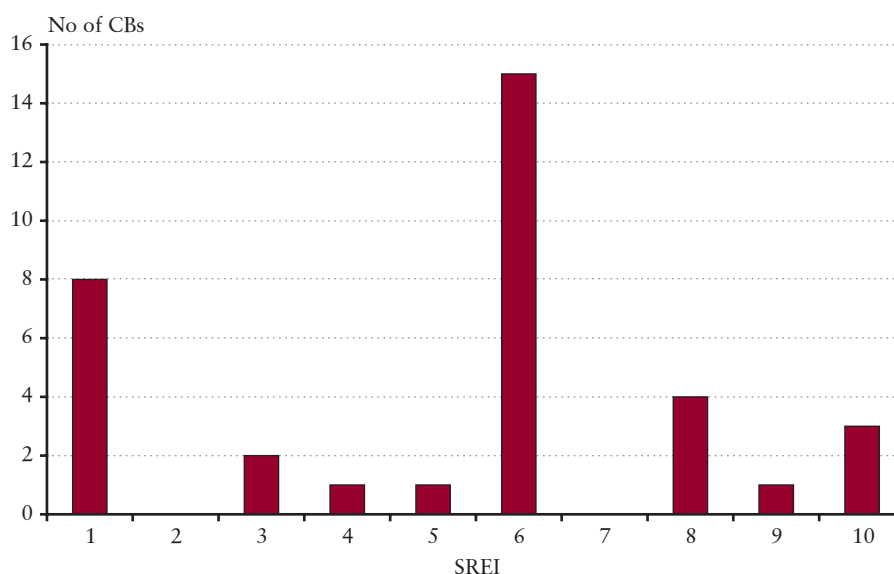
The ranking of the four principles above represents the relative ‘strength’ or contribution to explicitness associated with each principle. For example, principle 1 dominates principle 2, which implies that multiple policy advice given orally is assumed to be more explicit than single policy advice given in writing.

Having the ordering of the principles at hand, one can rank the potential institutional solutions according to their explicitness. The Staff Recommendation Explicitness Index (SREI) for a given central bank was defined simply as the rank of the institutional solution identified from the survey response of that bank. The institutional solutions and their corresponding SREIs are listed in Table 2.

The histogram of SREI (Chart 1) suggests that among the central banks covered by the survey, the most frequent institutional solution is No.6, i.e. a written policy recommendation representing staff consensus.

### Chart 1

Frequency of SREI



**Table 2**

**Staff Recommendation Explicitness Index (SREI)**

SREI	Institutional solution
10	Multiple written recommendations (multiple policy advice documents)
9	Single policy advice document, dissent indicated
8	Single policy advice document, multiple views expressed orally
7	No document, multiple views expressed orally
6	Single policy advice document, consensus view
5	Single policy <i>analysis</i> document, consensus view expressed orally by staff member
4	Single policy <i>analysis</i> document, consensus view expressed orally by voting member
3	No document, consensus view expressed orally by staff member
2	No document, consensus view expressed orally by voting member
1	No explicit policy recommendation

SREI captures the degree of staff recommendation explicitness that is institutionalised in a given central bank. However, actual explicitness from time to time may be higher than the institutionalised level. In certain circumstances, e.g. facing unusual uncertainty or a stress situation, staff that otherwise gives no recommendation may be asked to present its opinion or, in central banks where a consensus staff view is the institutional solution, a number of staff members may be asked for their individual opinions. It is more difficult to imagine situations in which the deviation from the institutionalised solution is towards less explicitness - once it becomes regular for staff to give a recommendation, neither decision-makers can really mute it opportunistically, nor staff can deny giving it. This means that SREI as an indicator of actual explicitness may be biased downwards. Notwithstanding this shortcoming, it is still a good (and, in fact, the only available) proxy for the typical weight with which the staff opinion is taken into account, since it expresses typical (= institutionalised) explicitness.

## 5 Determinants of the use of staff policy views

The insights gained in the conceptual part of the paper suggest that the following explanatory variables may be relevant when one is looking for the determinants of the use of staff policy views.

*Size of the policy board.* The Condorcet Jury Theorem suggests that the marginal information pooling benefit for an MPC from taking the staff opinion on board gets smaller as the MPC's size increases. Therefore one would expect a negative relationship between the committee size and the use of staff policy views. Data on (de jure) policy board sizes was collected from the websites of the central banks in the sample.

*Decision-making style.* In the conceptual part, it was argued that information processing costs are higher for a consensus-seeking committee than for an individualistic committee. This implies that when a consensus-seeking committee wants to increase the benefits of information pooling, it will be more willing to do so by asking for staff policy advice than an individualistic committee, simply because the alternative (taking on extra voting members) involves more information processing costs in the case of consensus-seeking. Another argument is that committees striving for a consensus may be more in need of a starting point for consensus seeking, i.e. an 'impartial' opinion that is coming from outside the committee. For these reasons, one would expect that consensus-seeking is positively related to the use of staff policy views.

The decision-making style of a central bank board is not easy to identify. Here an indirect approach was used. It is often argued that the choice of communication strategy is affected by decision-making style (see e.g. Blinder, 2007; Blinder and Wyplosz, 2004). The publishing of voting records and minutes after policy board meetings is considered consistent with the individualistic decision-making but not with consensus-seeking. Accordingly, decision-making in a central bank was defined as consensus-seeker if (a) it is collective and (b) *neither* minutes *nor* a voting record is published after policy meetings. Data about this was acquired from central bank websites. A 'consensus' dummy variable was constructed, which takes the value of one if the board is defined consensus-seeker either explicitly or in the above indirect manner.

*Monetary regime.* Explicit inflation targeting is generally considered as a more information-intensive way of doing a central bank's job than alternative monetary regimes. Detailed macroeconomic forecasts have to be prepared and communicated to the public regularly. Monetary policy decisions have to be communicated in the context of the inflation forecast. In feature (3) in the conceptual part it was argued that staff policy opinion is very well informed, especially about the premises (e.g. the forecast). In an inflation targeting framework such an informed policy opinion may be relatively more appreciated by the policy board than in other monetary regimes. The questionnaire asked about the monetary regime. An IT dummy variable was constructed, which takes the value of one if the respondent indicated inflation targeting as the monetary regime in place.

*Guidance by internal members.* If feature (5) is present, i.e. staff policy views are more aligned with those of internal policy board members, then internal members have an incentive to promote staff policy views in decision-making. However, external members may realise this and prefer to limit the use of staff policy views. Therefore, how alignment is related to the use of staff policy views is a priori ambiguous. Alignment is difficult to capture empirically. The questionnaire contained a section on guidance by decision-makers to the staff during the processing of information necessary for decision-making. As it was mentioned in discussing feature (5), one reason for the alignment may be guidance by internal members on the staff when the latter is formulating a policy opinion. Although no questions in the questionnaire asked about such guidance directly, there was a question which asked whether decision-makers may give guidance on the set of policy alternatives that would be included in the policy advice document submitted to the board. Clearly, this in itself does not necessarily mean pressure on the staff towards formulating a policy opinion. Nevertheless, it was used as a proxy variable for internal members' influence on the staff's policy view formulation process. Practically it is a dummy variable which takes the value of one if an internal member gives guidance on the set of policy alternatives.

*Composition of the policy board.* No insight was gained from the conceptual framework regarding the potential effect of the presence of external board members on the use of staff policy views. Nevertheless, an 'externals' dummy variable was included, which takes the value of one if there are external members on the policy board (data again was gathered from central bank websites). One might argue, for example, that the addition of external members brings a large jump in the information

pooling benefits (because their background is usually different from that of the internal members) for the board, so that there is less incentive to resort to staff policy advice. Another argument would be that if staff policy views tend to be more aligned with internal members' views, external members may detect that and object to an explicit presentation of staff policy views at the policy meetings (see above).

## ESTIMATION PROCEDURE AND RESULTS

SREI was regressed on the explanatory variables. The regression sample was smaller (29 cross-sectional observations) than the full set of survey responses, mostly because the anonymity of some responses prevented us from constructing the explanatory variables that were not included in the questionnaire and had to be looked up in central bank websites.

The dependent variable SREI is basically a ranking, i.e. it reflects know the order of, but not the actual distance between the different institutional solutions. Therefore OLS, which assumes equal distance between subsequent values of SREI is not the ideal estimation method. Ordered Probit is more flexible in this respect. Both estimation methods were used and the results were qualitatively the same.

Estimation results from OLS and Ordered Probit are presented in Tables 3 and 4, respectively. Because of indications of potential multicollinearity, a number of specifications were estimated.

**Table 3**

**Estimation results: OLS**

(dependent variable: SREI)

<b>Constant</b>	6.36***	6.55***	6.28***	6.05***	5.77***	5.74***	6.12***	6.26***	5.75***	5.74***
<b>MPC size</b>	-0.32***	-0.28**	-0.29***	-0.26**	-0.41***	-0.35***	-0.38***	-0.39***	-0.37***	-0.36***
<b>D_Consensus</b>	2.19*				2.07*	2.32**		2.36**	2.37**	2.14*
<b>D_Externals</b>		0.97			0.97		1.60	1.31	0.44	
<b>D_Guidance</b>			1.91*		0.99		2.27**			0.51
<b>D_IT</b>				1.75*	1.14	1.88*			1.72	1.67
<b>R<sup>2</sup></b>	0.26	0.17	0.25	0.24	0.38	0.37	0.29	0.30	0.37	0.37
<b>adjusted R<sup>2</sup></b>	0.21	0.11	0.19	0.19	0.25	0.29	0.21	0.22	0.27	0.27

All specifications where at least one dummy was significant are presented.

\*\*\*, \*\* and \* indicate significance at 1, 5 and 10% significance level, respectively.

Preferred specification in shaded column.

**Table 4**

**Estimation results: Ordered probit**

(dependent variable: SREI)

<b>MPC size</b>	-0.13***	-0.13**	-0.13***	-0.13***	-0.21***	-0.17***	-0.19***	-0.18***	-0.18***	-0.13**	-0.23***	-0.20***
<b>D_Consensus</b>	0.82*				0.89*	0.97**	0.99**	0.89*	0.92*		0.73	
<b>D_Externals</b>		0.48			0.49		0.21		0.68	0.01	1.00	0.87
<b>D_Guidance</b>			0.90*		0.47			0.24			0.97*	1.12**
<b>D_IT</b>				1.02**	0.81	1.15**	1.09**	1.04**		1.01**		
<b>pseudo-R<sup>2</sup></b>	0.10	0.16	0.13	0.14	0.13	0.16	0.12	0.16	0.08	0.15	0.11	0.12

All specifications where at least one dummy was significant are presented.

\*\*\*, \*\* and \* indicate significance at 1, 5 and 10% significance level, respectively.

Preferred specification in shaded column.



Committee size was significantly negatively related to SREI suggesting that larger MPCs tend to prefer less explicit staff policy advice. This is in line with the prior insight from the Condorcet Jury Theorem. This result was quite robust in different specifications and samples. In particular, it was still significant if ESCB member national banks and/or large hub-and-spokes type committees (US Fed FOMC and ECB Governing Council) were omitted from the sample.

The significance of the rest of the explanatory variables (the four dummies) was not so prevalent and depended on the specifications used. One exception was the dummy capturing the presence of external members, which was not significant in any specifications and at any significance levels.

The consensus dummy was significant and positive in most specifications, suggesting that consensus-seeking committees welcome more explicit staff advice than individualistic committees. As mentioned earlier, a potential explanation for this finding is that committees striving for a consensus may be more in need of an starting point for consensus seeking, i.e. an ‘impartial’ opinion that is coming from outside the committee. The significance of the consensus dummy disappeared only in specifications where guidance were included. This suggests some multicollinearity between consensus-seeking and guidance which is reinforced by the sizeable positive pair-wise correlation between these two variables.<sup>3</sup> This is an interesting side result, suggesting that where the committee is consensus-seeking, there is tendency from the part of the internal members to exert some influence on the ‘impartial’ staff policy view.

Guidance parameters were positive but rarely significant and almost always so in specifications which did not include the consensus dummy. This suggests that guidance in itself does not have a large effect on the use of staff policy opinion. Instead, its occasional significance is probably derived from functioning practically as a proxy for consensus-seeking.

The inflation targeting dummy was significant in a number of specifications, especially in ordered probit models. The estimated parameters are positive suggesting that in an information-intensive monetary regime, such as inflation targeting, the use of staff policy opinion by decision-makers is more pronounced.<sup>4</sup>

To sum up the results of the regression analysis, it seems that the use of staff policy views by central bank policy boards is influenced by the size of the policy board, its decision-making style and the monetary regime in place. The signs of the estimated parameters of these variables are in line with the effects a priori expected. Larger policy boards tend to make less use of staff policy views while consensus-seeking and inflation targeting seems to increase the interest of decision-makers in the policy opinion of the staff. In specifications where only these three explanatory variables are used, all of their estimated parameters are significant at least at 10% significance level, notwithstanding the estimation method. Choosing this as a preferred specification (see shaded columns in Tables 3 and 4), one could say something about the magnitudes of effects, too. Increasing the board size by 3-5 members (depending on the estimation method used) would reduce the 10-notch SREI by one notch.<sup>5</sup> Consensus-seeking in the board and inflation targeting each would increase the SREI by 1-2 notches, again depending on the estimation method used.

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<sup>3</sup> The correlation coefficient is 0.4.

<sup>4</sup> This results seems to contrast with the data in Table1, where inflation targeters have the second highest share of central banks in which staff recommendation is never provided. Note however, that at the same time a higher share of IT central banks provide staff recommendations regularly than non-IT banks. This, coupled with the results from the econometric analysis suggests that the practice of IT central banks is somewhat bipolar: either they do not allow staff recommendations at all or make them very explicit.

## 6 Conclusion

The interaction between decision-makers and staff at central banks has so far been an uncharted area in the central bank governance literature, largely because lack of data. A recent survey by the Bank of International Settlements has made it possible to analyse some aspects of this topic empirically. The focus of this paper is on issues related to staff policy recommendations. Based on the survey, it was found that the majority of central bank decision-making boards make some use of the policy views formulated by the staff. However, the degree to which policy boards are interested in staff policy views varies. In the present analysis, the ‘weight’ with which staff policy views are taken into account was proxied by how explicitly they are presented to the policy board. Based on the survey responses about how staff policy views are presented, a Staff Recommendation Explicitness Index (SREI) was constructed for each central bank surveyed. Its 10-grade scale ranged from multiple written recommendations (most explicit) to no recommendation at all. It was found that the most frequent institutional solution is providing a single written policy recommendation by the staff.

The next issue addressed was the determinants of the interest of policymakers in staff policy views. SREI was regressed on a number of candidate explanatory variables, selected on the basis of an analysis of the special features of staff policy opinion. The results suggested that the size of the policy board, its decision-making style and the monetary regime in place may play a role in determining the extent to which staff policy views are used. The larger the size of the policy committee the less explicit the way staff policy views are presented, perhaps because the declining marginal benefit from taking account an additional view. If the board is consensus-seeking, it tends to welcome staff policy views more, probably because of a need for an ‘impartial’ starting point for finding a consensus decision. Finally, in central banks pursuing inflation targeting, staff policy views tend to be made more explicit. This may be explained by the relatively more information-intensive nature of this monetary regime and the fact that a large part of the information necessary for decision-making is gathered and organised by the staff.

As to the other explanatory variables, the presence of externals on the policy board in itself did not seem to have an effect on the extent staff policy views are used. The overall significance of guidance by internal members during the process of forming staff policy views was not convincing either. However, an interesting side-result was the non-negligible positive correlation of this latter variable with consensus-seeking, suggesting that where the committee is consensus-seeking, there is tendency from the part of the internal members to exert some influence on the ‘impartial’ staff policy view.

The nature of this analysis was predominantly descriptive. The results hopefully help to understand the causes of different institutional solutions for staff/policy board interaction, but they do not say anything about optimal institution design in this respect. In order to be able to do so, further research is needed on whether staff/policy board interaction has anything to do with the *performance* of monetary policy (i.e. the success in achieving and maintaining price stability) and in what ways.

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