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**CENTRAL BANK DECISIONS:
HOW DOES ONE GOOD HEAD
COMPARE WITH A RULE?**
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ABSTRACT:

This paper asks what implications the structure of central bank committees has for monetary policy decisions. Some monetary policy committees, such as the Fed's FOMC, are dominated by a strong leader while others, such as the Bank of England's MPC, have a relatively flat hierarchy. I look at the propensity of FOMC and MPC voters to dissent from policy proposals and find that MPC members are twice as likely as FOMC members to disagree. However, FOMC transcripts from the forty meetings between 1992 and end-1996 reveal that "true" preferences voiced by policy officials differ from votes. I then examine preferences with respect to both elements of the Fed decision: the short-term interest rate and the policy bias. Contrary to recent findings of Gerlach-Kristen for the MPC, the difference between the mean and median Fed preference does not help to predict future interest rates. However, it does help to predict the bias.

CONTENTS

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1. INTRODUCTION

This paper looks at the structure of committee decision-making and asks what implications the structure of central bank committees has for monetary policy decisions. Some monetary policy committees, such as the Federal Reserve's Federal Open Market Committee (FOMC), are dominated by a strong leader. Others, such as the Bank of England's Monetary Policy Committee (MPC), have a relatively flat hierarchy with no dominant participant. The FOMC and MPC are interesting case studies because there is a wealth of information available about the structure of regular meetings, the flow of discussion, and the opinions of participants.

While both the Federal Reserve and the Bank of England are independent central banks, the former lacks a clear long-run objective, while the latter follows an inflation target. There is a lengthy literature on long-run objectives for monetary policy, inflation targeting, and the Fed's mandate, and these topics are not addressed here. However, the existence of a long-run objective for monetary policy and the structure and functioning of the policymaking body may well be related. The Bank of England's inflation targeting regime makes all policy officials individually accountable for decisions. This aspect of the regime or the regime itself more generally may tend to flatten the hierarchy among committee members and de-emphasize the role of the leader relative to the other participants.

The role for a leader in monetary policy decisions and the structure of decision-making bodies is a timely and important question for several reasons. First, suggestions that the Fed adopt an inflation target have been linked to the end of Alan Greenspan's tenure as chairman (see "Oh So Quietly, Fed Ponders What Follows Greenspan," *The New York Times*). Second, some discussion of the 1990s bubble in U.S. stock markets faults Alan Greenspan for keeping interest rates too low (see "Greenspan's bubble bath" and "To burst or not to burst?" in *The Economist*). Although there is as yet no clear consensus on Greenspan's role *vis a vis* the asset market bubble, a monetary policy committee that assigned less importance to the views of a single individual might have set a different policy course. Finally, the European Central Bank (ECB) recently announced an amendment to its voting rule and a re-examination of its monetary policy strategy (see "Wobbly pillars," *The Economist*). In pursuing these reforms, it might be wise to examine the role that leadership plays in Governing Council decisions. Goodfriend (1999) has suggested that the position of the ECB President "should be strengthened so that he can guide the debate within the agreed upon framework."

This paper does not consider whether the monetary policy outcomes of FOMC or MPC meetings are appropriate in light of the particular conditions at the time the decisions were made. A vast literature on monetary policy rules addresses that issue. Instead, I use information provided in voting records of the FOMC and MPC, FOMC transcripts, and accounts of FOMC and MPC meetings to examine how committee structure may have influenced decision outcomes. The paper proceeds as follows: section two reviews the relevant literature; section three discusses meeting structure and official dissents; section four uses the FOMC transcripts to examine the "true" preferences of Fed policymakers; section five concludes.

2. LITERATURE REVIEW

In a series of influential lectures delivered shortly after he stepped down from the Fed's Board, Alan Blinder (1998) asserted, "monetary theorists should start paying some attention to the nature of decision-making by committee, which is rarely mentioned in the academic literature" (p. 22). In Blinder's view, a strong FOMC chairman offsets the tendency toward policy inertia associated with group decision-making. In addition, a consensus-building committee tends to offset any idiosyncrasy associated with a single chairman's views.

Blinder and Morgan (2000) used monetary policy experiments to investigate the properties of decision-making. Their experiments indicated that group decisions were superior to individual decisions, supporting the contention that a single decisionmaker might impose idiosyncrasy on the outcomes. However, the authors found no evidence of inertia in group decision-making (that is, groups did not require more information than individuals before making a decision). In addition, the monetary policy experiments provided some evidence on the pressures to achieve consensus. Although the outcome of the group experiments was determined using either a majority or unanimity rule, Blinder and Morgan found that decisions made by majority "quickly evolved into unanimous decisions" (p.16). If such consensus pressure generally arises when groups make decisions, then a strong leader with the power to control the agenda may well be able to guide the outcome.

Gerlach-Kristen (2001) provides a theoretical model of monetary policy decision-making when there is uncertainty about the size of the output gap. Group decisions dominate individual decisions in her model because the forecast error variance of potential output falls as the number of decision-makers increases. In addition, Gerlach-Kristen looks at group outcomes when all decision-makers are equally skilled and when they are differently skilled. She shows that when policymakers have the same level of competence, the best outcome is reached by averaging their votes. When there are different degrees of competence among policymakers, then the median voter yields the best outcome. Put simply, averaging gives more weight to votes in the tails of the distribution, which is only desirable when all of the participants are of equal competence.

In another paper, Gerlach-Kristen (2002) examines the MPC's voting record. She finds that the skew in the voting record (defined as the difference between the average of individual preferences and the median preference or policy outcome) has significant predictive content for future interest rates. This result would appear to suggest that MPC members are more likely to be equally than differently skilled, and that the policy outcome might be improved by following an averaging rule.

3. MEETING STRUCTURE AND OFFICIAL DISSENTS

Some of the power of the chairman derives from the flow of information and order of discussion at monetary policy meetings. In meetings of the Fed's FOMC, there are two "rounds" of discussion.[1] During the first round, participants offer their views on the economic situation (and position themselves with respect to a forecast prepared by the Fed staff). In addition, the presidents of the twelve Federal Reserve Banks provide some specific information about the developments in their regions. The chairman does not speak during the first round, and the other participants speak in no fixed order.

The second round is devoted to the discussion of policy options and culminates in a formal vote. After a staff presentation on policy options, the first speaker in the second round

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[1] This description is based on the structure of FOMC meetings during Greenspan's tenure as chairman; for more detail, see FOMC transcripts and Meyer (1998).

is the chairman, who provides an expansive discussion of his views and makes a policy recommendation. Other participants follow in no fixed order.[2] At the end of the discussion, the chairman makes a final proposal and a formal vote is taken (with the chairman casting his vote first[3]). The minutes of each meeting, including the votes cast by policymakers, are published with a lag of about six weeks. Although there are only twelve voting members of the FOMC, it is typical for all nineteen policy officials to participate in both rounds of the discussion. According to anecdote, the Fed chairman would be forced to resign if he were not able to garner a majority for his final proposal – that is, if six or more FOMC members registered dissenting votes.

In meetings of the Bank of England's MPC, there is a single "round" of discussion.[4] The Bank's deputy governor (presently Mervyn King) speaks first, providing a thorough review of the economic situation and making a policy proposal. Other MPC members follow in no fixed order, using the deputy governors' overview as the benchmark against which to position their views (much like the Fed staff's forecast for the FOMC), and usually making a specific policy recommendation. The Bank's governor is always the last to speak, and thus can position himself in the majority by design. Following the discussion, the governor makes a final proposal. MPC members indicate their agreement or disagreement with the final proposal in a simultaneous vote. The Bank publishes the votes of MPC members shortly after each meeting, and has made public each individual's specific policy proposal since November 1998.[5]

Is a chairman-dominated committee such as the FOMC less likely than a rule-based committee such as the MPC to voice dissent? Dissent statistics presented in table 1 suggest that the answer to this question is "yes." From February 1970 through August 2002, FOMC officials had an average dissent rate of 7.8 percent, compared with 16.6 percent for MPC members.[6] Table 1 provides dissent rates for the four different Federal Reserve chairmen over the period studied: Arthur Burns, G. William Miller, Paul Volcker, and Alan Greenspan. While dissents have averaged 6.3 percent during the Greenspan era, there has been a remarkable decline in dissents – from 8.9 percent for the meetings between August 1987 and end-1993, to 3.6 percent since 1994. Krause (1994), in a study of FOMC voting from 1967 to 1990, found evidence that consensus rose (that is, dissent rates declined) with the tenure of Fed chairmen. He attributed this increase in consensus to the rise in the number of Fed officials appointed during the chairman's term. Another hypothesis for the particular decline in the dissent rate since 1994 is that it is related to the revelation that meetings were being recorded.[7] The next section of the paper focuses on monetary policy decisions during the 1992-1996 period, during which the dissent rate was 6.7 percent.

Another measure of disagreement with the policy proposal is the frequency of meetings at which dissents are registered (shown in parentheses under the dissent rate). At the Fed, slightly more than half of all FOMC meetings were unanimous over the period studied, with dissents registered at just 42 percent of all meetings chaired by Alan Greenspan. MPC

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[2] It is often the case that the President of the Federal Reserve Bank of New York (who serves as the FOMC deputy chairman) is the second speaker.

[3] The FOMC deputy chairman votes second, followed by other FOMC members in alphabetical order.

[4] The Bank's Governor Eddie George is largely responsible for having determined the structure of MPC meetings. This description is based upon conversations with individuals who have attended MPC meetings.

[5] From the first meeting of the MPC in June 1997 through October 1998, the minutes simply indicated whether dissenters preferred a higher or lower interest rate than the majority.

[6] These dissent rates exclude the committee chairman, as the chairman is always in the majority either because he makes the policy proposal (FOMC) or because he casts the tie-breaking vote (MPC).

[7] During Congressional testimony in the fall of 1993, Chairman Greenspan revealed that FOMC meetings were tape recorded; subsequently, the Fed agreed to publish transcripts after a delay of five years.

meetings are much more contentious, as members vote unanimously in only one-third of its meetings.

Writing about central bank transparency, Blinder and his co-authors (2001, p. 39) observed that the "FOMC does vote in a formal sense, but it is widely known that individual members often do not vote their true preference. Instead, each committee member decides whether to support or oppose the chairman's policy recommendation, which is almost always made first. Fed traditions dictate that a member should 'dissent' only if they find the majority's (that is, the chairman's opinion) unacceptable." This would suggest that the official dissent rates given in table 1 over-estimate the extent of consensus within the FOMC. Next, I turn to the FOMC transcripts, which help to shed some light on true voter preference.

4. "TRUE" PREFERENCES OF FED POLICYMAKERS

The published transcripts provide a complete account of the discussion at FOMC meetings. During the second round of the discussion, participants generally voice an explicit policy preference. The transcripts even permit a look at the policy preferences of participants who do not cast an official vote. Thus, it is possible to ascertain whether official voters do not vote their true preference and whether non-voting participants voice greater disagreement than voters with the policy proposal (since they do not face the prospect of casting a vote).

I examined transcripts from forty face-to-face meetings[8] from the beginning of 1992 through the end of 1996. Transcripts for meetings after 1996 are not yet available to the public. In future work, I plan to extend the sample back to August 1987 in order to include all of the available transcripts from the commencement of Greenspan's term. As indicated in table 2, the 1992-1996 meetings include thirty policy officials, 421 official votes, and 699 participations or expressed opinions (these figures exclude Chairman Greenspan).

Most of the policy officials attending FOMC meetings reveal a policy preference in round two of the discussion, following Greenspan's initial proposal. The monetary policy under consideration has two dimensions: a level for the Fed funds rate (the short-term rate that the Fed targets) and a policy "bias."[9] I focus on the funds rate despite the fact that the Fed formally targeted borrowed reserves over the 1992-1996 period.[10] My concentration on the funds rate can be justified based on the practice of other researchers (see Thornton and Wheelock, 2000). In a speech delivered at Stanford University in 1997, Greenspan pointed to an increasing focus on the funds rate from the early 1980s. Nevertheless, borrowed reserves targeting creeps into the FOMC discussion with greater frequency in the early Greenspan years, making interpretation of the 1987-1991 transcripts somewhat more problematic than interpretation of the 1992-1996 period.

From 1983 through 1999, the FOMC agreed upon a "bias" for future policy in addition to deciding the stance of current policy. Symmetric bias indicated that the likelihood of future tightening and easing were equally balanced, whereas an asymmetric bias was unbalanced either toward tightening or easing. Thornton and Wheelock (2000) discuss the origin of the bias, and several possible interpretations of it. They conclude that the bias served to promote

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[8] Conference calls are excluded from the analysis.

[9] The FOMC sets long-run monitoring ranges for the monetary aggregates at two meetings each year, as required by the Humphrey Hawkins Act. The 1992-1996 transcripts indicate that the determination of the monitoring ranges was taken up separately from the short-term policy decision. In November 1992 (not a Humphrey Hawkins meeting), the FOMC was asked by Congress to re-affirm its previously decided monitoring ranges; in this particular meeting, the discussion of the ranges was taken up simultaneously with the short-term policy decision.

[10] The policy directive agreed by the FOMC has included a target for the Fed funds rate only since mid-1997.

consensus, drawing in potential dissenters to vote with the majority on current policy in exchange for an expected direction for policy in the future.

Over the 1992-1996 period, Greenspan's proposal at the start of round two was always the policy adopted by the FOMC (see table 2). Out of forty meetings examined, Greenspan's preferred short-term interest rate was adopted in all cases, whereas his preferred bias was adopted in thirty-nine cases (he did not express a preference at the November 1995 meeting). Clearly, Greenspan's initial proposal is not independent, in the sense of being uninformed about the views of other participants, and no doubt reflects some view about the likely consensus.[11]

Voiced dissents

The dissent rates in table 3 confirm that Greenspan's initial proposal does reflect a consensus of views. As nearly all participants express a view about Greenspan's proposal for the short-term interest rate, it is possible to calculate voiced dissent rates. (A very small number of participants did not express any view about the rate proposal. In the statistical analysis, I assumed that non-speakers agreed with the chairman's proposal.)[12] Over the period studied, the voiced dissent rate for voting officials and all participants averaged 10.5 percent and 14 percent, respectively. Thus, there is considerable consensus with Greenspan's initial rate proposal. Equally notable, however, is how much larger the voiced dissent rates are when compared with the official dissent rate of only 6.7 percent. Fed policymakers are more willing to speak their minds in FOMC meetings than to vote their minds on the official record, and this tendency is greater when they do not cast an official vote. The analysis suggests that the "true" dissent rate of Fed policymakers is about double the official dissent rate, roughly similar to the rate of dissent registered on the MPC. It is possible to think about the influence of the leader in this context as the difference between voiced and official dissent rates.

However, the above analysis does not consider the second component of the Fed's decision: the bias. Table 4 sheds some light on expressed opinions of FOMC voters when interest rate and bias decisions are taken together. The numbers in each cell represent the number of voters who expressed the designated combination of rate, bias preference (missing values are denoted by "--"). The 10.5 percent voiced dissent rate shown on table 3 summarizes the middle row of the table. This middle row leaves out the fifty-four voters who expressed agreement with the interest rate but disagreed with the bias. Of the 421 votes cast, only 293 opinions (70 percent) were in agreement with both components of the proposal. If full agreement with Greenspan's proposal is the proper metric against which to judge dissents, then FOMC voters have a voiced dissent rate of 30 percent! Table 5 expands the grid to include the views expressed by non-voting policymakers. In this case, 466 out of 699 opinions expressed are in agreement with both Greenspan's rate and bias proposals, yielding a dissent rate of about one-third. While this probably overstates the extent of actual disagreement among committee members, it nevertheless substantiates the claim that there are strong pressures for near consensus outcomes.

The Median and Average Voter

Charts 1 and 2 graph the median and average preferences of Fed officials for changes in the Fed funds rate (based on the discussion in the FOMC transcripts). The solid dots

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[11] As shown at the bottom of table 1, nearly one-quarter of MPC members voice disagreement with the initial policy proposal tabled by the Bank's deputy governor.

[12] My treatment of non-speakers differs from the approach of Chappel, McGregor, and Vermilyea (2002) who, in a study of the Burns period, estimate implicit funds rate targets for FOMC voters who do not indicate a specific preference.

represent the policy outcome (which is identical to the median voiced preference of the voters). The dashed (solid) line plots the average preference for all (voting) participants. The change in the Fed funds rate is represented as a discrete variable in chart 1, and in terms of basis points in chart 2 (more participants voiced an explicit view about the former than the latter).

As both charts indicate, there were three occasions over the 1992-1996 period when the average view differed from the policy outcome: in the summer and fall of 1992, the mean voter wanted an easier monetary policy compared with the median outcome of unchanged interest rates; in the spring and summer of 1993, when the mean voter wanted tighter monetary policy; and over much of 1996, when the mean voter again advocated higher interest rates. In all cases, the magnitude of the deviation between the mean and median voter was small. Nevertheless, the 1996 deviation is interesting because it reflects a difference of views over whether or not the U.S. economy had experienced a productivity shift. Interestingly, non-voters advocated a greater increase in short-term rates than voting participants. As later transcripts are published, it will be possible to examine whether voiced preferences continued to deviate from the policy outcome, shedding additional light on Greenspan's role in keeping interest rates low over this period.

Chart 3 plots information on bias preferences. It is interesting to note the stance of the bias during the instances in 1992, 1993, and 1996 when the average voter diverges from the policy outcome. In 1992, when the mean voter wants lower interest rates, unchanged policy is accompanied by a bias towards easing. In 1993 and 1996, when the mean voter wants higher interest rates, the unchanged policy is accompanied by a bias towards tightening. This lends some additional support to the results of Thornton and Wheelock (2000), who find that the bias helps to forge consensus.[13]

Regression analysis

Table 6 reports the results of regressions that examine the predictive power of the difference between the mean and median of policymaker preferences for the short-term interest rate and bias. In equations 1 and 2, the difference between the mean and median of voiced preferences at time t is used to explain the change in the Fed funds rate at time t+1. In equations 3 and 4, the same explanatory variable is used to explain the bias that is voted at time t. The voiced preferences in the first and third (second and fourth) regressions are for voting (all) participants. All equations were estimated using ordered probit and including the White standard error correction.

The difference between the average and median of voiced policymaker preferences is not a good predictor of future changes in the Fed funds rate. In equations 1 and 2, the estimated coefficient on the explanatory variable is statistically insignificant and the pseudo-R^2 is extremely low. This contrasts with the findings of Gerlach-Kristen (2002), who found that the difference between the mean and the median rate preference of MPC members was a good predictor of future interest rate changes.

In equations 3 and 4, the difference between the mean and median voiced preference is useful in predicting the bias. In both regressions, the estimated coefficient is positive and statistically significant, indicating that when the average preference prefers higher interest rates than the median, the bias moves toward tightening. (The coefficient estimates provide direction of the response and are not marginal effects.) This provides additional support for Thornton and Wheelock's (2000) result that the bias is used to achieve consensus.

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[13] Chart 4 provides a similar plot for MPC interest rate policy and preferences.

5. CONCLUSION

This paper attempts to quantify the effects of different policymaking structures on the voting behavior of monetary policy committees, with particular reference to the Fed's FOMC and Bank of England's MPC. The FOMC has a strong, dominant leader, while the MPC has a relatively flat hierarchy. Leadership may be important for the Fed because, unlike the Bank of England, it lacks a precise objective for monetary policy. While FOMC meetings are characterized by much less disagreement with the policy proposal than MPC meetings, the FOMC transcripts reveal that there is much less consensus underneath the surface. The transcripts also indicate that Fed policymakers, on average, would have preferred slightly higher short-term interest rates during 1996 than the median voter. If this preference is shown to have remained into the latter 1990s (as subsequent transcripts are published), it may be possible to say more about Greenspan's role vis-à-vis the U.S. stock market bubble. Finally, examination of the mean and median voter provides support for the view that the FOMC's policy bias was useful in achieving consensus.

These results may be important for the European Central Bank as it reforms the voting on its Governing Council and re-evaluates its policy strategy. Adoption of an MPC-style inflation target and individual accountability may bring with it pressures for open disagreement that pose political challenges. Instead, strengthening the role of the Governing Council's president – akin to the role of the *Bundesbank* president prior to EMU – may be an important step in maintaining public perceptions of consensus.

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Table 1.   <u>Rate of Official Dissent in Monetary Policy Decisions</u>

(Calculations exclude votes of committee chairman. Figures in parentheses give share of non-unanimous meetings relative to total.)

	Dates	Number of meetings	Dissent rate, percent
US FOMC	2/1/70 to 8/13/02	299	7.8 (48)
Burns	2/1/70 to 1/31/78	96	5.5 (34)
Miller	3/8/78 to 8/6/79	15	17.0 (73)
Volcker	8/6/79 to 8/11/87	67	11.7 (70)
Greenspan	8/11/87 to 8/13/02	121	6.3 (42)
Before 1994 after 1994		52 69	8.9 3.6
1992-96		40	6.7
UK MPC	6/6/97 to 9/5/02	65	16.6 (63)
relative to first policy proposal*			23.8

* Rate of dissent relative to MPC member (deputy governor) who makes first policy proposal.

Table 2.   FOMC Meetings, 1992-96

40 official meetings Greenspan + 30 policymakers 421 votes (excluding Greenspan) 699 participations (excluding Greenspan)
How Often is Chair's Proposal Adopted by Voting Committee? Number of meetings Fed funds rate   40 Bias   39 (11/95, Greenspan did not express any preference)

Table 3.   Voiced Dissents on Short-term Interest Rate, 1992-96

(Calculations exclude votes of committee chairman.)

	Voiced dissents		Official dissents
	FOMC	All participants	FOMC
1992	16	26	11
1993	9	15	7
1994	5	9	5
1995	11	16	2
1996	3	32	3
1992-96	44	98	28
Number of votes or participations	421*	699*	421
Dissent rate	10.5	14.0	6.7

* Figures reflect total number of voters (participants) over the sample period. In some cases, voters (participants) did not speak. Speaking voters (participants) numbered 417 (690). Non-speaking voters (participants) assumed to be in agreement.

Table 4.   Voiced Preferences on Rate and Bias, FOMC Voters*

(Figures exclude preferences of Fed chairman.)

Numbers of FOMC members voicing Agreement or Disagreement with Greenspan's Rate, Bias Proposal (Total = 421)		
Agree, -- 26	Agree, Agree 293	Agree, Disagree 54
Disagree, -- 38	Disagree, Agree 5	Disagree, Disagree 1
--, -- 4	--, Agree 0	--, Disagree 0

Table 5.   Voiced Preferences on Rate and Bias, All Participants*

(Figures exclude preferences of Fed chairman.)

Numbers of participants voicing Agreement or Disagreement with Greenspan's Rate, Bias Proposal (Total = 699)		
Agree, -- 44	Agree, Agree 466	Agree, Disagree 82
Disagree, -- 89	Disagree, Agree 7	Disagree, Disagree 2
--, -- 9	--, Agree 0	--, Disagree 0

* "- -" denotes missing.

Table 6.   <u>Regression Results*</u>

(Equations estimated using ordered probit and White correction for standard errors. No constant term included. Number of observations in all equations = 40.)

Dependent variable	(1)	(2)
$\ddot{A}FF = FF_{t+1} - FF_t$	$MeanF_t - MedianF_t$	$MeanA_t - MedianA_t$
Coefficient	1.162	0.802
SE	(1.618)	(1.103)
Pseudo-R²	0.015	0.009

Dependent variable	(3)	(4)
$Bias_t$	$MeanF_t - MedianF_t$	$MeanA_t - MedianA_t$
Coefficient	4.320**	3.115*
SE	(1.874)	(1.689)
Pseudo-R²	0.142	0.102

Where:
FF = Fed funds rate,
F identifies voting members of FOMC, A identifies all participants at FOMC meeting,
$MedianF_t$ = policy outcome,
** (*) denotes statistical significance at the 5 (10) percent level.

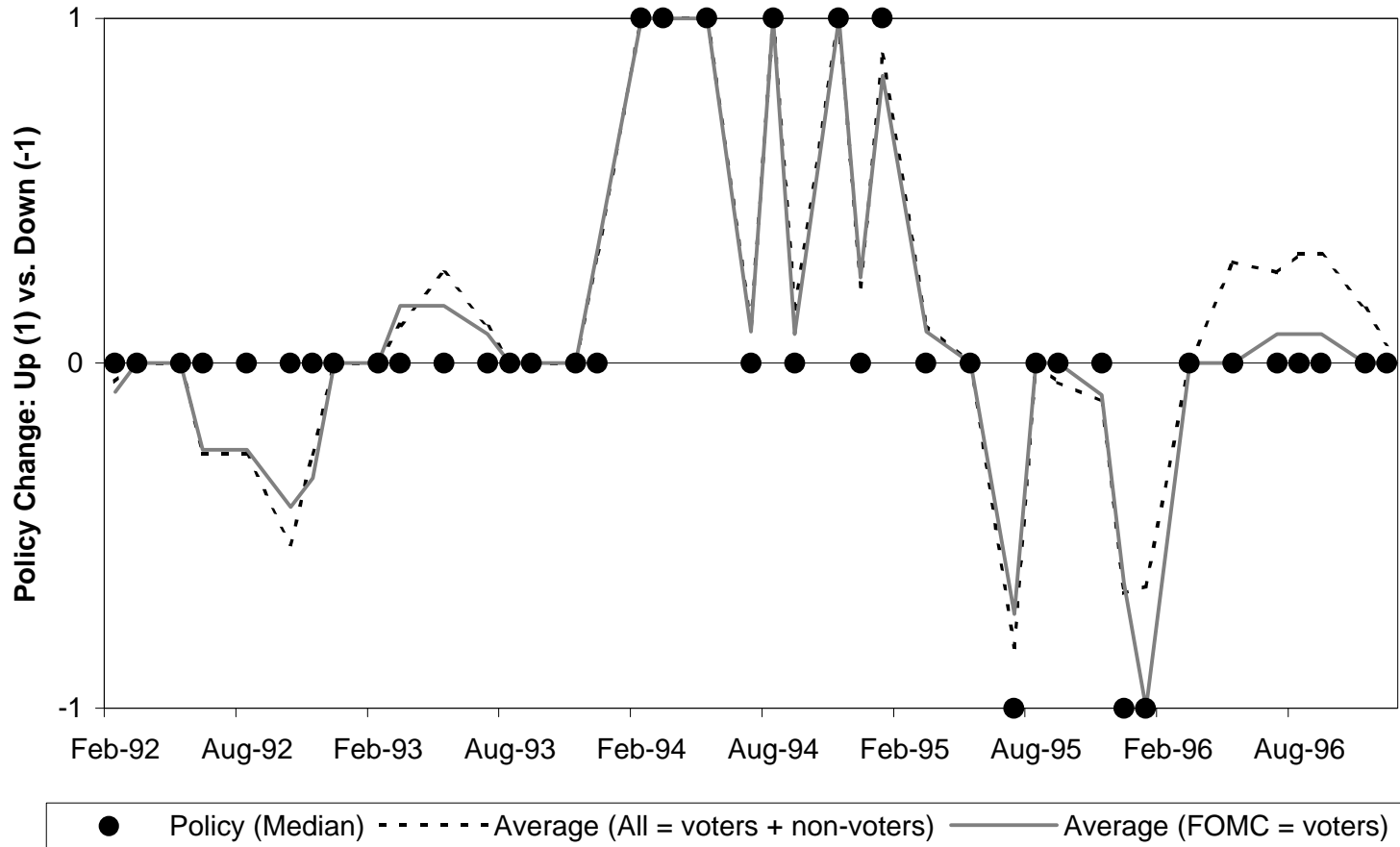**Chart 1. FOMC Policy and Preferences: Fed Funds Rate Change (Discrete)**

Policy Change: Up (1) vs. Down (-1)

Legend: ● Policy (Median) · · · · Average (All = voters + non-voters) —— Average (FOMC = voters)

Chart 2. FOMC Policy and Preferences: Fed Funds Rate Change (Basis Points)
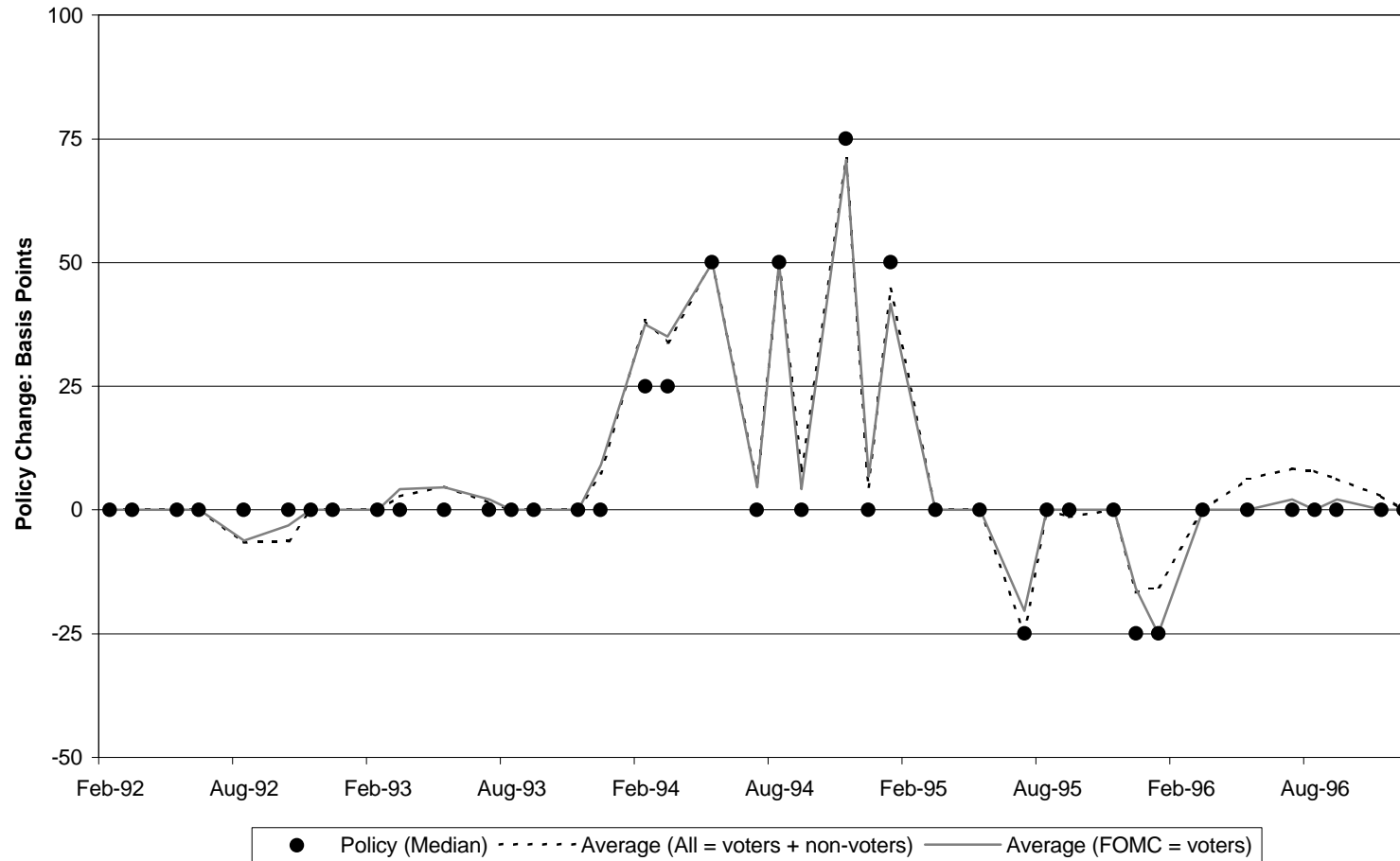
Chart 3. FOMC Policy and Preferences: Bias

Legend: ● Policy (Median) · · · · · Average (All = voters + non-voters) —— Average (FOMC = voters)

Y-axis: Bias: Towards Tightening (1) vs. Easing (-1)

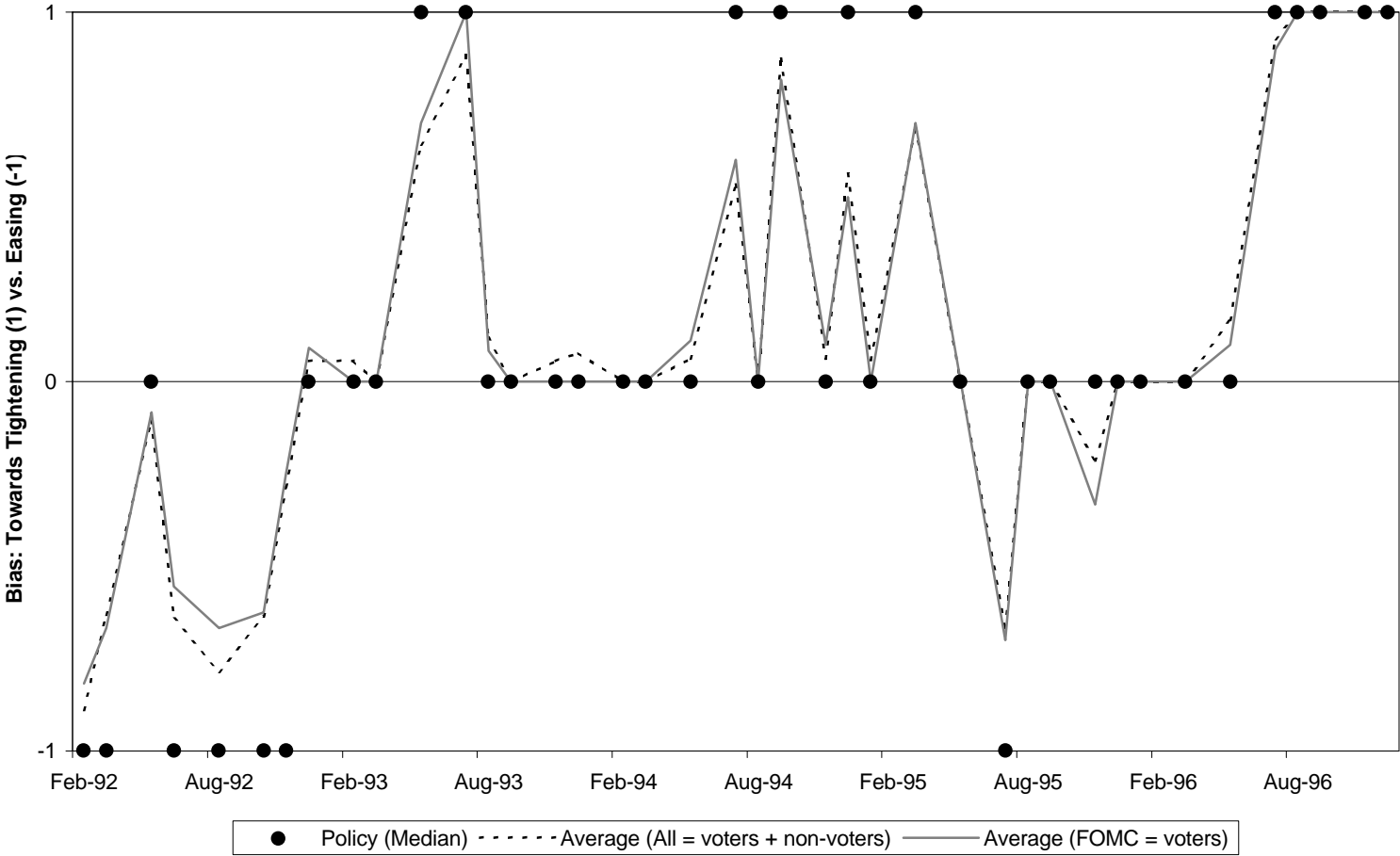X-axis: Feb-92, Aug-92, Feb-93, Aug-93, Feb-94, Aug-94, Feb-95, Aug-95, Feb-96, Aug-96

Chart 4. MPC Policy and Preferences: Rate Change (Basis Points)