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How Opportunistic Are Partisan German Central Bankers: Evidence on the Vaubel Hypothesis

Helge Berger*
Ulrich Woitek

University of Munich

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Abstract
Recent research has found inconclusive evidence regarding the presence of opportunistic political business cycles in German data. Inferring from Vaubel (1993, 1997) one could argue, however, that at least in the case of monetary policy the results are seriously flawed from the onset, because an independent central bank such as the German Bundesbank *will support the government only when it shares its partisan views. Vaubel has not presented parametric empirical evidence in support of his hypothesis. We show that the application of time series analysis yields results that clearly run counter to the hypothesis. Evidence on voting behaviour from the central bank council minutes points in the same direction. It appears perhaps paradoxically that an opportunistic government is better off facing an ideologically opposing* Bundesbank *council majority than a supportive one before elections.*
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* Correspondence:
Center for Economic Studies (*CES*), Universität München, Schackstr. 4, 80539 München.
Tel: +49(89)2180-6273, Fax: +49(89)-397303, E-Mail: h.berger@ces.vwl.uni-muenchen.de.

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Die Bundesbank kann nicht ein Leben für sich führen wie im luftleeren Raume oder in Frankfurt oder auf dem Monde...

Chancellor Adenauer[1]

1. Introduction

Two strands of thought formalise the notion that politics matters for the conduct of monetary policy, the *Opportunistic* and the *Partisan Schools*.[2] The opportunistic school proposes that incumbent governments use expansionary policies to improve economic performance and thereby re-election prospects before an election and to adopt contractionary policies after elections (Nordhaus (1975), Rogoff and Sibert (1988)). The partisan school proposes that politicians are not opportunistic, but rather decide on economic policies according to ideological preferences, with "right" leaning governments pursuing less expansionary policies than "left" leaning governments (Hibbs (1977), Alesina (1987, 1988)). Frey and Schneider (1988) have suggested that governments are composed of ideologues who have no choice but to behave opportunistically when facing binding re-election constraints. The opportunistic and the partisan school have both found some support in empirical studies (see for example Alesina, Cohen and Roubini (1992), Lang and Welzel (1992), Gärtner (1994b)). In Berger and Woitek (forthcoming) we show that for Germany results are sensitive to an extension of the database and to violations of the stationarity assumption. Although there appears to be a (quantitatively negligible) opportunistic cycle of monetary aggregates around elections, other hypotheses put forward by the two schools are rejected.

Yet this picture of non-politicized policy in Germany might not be the end of the story. Vaubel (1993, 1997)[3] proposes that an analysis of German economic policy along the lines of the past literature is compromised by the independence of the *Bundesbank* in the German

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1 *The* Bundesbank *cannot behave as if living in a vacuum, or in Frankfurt, or on the moon...* Adenauer was speaking before the council of the German conservative party (CDU) in late 1956. See the minutes edited by Buchstab (1990: 1023).

2 For a more extensive introduction to the theory of rational and non-rational political business cycles see e.g. Kirchgässner (1984), Nordhaus (1989), Persson and Tabellini (1990), Paldam (1991a and 1991b), Alesina, Cohen and Roubini (1992), and Gärtner (1994a).

3 Our paper refers to Section 2 of Vaubel (1997) which is closely related to Vaubel (1993 - in German). Unless otherwise noted, all further references are based on Vaubel (1997). For a theoretical discussion of Vaubel's hypothesis see Sieg (1996).

institutional setting. Incumbent politicians in government are self-interestedly opportunistic in their desire to be re-elected. The independent central bank does not, however, automatically yield to pre-electoral pressure for an expansionary monetary policy. According to Vaubel, it can be shown empirically that the Bank has partisan preferences. The basic for these preferences is the selection of individual members of the *Bundesbank* council by either *Länder* or central governments, to mirror the latters' respective ideologies. Before an election, the council supports an incumbent central government with an expansionary policy if, and only if, the majority of its members shares the central government's political position. Otherwise the council can be expected to oppose the government by adopting contractionary monetary measures. Should Vaubel's "party preference hypothesis" be correct, previous empirical tests of the political business cycle have systematically underestimated the impact of opportunistic and/or partisan behaviour, by failing to control for the partisan preferences of the *Bundesbank*.

There have been some criticisms of Vaubel's hypothesis. Lindenlaub (1995) argues that the Vaubel hypothesis is countered by the so called "Thomas-à-Becket-effect".[4] This effect changes the behavior of new members of the *Bundesbank* council after their appointment, to make new members as averse to inflation as older members.

The appropiate approach to establishing which hypothesis is valid is to look at the data on monetary policy in post-war Germany. Vaubel has performed a non-parametric test with (at least partially) seasonally adjusted monthly data for M1 and confirms the results he expects. Lohmann (1994) has maintained that, given the multitude of ways in which partisan preferences can be assigned to individuals on the central bank council, the method chosen by Vaubel might not be the most promising. Her empirical evidence is, however, based on (seasonally pre-adjusted) quarterly data and does not cover the 1950s. Because Vaubel found the evidence from the 1950s supportive of his claim, and since he uses monthly data which make it much easier to assign political events to the time series in question, there might be a bias in favour of a rejection.

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4 Thomas à Becket (1118*) was chancellor under Henry II before he became Archbishop of Canterbury in 1162. When appointed, he changed his attitudes to the the relation between state and church. He did this so rigorously and credibly that he was murdered by followers of Henry in 1170 and canonized by the Vatican in 1173.

To perform a fair test of the Vaubel hypothesis, we use monthly time series data from 1950 to 1989 (to avoid the turmoil of re-unification), supplemented by information on how individual members of the *Bundesbank* (before 1957: *Bank deutscher Länder*) council voted with regard to changes in the Bank's discount rate. This information is derived from the minutes of the board (Berger (1995)). This source of information is unfortunately restricted by German archive laws. The information that is available allows the analysis of the pre-election behaviour of individual members before federal elections only in 1953, 1957, and 1961. Nevertheless the data here enable us to consider the hypothesis in question. To the best of our knowledge, information from the minutes of the German central bank council has previously not been used in this regard. Since the discount rate has been the principal direct policy instrument or signal of the *Bundesbank*, one might expect to find opportunistic or partisan behaviour in the voting pattern of individual board members. For the same reason, we include the discount rate in our time series analysis, as well as M1.

The paper proceeds as follows. In Section 2 we present an analysis of pre-election monetary policy in a standard empirical political business cycle framework amended to fit the Vaubel hypothesis. In Section 3 we undertake a test of the conduct of monetary policy in pre-election periods when there were different political majorities in the *Bundesbank* council. Section 4 looks at the evidence from the *Bundesbank* minutes. The final section summarizes our conclusions - which are counter to the Vaubel hypothesis.

2. Pre-election monetary policy

Econometric analysis of time series requires the data to be stationary and the effects of seasonality to be removed without distorting the structure of the series. In Berger and Woitek (1995) we show that, in order to comply with these requirements, M1 should be transformed into annual growth rates, with the discount rate both stationary and free of seasonal effects. The discount rate is the rate the *Bundesbank* Council sets for short term lending to commercial banks.[5]

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5 Both series are available through the *Bundesbank* directly or through a commercial provider. M1 has the *Bundesbank* code TU0047. The discount rate (r) is published monthly by Deutsche Bundesbank (January 1950 ff.).

Our first test of the Vaubel hypothesis uses a model common in the empirical political business cycle literature. We estimate by OLS

$$(1) \qquad \hat{Y}_t = a + \sum_{j=1}^{p} ß_j \hat{Y}_{t-j} + \delta D_t Sup_t + u_t \quad \text{and}$$

$$(2) \qquad \hat{Y}_t = a + \sum_{j=1}^{p} ß_j \hat{Y}_{t-j} + \delta D_t Rel_t + u_t .$$

$\hat{Y}_t$ is either the annual growth rate (the actual rate of change over the last twelve months) of M1 or the discount rate. The first term on the right hand side is an AR-part and u_t is the error term following standard assumptions. The lag of the AR-part *p* is determined using standard techniques (sequential t-testing). The dummy variable D_t is active in certain periods before federal elections:

D-3 = Dummy is 1 *18* months before election and in the election month - and 0 otherwise

D-2 = Dummy is 1 *12* months before election and in the election month - and 0 otherwise

D-1 = Dummy is 1 *6* months before election and in the election month - and 0 otherwise

D_t is multiplied with the additional dummy variable Sup_t (*Supportive Council Majority*) in equation (1) and Rel_t (*Reluctant Council Majority*) in equation (2), respectively. Sup_t and Rel_t express the partisan position of the majority of "political" members of the *Bundesbank* council towards the government at time *t*.

We follow the method used by Vaubel (1997) in the construction of Sup_t and Rel_t. Vaubel assumes that members of the Board share the partisan preferences of the political party that dominated the *Länder* or federal government which appointed them. Preferences are assumed to be time-invariant and do not change when the appointing government falls from office. "Political" members are those who can be assigned to either the conservative (*CDU/CSU*) or social-democratic (*SPD*) party using this method. Non-"political" members are considered "neutral". Consequently Sup_t (Rel_t) is 1 only if the majority of "political"

members shares (opposes) the partisan preferences of the party which dominated the federal government at time t.[6]

If Vaubel were correct, we would expect the Board of the *Bundesbank* to support the government in a pre-election period (by increasing the money supply or lowering the discount rate) if both institutions have in common a party majority, that is, if the combined dummy variable $Sup_t\ D_t$ is equal to 1. If, on the other hand, the majority of "political" *Bundesbank* council members opposes the incumbent government, that is, if the combined dummy variable $Rel_t\ D_t$ is 1, the prediction is that the money supply decreases or the discount rate rises. Table 1 presents our results.

(Table 1: Pre-election monetary policy)

Table 1 lists coefficients and significance levels for the combined dummies $D_t\ Sup_t$ and $D_t\ Rec_t$. Pre-election periods when there is a draw in the *Bundesbank* Council are not considered. However, our procedure takes into account that the draw in 1982 occured only shortly before the election and we assume that the conservative *Bundesbank* Council supported the Grand Coalition in the 1969 election.[7] This leaves 4 pre-election periods, in the case of $D_t\ Sup_t$ (1965, 1969, 1976, 1980), and 2 pre-election periods, in the case of $D_t\ Rec_t$ (1957, 1972)[8], for which to test Vaubel's hypothesis.

Looking at the M1 voting behavior of supportive board majorities before elections, we find the expected positive coefficients for the dummies but none are significant. This might in itself be enough to reject the idea that a partisan central bank supports the government by monetary expansion. It is evident that the members of the board did not follow the rule Vaubel

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6 See Vaubel (1997) for details. Professor Vaubel helpfully provided additional information.

7 Assuming that in 1969 the Council was reluctant towards the Grand Coalition government or leaving the observation completely out of the sample does not significantly alter the results (available upon request from the authors). Excluding the 1983 pre-election periods does not systematically change our results as well. The same is true for the 1972 election, which, like the 1983 election, had been advanced compared to the original schedule (results available upon request). For the exact dates of change in the council majorities see Vaubel (1997: Table 4).

8 The count is 3 for the *D-3* dummy that captures the SPD majority between May and October 1989 before the 1990 election.

assumed. But the hypothesis has even less support when we look at reluctant board majorities. It appears that the government was better off with an opposing central bank board. To see whether our results for M1 are an artefact of our method of transformation of the series, we also computed the results for the HP-filtered annual growth rates of M1 and for their first differences. This did not change our results significantly. We included the balance-of-payments surplus as an explanatory variable, to ensure that the movements detected by the dummies were not due to missing information. Again the results proved to be robust. Results also did not change when we introduced more flexible dummies for periods other than the ones covered above. The same is true for tests based on M2 or M3 instead of M1.[9]

In the case of the discount rate, Table 1 reveals no coefficients with the predicted signs and also significant on conventional levels, whatever the *Bundesbank* Council majority. On the contrary, it seems that the government was confronted with rising discount rates especially when the Council shared its partisan views.

One reason that Vaubel's idea is not supported by the data might be a problem with his index of board majorities. It could, for instance, be hypothesised that the members of the *Bundesbank* board changed their political position whenever the appointing federal or *Länder* government changes colour during their period in office (or at least when members of the Board were re-appointed after 8 years). In general, however, it seems more consistent with the partisan component of Vaubel's proposition to assume that ideologies persist. The results obtained using such a (partly) partisan index are very close to those of direct tests for opportunistic government behaviour as reported in Berger and Woitek (forthcoming). The reason is that the party in opposition at the federal level rarely has a large enough majority in the *Länder* for its followers to dominate the *Bundesbank* Council (see Lohmann (1994)).

Overall, the results of this section are not supportive of the Vaubel hypothesis.

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9 All results are available on request from the authors.

3. Comparison of pre-election monetary policies by different council majorities

In section 2 we looked at the performances of supportive and reluctant majorities in the *Bundesbank* council before elections, implicitly comparing them with the conduct of monetary policy afterwards. Vaubel's (1993: Section IV.2) initial approach assigned the entire pre-election performance to the type of majority at the beginning of the period. Our more flexible test takes account of political changes within the relevant periods. The dummy variables capture the policy behaviour of supportive or reluctant majorities no matter the pre-election period or the succession in which the majorities occurred.

The procedures may however downplay the historical dimension of the problem. Vaubel (1997: Section 2) maintains that if the political majority in the *Bundesbank* council changes during a pre-election period, then its performance should be compared with the performance of the majority before the change, and not with the conduct of policy in post-election periods. As it turns out, he finds supportive evidence for his hypothesis, predicting that a change in favour (not in favour) of the incumbent government causes monetary policy to be more expansionary (contractionary) with the new majority than with the old. Also, if there is the same kind of majority before and after the beginning of the pre-election period (18 to 3 months before the election month), he often finds the expected policy changes: pro-government majorities increase the money supply in the pre-election period while anti-government majorities decrease it.

Capturing this idea requires a new data base that will tell us about the behaviour of every historically given council majority within the time span of its existence. Concentrating on M1 only, we use Vaubel's (1997: Table 5) approach by computing the annualised growth rate associated with every given majority in the period from 1950 till 1989. Doing so requires however neglecting our recommendation (Berger and Woitek (1995)) of transforming the series into annual first differences (annual growth rates) to eliminate seasonality. The second best solution is to use pre-adjusted data. Unfortunately the relevant *Bundesbank* series starts only after 1960. So as not to have to mix unadjusted and adjusted date as Vaubel did (Neumann (1993)), we fall back on the standard X-11 method to remove seasonality. The method is fairly close to the one used by the *Bundesbank* itself. To compute annualised growth

rates, we use the geometric mean. For the sake of comparability, the elections of 1969, 1972, and 1983 are excluded from the sample (cf. Vaubel (1997: Section 2)). We test the hypothesis that, if there is a pro-government majority at the beginning of the pre-election period or if the majority changes in favour of the government during the pre-election period, the growth rate of M1 will increase; otherwise it should decrease.

Figure 1 presents the results. The left diagram in Figure 1 displays our observations on annualised growth rates of M1 in pro-government situations, that is, after changes in the *Bundesbank* council majority in favour of the government and when a pro government majority entered the pre-election period. Annualised growth rates of M1 in anti-government situations are shown in the diagram on the right hand side of Figure 1. In both diagrams observations are organised along a time axis. The numbers hint at their specific dates (see Table A1 in the appendix for details). If the Vaubel hypothesis were correct, the observations on pro- (anti-) government situations should be found in the upper left hand side (lower right hand side) of Figure 1. This is, however, not the case at all. The anti-government situations in 1953 and 1956, for instance, seem to have produced a higher and not, as implied by the Vaubel hypothesis, a lower annualised growth rate of M1.

(Figure 1 about here)

Counting observations, we find that the Vaubel approach does not perform well. From the ten observations included in our sample, only five support the hypothesis. The null hypothesis of a uniform distribution cannot be rejected. There is, however, a problem with the results, because the data used are not adequately adjusted for the impact of the business cycle. Vaubel (1997) applies a moving average to smooth the cyclical component of the M1 series. This procedure eliminates considerable information that is in the data. We therefore checked his results by removing the business cycle component by fitting an AR(6)-model to the de-trended data and subtracting the estimated model from the series. Figure 2 presents our results (see Table A2 in the appendix for details).

(Figure 2 about here)

Again counting observations, we have the following result:

In favour of hypothesis:	7 cases	(Vaubel:	9 cases, end of observation period: 1988)
Not in favour of hypothesis:	3 cases	(Vaubel:	1 case)

Controlling for the business cycle component in M1 thus generates a time series which leads to findings more favourable to Vaubel's hypothesis. However for our data the hypothesis of a uniform distribution still cannot be rejected at conventional significance levels (p-value: 0.3).[10] If we do not consider the small annualised change in M1 in 1965 (which has a magnitude of only +0.2 percentage points) as a positive change in favour of the Vaubel hypothesis, the rejection becomes even clearer. The major reason for the difference between the Vaubel result (in brackets in the list below Figure 2) and that obtained above is the method of adjustment for the business cycle. Another reason is that, up to 1961, Vaubel uses data that contain their seasonal component, while our data set is de-seasonalised throughout the entire observation period.

Again, we are obliged to conclude that the Vaubel hypothesis must be rejected.

4. Additional evidence from the *Bundesbank* minutes

Results thus far have been based on data that contain only indirect information on the partisan or non-partisan behaviour of *Bundesbank* council members. Since the assumption is that individuals within the council behave according to their ideology, a more direct test would look at the individual voting behaviour of council members in pre-election periods. We perform such a direct test of the Vaubel hypothesis using data on discount rate decisions provided by Berger (1995) for the period 1948-61.[11]

Table 2 shows the voting behaviour of those members of the *Bundesbank* council who were nominated by *Länder* or federal governments dominated by either the social-democrats

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10 The result still holds if we take our observation period beyond 1989. The null hypothesis would be rejected on conventional levels even if we were to accept Vaubel's (1997) own results for the years after 1989.

11 German archive laws prevent the analysis of *Bundesbank* council minutes for 30 years.

(*SPD*) or the conservative party (*CDU/CSU*) within the 18 months before the federal elections of 1953, 1957, and 1961. In all cases the incumbent government was conservative. Since before the first German election in 1949 an incumbent government did not exist, we exclude this election. Only votes that resulted in a change in the discount rate are reported.

(Table 2 about here)

The upper part of Table 2 is self explanatory. If, for instance, the decision to reduce the discount rate on May, 29 1952 is compared with the voting behaviour of "political" groups within the council, then only 3 (1) council members associated by Vaubel (1997) with the CDU/CSU (SPD) voted as predicted by the Vaubel hypothesis, that is, in favour (not in favour) of the lower rate, to the advantage (disadvantage) of the incumbent conservative federal government at the time.

The lower part of Table 2 reports the aggregate number of votes that are compatible or incompatible with the proposition that individual members cast their votes according to pre-election needs of government or opposition because of partisan preferences. The results of the χ^2-test (null-hypothesis: votes are equally distributed between the two categories) again reject the Vaubel hypothesis. The distribution of votes for the sum of all "political" members of the *Bundesbank* council between the two categories is more or less equal. It is interesting to notice, however, that the result is principally due to "SPD members" not voting in accord with the theory. That is, they did not vote against the opportunistic needs of the conservative governments. Members appointed to the council by CDU/CSU governments seemed however to vote in a partisan manner.[12]

5. Conclusion

Roland Vaubel (1997) has proposed that empirical investigations of German economic policy should make allowance for the special role of the *Bundesbank*. In a novel synthesis of the opportunistic and partisan schools of political business cycle theory, he maintains that

12 This last result still holds when one splits the "party members" into the two subgroups *Direktorium* and *Landeszentralbankpräsidenten*.

opportunistic governments will have the support of Germany's independent central bank, if, and only if, the bank's council shares the ideology of the incumbent government. Only then will an expansionary monetary policy be adopted before elections. And if the majority of members of the *Bundesbank* council has an ideological position contrary to that of the incumbent government, monetary policy will be restrictive before elections. By identifying the political preferences of the individual council members with reference to the government which nominated them, Vaubel finds empirical support for his hypothesis.

We have employed the same data set on the political preferences of the *Bundesbank* council in a three step test procedure which encompasses Vaubel's own method. We have also applied standard times series methods and provide results for data on the individual voting behaviour of *Bundesbank* council members in the, albeit restricted, period between 1953 and 1961.

First, a times series model common in the empirical political business cycle literature suggests that it was reluctant, and not supportive *Bundesbank* council majorities, that supported the federal government in the period 1950-89. Supportive councils raised the discount rate before elections, whereas reluctant majorities increased the money supply as elections approached. This is clearly in contrast to the Vaubel hypothesis.

Second, following Vaubel's own particular approach, we compare the monetary policy (in terms of M1) implemented by different council majorities within pre-election periods and analyse council decisions as the election dates approach. Here again our results run counter to the idea that German central bankers made partisan decisions.

Third, we used data on individual voting behaviour of *Bundesbank* council members on discount rate changes in the pre-election periods between 1953 and 1961. We consider the voting behavior of individuals whom Vaubel has designated as affiliated with the conservative or social-democratic positions. Counting votes that were cast in accord with and contrary to the Vaubel hypothesis, we find that, for the overall sum of votes, the hypothesis is rejected; although "conservative members" behaved in a more partisan manner than the "social-democrats".

The evidence provided by the three tests fails to support the hypothesis that the *Bundesbank* council's decisions in pre-election periods can be explained by partisan preferences of its members. We offer two possible explanations: (1) the preferences of German central bankers are private information which is not revealed by the identifying procedures that have been used; and (2) the "Thomas-à-Becket-effect" in the *Bundesbank* council is stronger than the ideological beliefs of members.

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Table 1: Pre-election Monetary Policy

		(1) "Raw" Series	(2) Difference Filter	(3) HP-Filter
M1				
supportive council majority	D-3	0.001	0.001	0.001
	D-2	0.000	0.000	0.000
	D-1	0.001	0.001	0.002
reluctant council majority	D-3	0.003	0.001	0.002
	D-2	0.005**	0.003	0.004**
	D-1	0.012***	0.009	0.011*
Discount Rate				
supportive council majority	D-3	0.068	0.048	0.043
	D-2	0.114**	0.096**	0.085
	D-1	0.137	0.127	0.119
reluctant council majority	D-3	-0.035	-0.041	-0.028
	D-2	-0.054	-0.053	-0.049
	D-1	0.038	0.037	0.034

Notes:

- D-3/D-2/D-1 is 1 in the 18/12/6 months before an election and 0 otherwise.
- Superscript `*´/`**´/`***´: Estimate is significant at the 10/5/1 per cent level.
- The null-hypothesis oft the Q-test ("The residuals are white noise") could not be rejected in any case. R^2_{adj} is about 0.9 (Detailed results are available on request).

Table 2: Individual Voting Behaviour of 'Political' *Bundesbank* Council Members on Discount Rate (DR) Changes Before the Federal Elections of 1953, 1957, and 1961

	Old DR	Δ DR	'CDU/CSU Members' Allowed to Vote[1)]	'CDU/CSU Members' Voting: Yes	'CDU/CSU Members' Voting: No	'SPD Members' Allowed to Vote[1)]	'SPD Members' Voting: Yes	'SPD Members' Voting: No
Election in 1953: 9 - with a Conservative Government								
29.5.1952	6	-1	5	3	2	5	4	1
21.8.1952	5	-0,5	5	-[2)]	-[2)]	5	-[2)]	-[2)]
8.1.1953	4,5	-0,5	4	4	0	5	4	1
11.6.1953	4	-0,5	5	5	0	5	5	0
Election in 1957:9- with a Conservative Government								
19.5.1956	4,5	+1	3	*3* [3)]	*0*[3)]	7	*5*[3)]	*2*[3)]
6.9.1956	5,5	-0,5	3	2	1	7	6	1
11.1.1957	5	-0,5	3	*2*	*1*	7	*5*	*2*
Election in 1961:9- with a Conservative Government								
3.6.1960	4	+1	7	5	2	7	4	3
11.11.1960	5	-1	7	7	0	6	6	0
20.1.1961	4	-0,5	8	8	0	8	7	1
5.5.1961	3,5	-0,5	7	7	0	6	4	2

Number of Votes	CDU/CSU & SPD	SPD	CDU/CSU
In favour of hypothesis	57	17	40
Not in favour of hypothesis	58	46	12
χ^2	0,02	13,34***	15,07***

Notes:

- Superscript ***: Significant at the 1%-level
- [1)]: After the passage of the *Bundesbank* law in 1957, the vice-presidents of the *Landeszentralbanken* were no longer allowed to vote in the council in place of absent presidents. This accounts for occasional differences in the total number of 'political' members allowed to vote and principle 'political' members in the council as shown by Vaubel (1996: Table 4).
  [2)]: No information available at all.
  [3)]: Indirectly derived information from the council's discussions.
- Source: Berger (1995)

Figure 1: Monetary Policy in Pre-Election Periods: Unadjusted Data

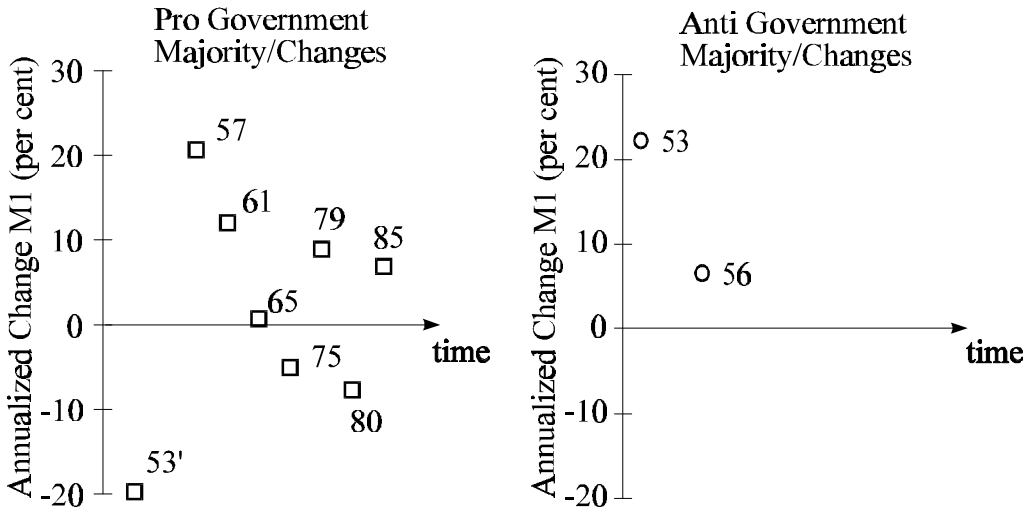

Figure 2: Monetary Policy in Pre-Election Periods: Adjusted Data