Political Factors in Monetary Policy

John T. Woolley*

Almost all observers agree that in some sense political factors matter in the conduct of monetary policy. There is much less agreement as to which political factors are most important, or as to exactly how those factors influence monetary policy. In this essay, I will advance a rudimentary typology of political factors that have been of interest to students of the conduct of economic policy. I will then examine in some detail the consequences of a subset of those factors for policy in three countries: Britain, France, and Germany. I conclude with a broader discussion of the importance of political factors and how they might be studied.

I. A Rudimentary Typology of Political Factors

The first distinction that I wish to draw is between factors that directly involve the legally constituted process of governing and other factors, that, while important for governing, are more accurately conceived as characteristics of the nongovernmental organization of society. This is, of course, the familiar distinction between "state" and "society." The second distinction is between slowly and rapidly changing political factors. This, also familiar, is the distinction between structural and variable factors. Where the line is drawn between state and society is, as we shall see, extremely important, and appears to have significant consequences for monetary policy. Politics involves the use of authority to resolve distributional issues, and it is clear that decisions about the range of societal affairs subjected to authoritative (as opposed to market) decisions are fundamental political decisions. We should not fail to recognize that monetary policy is both constrained by those decisions and may be part of a continuing process of remaking or refining those decisions.,

Illustrative examples of these four categories of political factors are presented in Table 1. Each type is numbered moving clockwise from the upper left quadrant. Most casual references to "politics" are references to *type I politics*, or variable governmental politics. Because type I politics figures prominently below, discussion here is quite brief. I distinguish three major subcategories within type I politics. First, there is the politics involved in determining the official ruling party or coalition. For Britain, France, and Germany, this means partisan electoral competition. Second,

*Assistant Professor of Political Science, Washington University, St. Louis, Mo. Research for this paper was supported in part by a grant from the Social Science Research Council of New York. The paper has benefited from many conversations with James Alt. The author gratefully acknowledges the research assistance of Donald Davison and Diane Schmidt.

Table 1
A Rudimentary Typology of Political Factors of Interest to Students of Macroeconomic Policy

	Governmental	Nongovernmental
Variable	Type I Election Contests Dynamics of Public Opinion Legislative Politics Bureaucratic Politics Interest Group Politics	Type II Wage Bargaining Strike Behavior Business Confidence
Structural	Type IV Division of Power between Executive and Legislature Structure and Control of Public Bureaucracy Central Bank Independence	Type III Degree of Unionization Links of Parties and Unions Organization of Business Sector Financial Structure National Preferences for Inflation/Unemployment

there is within-state conflict and bargaining over the definition of specific policy actions. This includes legislative and bureaucratic politics. Students of bureaucratic politics typically assume that agencies strive to establish and defend a sphere of autonomy in policymaking and control of their budget. A variation on this theme is Suleiman's analysis of the strategies used by the French *Inspecteurs des Finances* to protect the dominant position of their *grand corps* (Suleiman, 1974, 1978).

The third subcategory of type I politics is interest group politics, including the study of "policy networks" or "issue networks" (e.g., Heclo 1978). The focus here is on the ways various societal interests mobilize their resources to influence governmental decisions by acting directly on the decision-making process. The literature on interest groups and macroeconomic policy is slender at best. However, in all three countries we observe that interest rates are politically sensitive, and that groups such as homebuilders and consumer-durables manufacturers are harmed by high interest rates—as are their employees and consumers who are prevented from making purchases. These groups may try to put pressure on monetary policymakers.[1]

Type II politics, or variable nongovernmental politics, also involves the behavior of interest groups, but unlike the interest group behavior in type I politics, this behavior is not explicitly intended to influence public decisions. Nonetheless, these behaviors and their consequences reveal the relative power and cohesion of different interests in society. In this sense they are political and may have an important, though indirect, impact on eco-

[1]In addition to this kind of ordinary interest group effort to influence policy decisions, type I politics can incorporate another. In the U.S. context, at least, conflicts among contending groups of economists for influence over policy can be usefully conceived of as analogous to interest group politics (Woolley, 1982).

nomic policy. The most familiar examples are labor-management bargaining and strike behavior. Such behavior has been studied by Gordon (1977; also Sachs, 1979) for example, in his comparison of wage-push and monetarist explanations of inflation. Wage push could, for instance, lead to an increased demand for money. Aronson (1977) argues that through market innovations banks create pressure for central bank actions that banks could not achieve by direct pressure in type I politics. Several investigators have been interested in strike behavior and economic performance (e.g., Hibbs, 1977b; Laidler, 1976), but few have examined the impact of this kind of behavior on monetary policy.

Structural nongovernmental politics, *type III politics*, refers to the relatively constant characteristics of societal interests: how they are organized or how they relate to one another. Distinct national preferences about macroeconomic performance, if they exist, would be included here. The obvious example is the reputed German aversion to inflation. Other type III political characteristics that have been of interest to students of economic policy have to do with the structure and organization of labor and capital. What share of the labor force is unionized? Is labor internally fragmented or is it unified in a single, dominant confederation? Is the major labor confederation closely linked to a major political party? Similar questions of organization might be asked about all major societal interests. Katzenstein (1977) advanced an explanation of foreign economic policy in which the degree of centralization of nongovernmental groups accounts both for the choice of policy instruments and for policy actions.

For two reasons type III politics is relevant to an analysis of macroeconomic policymaking. First, the more centralized and cohesively organized a major interest is, the more capable it is of dominating at least one potential governing coalition and, thus, of decisively shaping macroeconomic policy. Second, the more centralized and cohesively organized a major interest is, the more likely it is to be able to defend its interests successfully in private sector bargaining (type II politics). This in turn implies that if macroeconomic policy is to stabilize the economy significantly, costs associated with policy must fall more heavily on less well-organized groups.

While these are the most familiar ways that type III politics has been brought into the study of macroeconomic policy, other structural features might be considered here with equal justification and with equal or greater significance for monetary policy. For example, one might consider the characteristics of financial institutions and the financial market. The broader the financial markets, the more monetary policy can be conducted primarily through open market operations rather than with various forms of credit allocation. A reliance on open market operations helps to depoliticize monetary policy decisions (Woolley, 1977). The greater the specialization of financial institutions (e.g., the more they are limited to particular kinds of portfolios, such as mortgages), the more likely that some class of institutions will find it difficult to adjust to rapidly changing economic circumstances, and the more likely that these groups will seek governmental

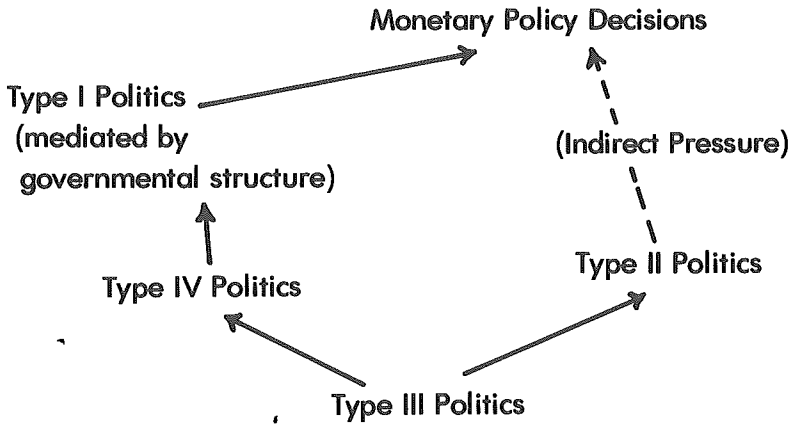
protection.[2]

Type IV politics, or structural government policies, is, like type I politics, close to the commonsense notion of politics. This includes such constitutional characteristics as the relative power of the head of government and the legislative body, the rules governing electoral competition, the degree of central bureaucratic control, and, of particular interest in the present context, the formal relationship of central bank and government. Does fluctuating support in parliament predictably lead to accommodation of dissident views by the prime minister (chancellor, president)? Are members of legislative bodies limited in their access to policymakers in central banks, or, as in the United States, are they in the position to subject central bankers to public hearings, to require frequent reports, and, potentially, to change central bank law despite opposition of the head of government?

The linkages between these various kinds of politics and monetary policy decisions are, of course, complicated. I suggest one possible set of linkages in Figure 1. Whether, and how, type I politics affects monetary

Figure 1

Relationships Between Different Kinds of Political Factors and Monetary Policy Decisions



[2]An additional kind of structural nongovernmental politics that has been regarded as very important by many political scientists is the degree of corporatism. Making decisions through corporatist bargaining, that is, through councils constituted on the basis of interests rather than through legislatures, may make it easier to reach decisions on distributive questions. However, at least one study has produced rather negative results with respect to macroeconomic performance (Schmidt, 1982). None of the countries in this study is characterized by high levels of corporatist intermediations such as that observed in Austria or Sweden, but Germany is frequently considered to have moderately high levels of corporatism. France is, by contrast, a country in which corporatist intermediation has been relatively weak throughout the past 20 years, and in Britain previously moderate levels of corporatism have been weakening.

policy should be determined substantially by type IV politics—government structure. This is discussed in detail below. All the other kinds of politics may also have an influence on type I politics, and thus at one remove, an impact on monetary policy decisions—examples have been suggested above. Type II politics, itself a reflection of type III politics, may have an indirect impact on monetary policy when it leads to changes in the behavior of economic variables being monitored by the central bank. And there are feedbacks. For example, structural change may be the result of type I politics.

Type I Politics and Reaction Functions

The largest body of research on economic policy involves what I call type I politics, and I shall emphasize type I politics in this essay. Type I politics is of special interest to researchers since the variable nature of politics facilitates quantitative time-series analysis within single countries. A wide variety of hypotheses about politics of types I and II can be tested in the reaction function framework (Alt and Woolley, 1982).

Given the logic of reaction function framework, to include explicit measures of type I politics in reaction functions involves making assumptions that policymakers often find offensive. This is not a good reason to reject those assumptions, of course, but it is a good reason to think clearly before adopting them. Normally, one conceives of the right-hand variables in the reaction function as representing some sort of policy targets which are combined and weighted in an optimizing process by policymakers. To include political variables is to suggest that central bankers make policy decisions with explicit, type I political objectives in mind. Since most central bankers prefer to think of themselves as neutral technocrats, this assumption would be quickly rejected by most of them, especially with regard to partisan competition. A less controversial assumption would be that political variables are not necessarily targets themselves, but stand for another objective—institutional autonomy and integrity. Failing to respond to political conditions could threaten this underlying "true" objective. Analytically, it is reasonable to regard the actual institutional locus of monetary authority as ambiguous. If central bankers have a relatively modest level of independence in policy choice, then "the monetary authority" is much more broadly comprised than just the central bank, and political targets are quite appropriately included, as such, in a reaction function.

II. Political Structure and the Impact of Type I Politics

As indicated in Figure 1, I conceive of the impact of type I politics on monetary policy as being mediated through the political structure. By this I mean that the statutory position of the central bank together with other structural features of politics determines the degree to which central banks are exposed to the pressures of type I politics. Students of the Federal

Reserve have argued that independence from conventional budget processes and appointments for long terms in office help to guarantee Federal Reserve independence from the President and the Congress. In fact, major central banks differ very little in terms of these kinds of structural differences—certainly not enough to account for any pronounced difference in macroeconomic performance (Woolley, 1984a).

Arguably more important is the degree to which legislation clearly defines certain policy priorities for the central bank. Clear statutory guidance appears to reduce the scope for short-term political influence (Parkin and Bade, 1978). The Bundesbank, for example, is explicitly charged with making inflation its first priority, unlike the other two banks. Also important are differences in the degree to which central banks control all of the instruments relevant to monetary policy, such as financial institution regulation, administered interest rates, mechanisms for credit allocation. In this respect, the Bank of France shares authority with other institutions more than does the Bank of England which, in turn, shares authority more than does the Bundesbank. To reduce this kind of interdependence is, by definition, to enhance autonomy. Functional independence is not equal to an ability to resist pressures from other actors, but it does reduce the number of occasions requiring negotiation and possible compromise.

On a day-to-day basis, the most important structural features are those facilitating or impeding actors who want to try to punish a central bank for actions they oppose. The United States is relatively unusual in the degree to which the legislature can independently initiate an attack on the central bank. Unlike the United States, in the countries examined here, no viable attack on the central bank is possible without at least the acquiescence of the head of government. Even in Germany, where Bundestag committees and members have some legislative initiative, legislation is overwhelmingly dominated by the leadership of the majority party (or coalition). When public power is less fragmented than in the United States, type I political pressures on central banks are channeled almost exclusively through the head of government and his chief economic ministers. Thus, the central bank has an even greater incentive to be cooperative with the head of government in these European cases than in the United States. In the United States, independent congressional power greatly complicates any presidential effort to punish or restrict the Federal Reserve while simultaneously inviting interest groups to lobby for congressional action.

Finally, the less the state is involved in investment decisions and capital allocation, the more market forces may be expected to support central bank autonomy. This flows from the assumption that markets react strongly against government policy actions that are viewed as being incorrect or inadequate to deal with the current conjuncture. This also relies on the assumption that central banks are more likely than not to be advocates of the kinds of policies viewed as "correct" by market participants. Government policies that are motivated by a desire to maintain high levels of popularity may be viewed with hostility in the market. If the state's role in

financing investment and allocating capital is relatively small, then adverse market reactions would mean that policies designed to curry popular favor might result in worse economic performance than would an apparently less popular policy. Consequently, in such a situation governments would learn that they have to choose between trying to expand the role of the state in order better to control financial flows, and trying to follow the kinds of policies central banks advocate. Where the government role in financial life is relatively restricted, as is the case in the United States and Germany, there is no realistic short-run option of expanding the role of the state. This is a strong reinforcement for central bank autonomy. This would be less the case in Britain; still less in France.

III. Type I Politics and the Conduct of Monetary Policy

Given the preceding discussion, one expects to find close relations between government and central bank in all three of these countries. However, given the differences in domestic market structures and political structures, the ability of governments effectively to sustain pressures on the central bank would appear to be greatest in France and least in Germany, with Britain somewhere in between.

To investigate the impact of some aspects of type I politics on monetary policy, I have estimated a series of reaction functions which incorporate dummy variables reflecting changes in party, changes in head of government, and the occurrence of elections. I have also introduced measures of government popularity and measures of group pressure. The estimates show that type I political events do have an impact on monetary policy in each of these three countries. However, there are important differences that appear to reflect the structural differences discussed above.

The models include the economic variables from the models estimated and discussed by Hodgman and Resek (HR) for this same conference. Some differences should be noted: the most recent observations in the data set I worked with end four to eight quarters before those in the HR data set. This difference occasionally leads to estimates of different coefficients. Second, in order to maximize the opportunity for testing various hypotheses, I have not examined the separate regime periods estimated by HR. Note, however, that the dates HR identify for regime changes coincide almost precisely with important political transitions in each of the countries. This suggests that political and economic events are thoroughly intertwined. Finally, I have further truncated the estimation period in the German case by excluding the few observations prior to the beginning of the SPD-dominated governments in 1969.[3] The estimating strategy I used, adding political variables one at a time to the basic HR models, was intend-

[3]The models for the Bank of England produce marginally more satisfactory results with the contemporary rather than lagged value for PSBR, which was used in all models reported here. Dates for estimating periods are for Britain, 65:2–80:4; Germany, 69:3–80:1; France 64:2–80:4.

ed to increase the opportunity for finding significant coefficients. In order to correct for first-order autocorrelation, all German and French models were estimated by the two-step full transform method (essentially equivalent to the Cochrane-Orcutt method).

Government Popularity and Monetary Policy

The fundamental argument in much of the writing on the politics of macroeconomic policy is that governments are essentially popularity maximizers. For example, in many widely cited works, Frey and Schneider (1978a, 1978b, 1979) assume that governments have some minimal level of popularity which they strive to maintain at all times. When governments are below their target popularity level, they take steps to increase their popularity. Above that level, there is no reason to expect that any relationships should hold.

While I know of no models explaining government popularity that include interest rates as determinants of levels of public support, I have estimated relatively simple models (not reported here), in which the interest rate enters with the appropriate (negative) sign and usually at significant levels. Thus, it would appear that governments have ample incentive to manipulate interest rates for purposes of maintaining their popularity. Interest rates have functional relationships to the variables that are typically viewed as determinants of public support (e.g., economic growth, inflation) and they appear to have a direct impact on popularity as well.

Popularity is measured in the British and German cases by responses to standard voting intention survey questions for the *previous* quarter (with contemporary values inserted for the first quarter of a government term). In the French case, the measure is the response to a question asking whether or not the respondent is satisfied with the job the President (or Prime Minister) is doing.[4] In an effort to be faithful to the logic of the Frey-Schneider approach, I arbitrarily defined the target popularity level for the sample period as the average level for the period.

The popularity variable is called POP. POP2, equal to POP–MEAN (POP), measures the deviation of popularity from the implicit target popularity level. POPDEF1, for periods of popularity deficit, is equal to -1(POP2) if POP2 is equal to or less than 0, (else = 0). POPSUR1, for periods of popularity surplus, is equal to POP2 if POP2 is greater than 0 (else = 0). Entering POPSUR1 and POPDEF1 simultaneously in the basic HR interest rate model for each country tests whether governments lower the interest rate in response to an increasing popularity deficit, and what, if any, systematic responses there are to popularity surpluses. Of course, if

[4]The data for Germany and Britain were provided in part by Thomas Yantek, and the data for France in part by Michael Lewis-Beck. The Yantek and Lewis-Beck sets have been extended to early 1982. The British data are Gallup poll data on voting intentions and are published in the *Gallup Poll Index*. The French data are the IFOP series on approval published regularly in *France-Soir*.

central banks are politically independent, we should find no relationship at all.

Coefficients of POPDEF1 and POPSUR1 for each country are presented in Table 2. (Full regression results for each model for each country are reported in appendixes.) The Bank of England and Bundesbank coefficients have the same signs but only the coefficients for the Bank of England are significant. As expected, increases in POPDEF1 result in decreases in the interest rate. This relationship is quite strong for the Bank of England. However, the surprise is that the same result seems to hold for popularity surplus—i.e., the higher the surplus the *lower* the interest rate. For this to be true it must be the case that governments try to push above-average popularity rates higher. It would also mean, however, that if a government experienced a decline in popularity that left it still above average, it would respond by *raising* the interest rate. This odd result, of course, is entailed by the linear model and need not be assumed in future efforts.

The French case is more perplexing. If the results are to be believed—and they are relatively strong for the period of popularity deficit—the response of the French authorities to a popularity deficit has been to drive interest rates *up*. When there is a popularity surplus, we see the same pattern as in the British and German cases—although at lower levels of significance: a popularity surplus is reinforced by further interest rate reductions. One may reasonably suppose that this finding is simply further confirmation that lower rates lead to higher popularity. In the French case, both interest rates and popularity tend to move parallel over relatively long periods so that casual priority cannot be established merely by lagging popularity one period.

Table 2
Government Popularity and the Conduct of Monetary Policy
Coefficients on Popularity Variables Added to the Basic HR Model

	POPDEF	POPSUR
Bank of England		
	−0.160	−0.130
	(−3.091)	(−2.535)
Bank of France		
Presidential Popularity	0.0925	−0.0233
	(1.725)	(−0.487)
Prime Ministerial Popularity	0.076	(−0.056)
	(1.758)	(−1.311)
Bundesbank		
	−0.0904	−0.194
	(−0.781)	(−1.726)

t-statistics in ( ).

On the whole, these findings must be viewed as rather weak support for the Frey-Schneider view. Only in the British case is there a significant reaction to POPDEF in the predicted direction. Contrary to our expectation that there would be no relationship in periods of popularity surplus, there are relatively strong coefficients, all with similar signs.

Elections and the Political Business Cycle

The classic political business cycle hypothesis, as discussed by Nordhaus (1975) and Tufte (1978), proposes that governments destabilize the economy for the purpose of bolstering their reelection chances. Depending on the assumptions one makes about the perceptions and preferences of voters, these cycles may have the long-run result of putting the economy in a worse position that it would be in otherwise (Alt and Chrystal, 1983). A second kind of politically related change in economic policy is post-election change that I shall refer to as the mandate hypothesis. Governments may or may not try to manipulate the economy prior to elections so as to further their reelection prospects, but after the elections government policy should reflect whatever mandate the government believes it has received. Hibb's (1977a) findings that unemployment rates are significantly reduced by left-oriented governments in the United States and Britain is one example of research showing the apparent importance of the change in mandate for the conduct of economic policy. There is another possibilty, of course. If central banks are truly independent, there should be no variation in monetary policy associated with elections.

In order to investigate the link between elections and monetary policy in the reaction function framework, I have defined dummy variables representing the four quarters prior to and the four quarters immediately following each national election. (The electoral quarter is included in one or the other of these depending on whether the election occurred nearer the beginning or the end of the quarter.) If elections occur in rapid succession, the variable extends only up to the next election. These variables were run separately and in various combinations as additions to the basic HR models.

In none of these countries are election dates absolutely fixed, so elections may occur either as responses to crises or at times governments view as most advantageous. Since it is implausible to suppose that political business cycle behavior will occur prior to crisis elections, those cases are omitted from the analysis of preelection behavior. In Britain, both 1974 elections were crisis elections, but Labor governments chose the dates for other elections—quite badly for them as it turned out in 1970 and 1979. In France, the National Assembly election of 1968 was a crisis election as were the presidential elections of 1969 and 1974; one was forced by DeGaulle's resignation, the other by Pompidou's death. In Germany, the election of 1969 should be classified as a crisis election; the FDP switched coalition partners to join the SPD. The SPD selected the time for the 1972 election;

the 1976 election was held as scheduled.

The coefficients presented in Table 3 fail, with one exception, to confirm the central proposition of the political business cycle hypothesis. Except for the German election of 1972, there is no indication that interest rates in any of these countries were moved prior to elections in a fashion significantly different than would have been expected given the responses of officials throughout the entire estimating period. Only one of the two SPD-called elections fits the political business cycle hypothesis, but given the expectations outlined above and the extensive anecdotal evidence to that effect that the Bundesbank is very independent, it is surprising that the only significant preelection coefficient is found in the German case.

Table 3
Preelection Conduct of Monetary Policy, Noncrisis Elections
(Sign of Coefficient on Preelection Dummy Variable Added to HR Model)

Year	Bank of England	Year	Bank of France	Year	Bundesbank
	Parliament		National Assembly		Bundestag
66	−0.273	67	−0.085	72	−1.542
	(−0.452)		(−0.130)		(−2.235)
70	−0.820	73	−0.064	76	0.324
	(−1.291)		(−0.097)		(0.385)
79	0.591	78	0.560		
	(0.825)		(0.863)		
			Presidential		
		65	−0.111		
			(−0.170)		
		81	−0.045		
			(−0.051)		

t-statistics in ( ).

While most governments do not try, or are unable, to drive interest rates down for political reasons prior to elections, there is much stronger indication that decisive policy moves do follow elections as suggested by the mandate hypothesis (see Table 4). The dummy variable used here takes the value 1 in the four quarters after the election, else 0. The idea underlying this definition is that the attempt to pursue a mandate is a brief one, and that after four quarters more usual forces dominate monetary policy. In Britain, the Labor governments of the mid-1970s reduced interest rates significantly following both elections. In France each National Assembly election since 1968 was followed by a substantial move in interest rates. In the elections of 1968 and 1973, when the center-right coalition won comfortable victories, there immediately followed a more restrictive monetary policy. In 1978, however, the center-right barely won—mostly because of deep divisions on the left—and that election was followed by a significant decrease in interest rates.

Table 4
Post-election Conduct of Monetary Policy All Elections
(Coefficient of Post-election Dummy Variable Added to HR Model)

Year	Bank of England	Year	Bank of France	Year	Bundesbank
	Labor Victories		National Assembly		Bundestag
66	−0.242 (−0.409)	67	−0.180 (−0.274)	69	1.0335 (1.055)
741	−1.578 (−2.537)	68	1.195 (1.957)	72	2.633 (3.557)
742	−1.114 (−1.693)	73	1.505 (2.385)	76	0.612 (0.778)
		78	−1.333 (−2.208)		
Conservative Victories					
70	−0.440 (−0.746)				
			Presidential Elections		
79	2.065 (3.133)	65	−0.027 (−0.041)		
		69	−0.3216 (−0.458)		
		74	0.9812 (1.354)		
Conservative Incumbents	0.389 (1.237)		Giscard −3.325 (3.454)		Schmidt −0.781 (−0.929)
			Pompidou −1.277 (−2.365)		

t-test in ( ).

French presidential elections as separate events have no significant monetary policy repercussions. While it is clear that the President is the dominant policymaker in economic policy, Suleiman (1980) observes that the President's freedom of action is more constrained by the need for support in the National Assembly than is often supposed. Thus, it is not surprising that Presidents elected in 1969 and 1974, in years *following* National Assembly victories that had been triumphs for the predecessors, did not make innovations in monetary policy.

In the German case, there is only one significant "mandate" coefficient, and this is again for the 1972 election. This sharp and significant increase in the interest rate is exactly the pattern we would expect in a political business cycle. However, the fact that German monetary policy reveals less "mandate behavior" than seen in the other two cases is consistent with our expectations about Bundesbank independence and suggests

that further close examination of the 1972 period would be valuable.

Executive Politics. Despite the fact that French presidential elections have not provoked separate decisive moves in monetary policy, we do find that presidential terms have been characterized by distinctive impacts on monetary policy. This again was tested with a dummy variable, in this case an intercept shift taking the value of 1 for Pompidou's presidency (else 0) and another taking the value of 1 for Giscard's presidency (else 0). Since there is no dummy variable for DeGaulle, the Pompidou and Giscard variables may be interpreted as deviations from the implicit DeGaulle constant. The results show surprisingly strong negative coefficients for both the Pompidou and Giscard terms (Table 4). The results indicate that the interbank rate was on average some 1.3 percentage points lower during Pompidou's presidency than would have been suggested by economic targets alone, and was some 3.3 percentage points lower during Giscard's presidency. The popularity of French presidents has steadily trended downward during the period under examination, and it is generally recognized that Giscard hoped for some time that he could alter French political alignments by establishing a moderate centrist coalition independent of extreme left and right. The negative coefficients on the Pompidou and Giscard variables suggest a general strategy of trying to preserve overall popularity levels. The Giscard result is consistent with his strategy of trying to construct a centrist electoral coalition, perhaps by appealing for support with moderate interest rates.

There are no similar distinctive periods in the other two countries. In Britain, it is true as one would expect that the Conservatives have tended to keep interest rates higher than has Labor, although this difference is significant only at about a .2 level. In Germany, despite the fact that Schmidt also experienced a steady decline in popularity, there is no significant difference between the conduct of monetary policy during his chancellorship and that of Willy Brandt.

Group Interests and Monetary Policy: Politics Types I and II

With minor exceptions in recent years, the history of monetary politics in the United States since WWII has been different from most U.S. policy arenas in that most of the affected interest groups have had relatively low access to the individuals most directly concerned with monetary policy. Federal Reserve officials have had close and continuing interactions only with representatives from the financial sector. This same kind of insulation from interest group pressures appears to be the case in Britain, France, and Germany as well.

However, this relative insulation does not foreclose the possibility that specific groups achieve an indirect impact by pressuring other government officials or that the importance of the group for economic performance means that its views are still taken into account in policymaking even without their exerting any pressure. In the United States, groups harmed by interest rate fluctuations typically seek redress through Congress, which,

albeit ineffectually, predictably tries to find a whip for flogging the Fed whenever interest rates are high (Woolley, 1984b).

British Mortgage Rate: Type I Politics

I have examined the question of sensitivity about interest rates only in the case of Britain. In interviews in 1982, various British officials referred to the political sensitivity of mortgage rates, which are adjustable. Increases in mortgage rates are believed to be intensely disliked, and thus, to result in pressure on the central bank to reduce (or not to raise) the bank rate (or MLR) as pressure builds for an increase in mortgage rates. In order to test for the independent effect of this phenomenon on monetary policy, I constructed a variable, MTGPRESS which is equal to the difference between the current quarterly rate on long-term gilt-edge securities and the mortgage rate. As this difference increases, I assume that pressure to raise the mortgage rate increases as well. If this results in pressure to reduce the MLR, we should find a negative coefficient on MTGPRESS. In fact, the coefficient is *positive* and significantly so (b = 0.244 (2.271)). This occurs, of course, in the presence of the conventional economic reasons for increasing interest rates. One hesitates to infer that rather than exhibiting special sensitivity for mortgagors, the Bank of England tries to make them worse off. More likely, the anecdotal evidence should be examined more closely. Several different kinds of policy actions can delay an increase in the mortgage rate (for example, increasing subsidies to lenders), so that Bank rate would not necessarily reflect this pressure. Not all increases are resisted, and not all resistance is of the same type. These reaction functions are not sufficiently sensitive to pick up those differences.

Business Confidence: Type II Politics.

It is a staple of much contemporary political-economic analysis that governments are obliged to grant special standing to the desires of business. In *Politics and Markets,* Lindblom (1976) made his now-familiar claim that business has a "privileged position" in private-enterprise market-oriented economies. Given the rather mediocre results for measures of general government popularity (only in Britain did monetary policy respond as expected to a popularity deficit), it is interesting to inquire whether monetary policy is more responsive, as Lindblom might suggest, to the condition of business confidence. Our expectations would be essentially identical to those discussed above for the case of popularity. When there is a confidence deficit (when business confidence is below average), governments would take action to boost confidence by lowering interest rates. In periods of surplus, our expectations are again not so clear, but one might anticipate a *negative* association. This could indicate that governments take advantage of periods of relative optimism to stabilize the economy by raising interest rates, or that governments try to stabilize business optimism itself. The latter explanation might be called the Martin hypothesis in recognition of former Federal Reserve Chairman William McChesney Martin's oft-quoted

characterization of the role of the Federal Reserve as being "to take away the punch bowl just when the party really gets going."

Following Lindblom again, we should expect that between countries the degree of attention to business confidence will vary with the degree of public sector involvement in capital allocation and credit markets. The greater the dependence on private markets, the greater the sensitivity to business confidence. Thus, sensitivity should be greatest in Germany and least in France, with Britain somewhere in between.

The data on business confidence in all three countries are drawn from relatively lengthy time series of surveys of the outlook of entrepreneurs for the next few months (often a calendar quarter). The survey results are usually interpreted as revealing the degree of optimism of entrepreneurs. By convention, the results are reported as the difference between the percent responding positively and the percent responding negatively to questions about the future. Thus, these series cycle between some positive number of around 40 when optimism is high and an equivalent negative figure when pessimism is predominant.[5] This is the measure of business confidence used here, introduced with a one-quarter lag.

The basic confidence measure is labeled CONF. The target confidence level is defined as the mean of CONF, and periods of surplus and deficit are defined by CONF2, equal to CONF-MEAN(CONF). BUSDEF1, for periods of confidence deficit, is equal to -1(CONF2) if CONF2 is less than or equal to 0 (else = 0). BUSSUR1, for period of confidence surplus, is equal to CONF2 if CONF2 is greater than 0.

The signs on the coefficients when both BUSSUR1 and BUSDEF1 are entered in the basic HR model are, unlike the case of popularity, exactly as expected in all three countries (see Table 5). Furthermore, the relative sensitivity of policy to business confidence in the three cases is also exactly as expected. The most significant coefficient on BUSDEF1 occurs in the German case—where POPDEF1 had no statistically significant coefficient. The next most significant coefficient occurs in the British case but this coefficient is less significant than the British coefficient on POPDEF1. In France, the results are weak but have the correct sign, which was not the case with POPDEF1. The Martin hypothesis fits in Britain and France, but not in Germany, where confidence surplus produces no systematic response.

[5]For Britain the data are the "optimism" series from the CBI Industrial Trends Survey Data series. The series was provided directly by the CBI. Missing values are replaced with the mean of adjacent observations. For France, data are quarterly averages of the monthly surveys in the "production prévue" series from the INSEE enquête mensuelle auprès des chefs d'entreprises industrielles, "ensemble des branches." For the period since 1969, this series is published in *Tendences de la Conjoncture;* earlier data are found in *Etudes et Conjoncture: Supplément.* The German data are quarterly averages of monthly observations from the IFO series "Geschaeftserwartungen fuer die naechsten 6 Monate: Investionsguter" and were provided by the Bundesbank.

Table 5
Business Confidence and the Conduct of Monetary Policy (Confidence Measures Added to Basic HR Model)

	BUSSUR1 (Confidence surplus)	BUSDEF1 (Confidence deficit)
Bundesbank		
	0.0212	−0.0636
	(0.729)	(−2.305)
Bank of England		
	0.0228	−0.0147
	(2.518)	(−1.746)
Bank of France		
	0.0313	−0.0209
	(1.253)	(−1.127)

t-statistics in ( ).

This brief excursion into the implications of "group politics" for monetary policy provides support for the notion that monetary politics is not interest-group politics. Monetary policy does attend to the needs of business, but the degree to which this is true depends on the role of the state in society.

The Complete Models

Given the many aspects of politics that we have not been able to examine, it is clearly premature to speak of having a fully specified political model of monetary policy decisions. However, it is possible at this point to advance a model for each country that includes the most promising variables identified in the previous sections. These models are quite good in terms of accounting for variation in the interest rate instrument used by each central bank (see Table 6). When compared to models for the same periods consisting only of economic variables, (see Appendices A, B, C) the addition of political variables results in substantial increases in variance explained (measured by adjusted R^2) especially in Germany and France. In terms of the political variables involved, each model is distinct. Each model consistently reflects structural differences between the countries that are familiar and that have usually been judged to be important. In this regard, the specification of political variables appears to be correct.[6]

[6]It is certainly true that the popularity and business confidence variables are not strictly speaking exogenous. It is not my contention that these quantities are unrelated to the economic variables included. It is clearly the case, however, that the included economic variables do not do a particularly good job of accounting for variation in either popularity or business confidence. It is possible then that both variables convey additional valuable information about the condition of the political economy to policymakers, and the models estimated here suggest that this is the case.

Table 6
Full Models Incorporating All Relevant Political Variables

Bank of England (65Q2 – 80Q4)

$$\begin{aligned}BRQ = {} & 0.482 + 0.00031\ DOBA - 0.0034\ DOFRES + 0.775\ BRQ1 \\ & (0.877) \quad (2.469) \quad (-3.937) \quad (10.371) \\ & +0.197\ REDQ1 - 0.758\ DCPI + 0.00032\ PSBRQ \\ & (3.080) \quad (-0.234) \quad (2.924) \\ & -0.128\ POPDEF1 - 0.0335\ POPSUR1 - 0.0162\ BUSDEF1 \\ & (-2.636) \quad (-0.675) \quad (-2.118) \\ & +0.0222\ BUSSUR1 + 1.421\ POST79 \\ & (2.574) \quad (2.368)\end{aligned}$$

$\bar{R}^2 = .91$ DW = 2.053

Bank of France* (64Q2 – 80Q4)

$$\begin{aligned}IBRQ = {} & 1.388 = 12.789\ DFRDMXRQ + 60.185\ DCPI \\ & (3.227) \quad (6.246) \quad (4.308) \\ & +0.289\ REDQ1 + 0.012\ GDEF1 + 1.184\ DIPIC70 \\ & (4.603) \quad (1.533) \quad (1.515) \\ & +1.039\ POST68 + 1.395\ POST73 - 1.156\ POST78 \\ & (1.813) \quad (2.483) \quad (-2.055) \\ & -0.889\ POMPIDOU - 1.338\ GISCARD \\ & (-1.684) \quad (-1.261)\end{aligned}$$

$\bar{R}^2 = .86$

Bundesbank* (64Q2 – 80Q4)

$$\begin{aligned}LR3MOSQ = {} & -36.805 + 117.882\ DCPI76 - 6.976\ MDLSPRQ5 \\ & (-13.777) \quad (7.203) \quad (-2.520) \\ & -9.003\ MDLSPRQ6 + 0.432\ CAPUTB1 + 0.266\ REDQ1 \\ & (-1.816) \quad (14.154) \quad (4.152 \\ & -1.923\ PRE72 + 0.603\ POST72 + 0.0001\ BUSSUR1 \\ & (-3.629) \quad (0.571) \quad (0.004) \\ & -0.0720\ BUSDEF1 \\ & (-3.195)\end{aligned}$$

$\bar{R}^2 = .95$

t-statistics in ( ).
*Models corrected for first-order autocorrelation by two-step full transform method.

The model for Germany includes the political cycle dummy variables for the 1972 elections and the measures of business confidence. In the full model, the "mandate" variable, POST72, proves to be insignificant, leaving only two significant political variables, one for the PRE72 election period, and one for the response to business confidence deficits. These results are, overall, a strong confirmation of Bundesbank independence from type I politics. It is also a striking confirmation of the importance of business confidence in the conduct of monetary policy in market-dominated systems, exactly as Lindblom's hypothesis would lead us to expect. This type II political effect is, of course, fundamental to stability and growth in this kind of political economy.

The British model differs from the German principally by including popularity variables. With the exception of the POST79 variable (marking the onset of the Thatcher regime) no "mandate" variables are significant when the popularity measures are included. The coefficient on the popular-

ity surplus (POPSUR1) is insignificant in the full model—as we had originally anticipated under the Frey-Schneider hypothesis. When there is a business confidence surplus, the Bank of England raises interest rates, either in order to take advantage of permissive political conditions or in an effort to stabilize the animal spirits of entrepreneurs, as suggested by the Martin hypothesis. In sharp contrast to models showing significant interparty differences in British economic policy, this model suggests that prior to Thatcher, monetary policy varied little between Labor and Conservative governments. The implicit partisan competition model that is consistent with these findings is, of course, the Downsian model of highly similar parties competing only at the margin for popular and business support.

The political components of the French model are all "political mandate" variables. Three periods immediately following legislative elections were characterized by distinctive and dissimilar moves in the monetary policy instrument. The presidential terms of Pompidou and Giscard also have had distinctive moderating effects on monetary policy, although the Giscard coefficient is not significant in the full model. These findings are consistent with the conventional image of the French political system as one which is not obliged to be particularly sensitive to ongoing expressions either of popular or of business sentiment. The Constitution of the Fifth Republic was intended to enhance governmental stability by reducing vulnerability to swings in public opinion. A very large public sector together with a strong, centralized state bureaucracy would be expected to reduce the need for altering public sector actions in the face of private sector views. This is not an image of an independent central bank so much as an insulated public sector.

IV. Conclusion: Politics Reflected in Reaction Functions

There is much to be said for resisting the temptation to turn an investigation such as this into a contest between politics and economics. While electoral politics plays an identifiable role in monetary policy in Britain and France, it is a role that is merely an addition to many other factors—most of which we conventionally think of as economic. However, in this respect, monetary policy is no different from other kinds of public policy. It is a very rare occasion when the outcome of electoral politics is a drastic transformation of policy. Such changes are usually limited to one or two selected policy areas that newly elected officials decide to treat as worthy of major investments of time and energy. More typically, after some years of struggle accompanying the initial policy action, a kind of political equilibrium tends to persist, altered in only minor ways as a result of subsequent partisan changes. Interests and ideologies grow up around these policy equilibria making for a rigid formula that can be changed substantially only when crises are perceived.

For a full understanding of the political meaning of the reaction functions that I have presented, we would need additional information that is

much less easily obtained. We would need to know much more, in some detail, about the consequences for various sectors and groups of changes in both the policy instrument and the policy targets. We would need an elaborate and politically sensitive structural model of the political economy. The forecasting models in use today are for the most part inappropriate for this kind of task. The objective of such an ideal model would be to reveal in detail the various implications of the policy actions that policymakers take. We could than know the consequences for particular groups or economic sectors if the central bank moved its interest rate a certain amount. We would also know exactly how far that action went toward stabilizing the many targets included in the reaction function. One could objectively analyze the political meaning of the entire reaction function because one could say clearly exactly what kinds of consequences were being avoided by policymakers.

Such a model does not exist and would probably prove impossible to construct. However, it is still possible that portions of such a model could be developed, at least qualitatively. It is also possible that central bankers and others involved with monetary policy might be persuaded to reveal more about their own judgments as to the possible consequences of following a very different policy from the ones they have selected. If we are to move further toward understanding the political and social antecedents of monetary policy, we cannot avoid the need to advance explicit interpretations of the ways policy routines of the sort modeled in reaction functions reflect and reinforce an existing political solution for society.

In such research, one should be prepared for the possibility that monetary authorities may not try to anticipate in any detail the consequences of their actions that are more than a step or two removed from the actions themselves. One should also be prepared for the possibility that monetary authorities, rather like "satisficing" actors described by Herbert Simon, ordinarily consider a range of possible policy actions that is relatively narrow and bounded by rough rules of thumb (e.g., "if we let interest rates move up that much we'd have chaos in the markets"). Given the nature of things, such rules are largely nonfalsifiable. Such rules make it unnecessary to attempt to project consequences in very much detail; such projections would in any case be of dubious value since the alternatives of interest are, more likely than not, well outside the range of previous experience.

In short, there is no reason *a priori* why we should expect policymakers themselves to be able to articulate, even in conditions congenial to frank reflection, the political formulae that underly their behaviors. What we can predict, I suspect with very high levels of certainty, is that central bankers rarely propose dramatic changes in monetary policy; the reasons for this are as much political as economic: uncharted economic ground is strewn with political hazards. The fact that this conservativism is usually not recognized as reinforcing a political formula should not obscure its political nature for outside analysts.

References

Alt, James E. and Alec Chrystal. 1983. *Political Economics*. Berkeley: University of California Press.

Alt, James E. and John T. Woolley. 1982. "Reaction Functions, Optimization, and Politics: Modelling the Political Economy of Macroeconomic Policy," *American Journal of Political Science* (November): 709–740.

Aronson, Jonathan D. 1977. *Money and Power: Banks and the World Monetary System*. Beverly Hills: Sage, 1977.

Frey, B. and Schneider, F. 1978a. "An Empirical Study of Politico-Economic Interaction in the United States," *Review of Economics and Statistics* 60: 174–183.

_____. 1978b. "A Politico-Economic Model of the U.K.," *Economic Journal* 88: 243–253.

_____. 1979. "An Econometric Model with an Endogenous Government Sector," *Public Choice* 34: 29–44.

Gordon, Robert J. 1977. "World Inflation and Monetary Accommodation in Eight Countries," *Brookings Papers on Economic Activity #2*: 409–468.

Heclo, Hugh. 1978. "Issue Networks and the Executive Establishment," in Anthony King, ed. *The New American Political System*. Washington, D.C.: The American Enterprise Institute.

Hibbs, Douglas A., Jr. 1977a. "Political Parties and Macroeconomic Policy," *American Political Science Review* 71: 1464–1487.

_____. 1977b. *Trade Union Power, Labor Militancy and Wage Inflation; A Comparative Analysis*. Cambridge, Mass.: Center for International Studies, Massachusetts Institute of Technology.

Hodgman, Donald R. and Robert W. Resek. 1983. "Determinants of Monetary Policy in France, The Federal Republic of Germany, Italy, and the United Kingdom: A Comparative Analysis." This volume.

Katzenstein, Peter J., ed. 1977. *Between Power and Plenty: Foreign Economic Policies of Advanced Industrial States*. Madison: University of Wisconsin.

Laidler, David. 1976. "Inflation—Alternative Explanations and Policies: Tests on Data Drawn from Six Countries" in K. Brunner and A. H. Meltzer, eds. *Institutions, Policies and Economic Performance*. Amsterdam: North Holland.

Lindblom, Charles E. 1977. *Politics and Markets: The World's Political-Economic Systems*. New York: Basic Books.

Nordhaus, W. 1975. "The Political Business Cycle," *Review of Economic Studies* 42: 169–190.

Parkin, M. and R. Bade. 1978. "Central Bank Laws and Monetary Policies: A Preliminary Investigation." Mimeographed. London, Ontario: University of Western Ontario.

Sachs, Jeffrey D. 1979. "Wages Profits and Macroeconomic Adjustment: A Comparative Study," *Brookings Papers on Economic Activity, #2*.

Schmidt, Manfred G. 1982. "Does Corporatism Matter? Economic Crisis, Politics and Rates of Unemployment in Capitalist Democracies in the 1970s," in G. Lehmbruch and P. C. Schmitter, eds. *Patterns of Corporatist Policy-Making*. Beverly Hills: Sage.

Suleiman, Ezra N. 1974. *Politics Power and Bureaucracy in France: The Administrative Elite*. Princeton: Princeton University Press.

_____. 1978. *Elites in French Society: The Politics of Survival*. Princeton: Princeton University Press.

_____. 1980. "Presidential Government in France," in Richard Rose and Ezra N. Suleiman, eds. *Presidents and Prime Ministers*. Washington, D.C.: The Amerian Enterprise Institute.

Tufte, Edward R. 1978. *Political Control of the Economy*. Princeton, N.J.: Princeton University Press.

Woolley, John T. 1977. "Monetary Policy Instrumentation and the Relationships of Central Banks and Governments," *The Annals of the American Academy of Political and Social Sciences* 434 (November): 151–173.

———. 1982. "Monetarists and the Politics of Monetary Policy," *The Annals of the Academy of Political and Social Sciences* 459 (January): 148–160.
———. 1984a. "Central Banks and Inflation: Influence and Independence," in Leon N. Lindberg and Charles Maier, eds. *The Politics and Sociology of Global Inflation and Recession*. Washington, D.C.: The Brookings Institution.
———. 1984b. *Monetary Politics: The Federal Reserve and the Politics of Monetary Policy*. New York: Cambridge University Press.

Appendix A.
All British Models
Dependent Variable = BRQ (65Q2 – 80Q4)

	Inter-cept	BRQ1	DOBA	DOFRES	REDQ1	DCPI	PSBRQ	POLITICAL	VARIABLES	$\overline{R^2}$	DW
								POPSUR1	POPDEF1		
1.	1.043	0.785	0.00033	−0.00025	0.223	−5.337	0.00032	−0.130	−0.160	.88	1.832
	(2.088)	(9.976)	(2.355)	(−2.781)	(3.108)	(−1.518)	(2.529)	(−2.535)	(−3.091)		
								PRE66			
2.	0.556	0.746	0.00024	−0.00027	0.217	−2.430	0.00037	−0.273		.86	1.790
	(1.063)	(8.988)	(1.611)	(−2.838)	(2.741)	(−0.654)	(2.783)	(−0.453)			
								PRE70			
3.	0.457	0.730	0.00021	−0.00027	0.257	−2.383	0.00034	−0.820		.88	1.812
	(0.934)	(8.879)	(1.413)	(−2.886)	(3.200)	(−0.657)	(2.529)	(−1.291)			
								PRE79			
4.	0.463	0.745	0.00024	−0.00024	0.218	−1.695	0.00034	0.591		.86	1.806
	(0.937)	(9.048)	(1.657)	(−2.488)	(2.815)	(−0.459)	(2.482)	(0.825)			
								POST66			
5.	0.534	0.742	0.00024	−0.00027	0.233	−2.436	0.00038	−0.242		.86	1.786
	(1.042)	(8.975)	(1.614)	(−2.856)	(2.886)	(−0.653)	(2.799)	(−0.409)			
								POST741			
6.	0.108	0.714	0.00036	−0.00032	0.298	−0.459	0.00036	−1.578		.89	1.985
	(0.219)	(9.020)	(2.432)	(−3.473)	(3.783)	(−0.129)	(2.841)	(−2.537)			
								POST742			
7.	0.385	0.703	0.00030	−0.00031	0.255	0.581	0.00039	−1.114		.88	1.904
	(0.789)	(8.382)	(2.000)	(−3.276)	(3.287)	(0.148)	(2.979)	(−1.693)			
								ALL CONSERVATIVE			
8.	0.473	0.747	0.00028	−0.00026	0.205	−2.414	0.00038	0.389		.88	1.186
	(0.965)	(9.140)	(1.869)	(−2.931)	(2.632)	(−0.665)	(2.857)	(1.237)			
								POST70			
9.	0.542	0.736	0.00022	−0.00027	0.228	−2.003	0.000364	−0.440		.86	1.798
	(1.081)	(8.885)	(1.463)	(−2.852)	(2.952)	(−0.547)	(2.708)	(−0.746)			

								POST79			
10.	1.240	0.667	0.00032	−0.00039	0.172	0.485	0.00034	2.065		.89	2.070
	(2.395)	(8.332)	(2.294)	(−4.099)	(2.350)	(0.139)	(2.722)	(3.133)			
								BUSSUR1	BUSDEF1		
11.	−0.194	0.779	0.00020	−0.00029	0.241	−0.9334	0.00041	0.0228	−0.0147	.90	1.793
	(−0.396)	(10.330)	(1.474)	(−3.339)	(3.419)	(−0.274)	(3.341)	(2.518)	(−1.746)		
								MTGPRESS			
12.	0.398	0.788	0.00011	−0.00016	0.195	−6.087	0.00032	0.244		.88	1.766
	(0.836)	(9.648)	(0.752)	(−1.577)	(2.599)	(−1.554)	(2.488)	(2.271)			
13.	0.481	0.742	0.00024	−0.00027	0.225	−2.161	0.00037			.87	1.782
	(0.977)	(9.047)	(1.611)	(−2.873)	(2.926)	(−0.593)	(2.814)				

t-statistics in ( )

Variable List, Economic Variables

Bank of England

BRQ = Bank Rate
BRQ1 = Bank Rate lagged one quarter
DOBA = Change over prior quarter in official borrowing abroad, lagged one quarter
DOFRES = Change over prior quarter in official reserves lagged one quarter
DCPI = Percentage change over four quarters in consumer price index, lagged one quarter ($\ln(CPI_{t-1}/CPI_{t-5})$)
PSBR = Public sector borrowing requirement, current quarter

Bundesbank

LR3MOSQ = Three month money-market loan rate
DCPI76 = Percentage change over four quarters in consumer price index, lagged one quarter (base 1976) ($\ln(CPI_{t-1}/CPI_{t-5})$)
MDLSPRQ5 = Percentage change over four quarters in DM/$ exchange rate when seasonally adjusted current account balance of payments is greater than 0.
MDLSPRQ6 = Same as MDLSPRQ5 when current account balance of payments is less than or equal to 0.
CAPUTB1 = Rate of capacity utilization lagged one quarter.
REDQ1 = Eurodollar rate lagged one quarter.

Bank of France

IBRQ = Quarterly average for overnight money market rate
DFRDMXRQ = Percentage change over four quarters in the spot exchange rate, French Franc/DM.
DCPI = Percentage change over four quarters in the consumer price index, lagged one quarter ($\ln(CPI_{t-1}/CPI_{t-5})$)
REDQ1 = Eurodollar rate lagged one quarter
GDEF1 = Government budget deficit lagged one quarter
DIPIC70 = Percentage change over four quarters in industrial production index (base 1970), lagged one quarter.

Appendix B: All German Models*
Dependent Variable = LR3MOSQ (69Q3 – 80Q1)

	Inter-cept	DCPI76	MDLSPRQ5	MDLSPRQ6	CAPUTB1	REDQ1	POLITICAL VARIABLES		$\bar{R}^2$
							POPDEF1	POPSUR1	
1.	−36.814	93.646	−5.850	−6.051	0.442	0.288	−0.090	−0.194	.75
	(−6.144)	(5.825)	(−2.077)	(−1.041)	(5.877)	(2.815)	(−0.781)	(−1.726)	
							PRE 72		
2.	−36.065	99.549	−6.155	−6.593	0.424	0.305	−1.547		.82
	(−8.931)	(7.243)	(−2.397)	(−1.115)	(8.687)	(3.547)	(−2.235)		
							PRE 76		
3.	−34.112	91.512	−6.080	−5.403	0.396	0.379	0.324		.73
	(−6.761)	(5.626)	(−1.970)	(−0.890)	(6.623)	(4.119)	(0.385)		
							POST 69		
4.	−30.509	99.146	−5.534	−4.286	0.350	0.362	1.033		.71
	(5.640)	(5.260)	(−1.960)	(−0.748)	(5.271)	(3.819)	(1.055)		
							POST 72		
5.	−31.545	72.157	−1.375	−3.005	0.375	0.403	2.633		.87
	(−8.637)	(5.407)	(−0.521)	(−0.529)	(8.725)	(5.726)	(3.557)		
							POST 76		
6.	−33.472	92.860	−5.274	−3.950	0.387	0.393	0.612		.71
	(−6.438)	(5.350)	(−1.848)	(−0.675)	(6.292)	(4.036)	(0.778)		
							BUSSUR1	BUSDEF1	
7.	−33.924	109.581	−6.640	−4.494	0.391	0.358	0.021	−0.064	.83
	(−8.577)	(7.717)	(−2.681)	(−0.805)	(8.159)	(4.689)	(0.729)	(−2.305)	
							SCHMIDT		
8.	−26.084	93.443	−6.630	−6.347	0.299	0.430	−0.781		.73
	(−3.259)	(5.255)	(−2.486)	(−1.253)	(3.230)	(4.124)	(−0.929)		
9.	−31.558	89.412	−5.368	−4.612	0.368	0.374			.68
	(−5.921)	(4.946)	(−1.881)	(−0.820)	(5.771)	(3.842)			

t-statistics in ( ).
*All models corrected for first-order autocorrelation by two-step full transform method.

Appendix C: All French Models†
Dependent Variable = IBRQ (69Q2 – 80Q4)

	Inter-cept	DFRDMXRQ	DCPI	REDQ1	GDEF1	DIPIC70	POLITICAL VARIABLES		$\bar{R}^2$
1.	1.980 (3.422)	9.104 (3.903)	41.628 (5.378)	0.315 (4.018)	0.012 (1.610)	1.071 (1.472)			.66
2.	2.333 (3.749)	8.448 (3.616)	34.480 (4.080)	0.315 (4.107)	0.011 (1.468)	1.018 (1.396)	PPDEF1* 0.093 (1.725)	PPSUR1 −0.023 (−0.487)	.67
3.	2.632 (3.680)	9.450 (3.914)	33.361 (3.888)	0.310 (3.786)	0.014 (1.727)	0.801 (0.940)	PMDEF1** 0.076 (1.758)	PMSUR1 −0.056 (−1.311)	.65
4.	2.005 (3.355)	9.080 (3.854)	41.413 (5.235)	0.314 (3.981)	0.012 (1.595)	1.071 (1.460)	PRE65 −0.111 (−0.170)		.65
5.	1.992 (3.390)	9.090 (3.386)	41.404 (5.180)	0.316 (3.975)	0.012 (1.595)	1.070 (1.458)	PRE67 −0.085 (−0.130)		.65
6.	1.982 (3.374)	9.140 (3.862)	41.693 (5.368)	0.314 (3.916)	0.012 (1.595)	1.080 (1.461)	PRE73 −0.064 (−0.097)		.65
7.	1.935 (3.364)	8.910 (3.791)	40.584 (5.194)	0.326 (4.111)	0.011 (1.538)	1.052 (1.438)	PRE78 0.560 (0.863)		.65
8.	1.954 (3.205)	9.186 (3.872)	41.690 (5.346)	0.317 (3.847)	0.012 (1.496)	1.069 (1.426)	PRE81 −0.045 (−0.051)		.66
9.	2.01 (3.387)	9.066 (3.846)	41.281 (5.231)	0.314 (3.987)	0.012 (1.600)	1.079 (1.469)	POST67 −0.180 (−0.274)		.65
10.	1.716 (3.369)	10.418 (4.690)	43.006 (6.269)	0.321 (4.359)	0.012 (1.603)	1.105 (1.464)	POST68 1.195 (1.957)		.73

11.	1.980 (3.577)	8.890 (3.955)	45.282 (5.956)	0.271 (3.495)	0.012 (1.712)	1.120 (1.596)	POST73 1.505 (2.385)		.68
12.	1.825 (3.655)	9.572 (4.359)	41.933 (6.207)	0.340 (4.644)	0.012 (1.569)	1.071 (1.428)	POST78 −1.333 (−2.208)		.73
13.	1.985 (3.351)	9.099 (3.860)	41.562 (5.214)	0.315 (3.980)	0.012 (1.595)	1.071 (1.459)	POST65 −0.027 (−0.041)		.65
14.	1.958 (3.407)	9.593 (3.808)	41.093 (5.258)	0.322 (4.030)	0.012 (1.587)	1.078 (1.466)	POST69 −0.322 (−0.458)		.65
15.	2.213 (3.687)	10.071 (4.115)	37.968 (4.618)	0.305 (3.904)	0.011 (1.504)	1.038 (1.443)	POST74 0.981 (1.354)		.65
16.	1.664 (2.794)	8.346 (3.552)	48.460 (5.668)	0.288 (3.636)	0.012 (1.670)	1.246 (1.695)	BUSSUR1 0.031 (1.253)	BUSDEF1 −0.021 (−1.127)	.67
17.	1.058 (2.075)	12.890 (5.745)	83.990 (6.087)	0.257 (3.548)	0.012 (1.628)	1.175 (1.581)	POMPIDOU −1.277 (−2.365)	GISCARD −3.375 (−3.451)	.77

t-statistics in ( ).
†All models corrected for first-order autocorrelation by two-step full transform method.
*Presidential Popularity
*Prime Ministerial Popularity

Discussion

Marcello de Cecco

Economists seem to elicit from political scientists the same deference they themselves accord physicists—at least this is what can be inferred from the present fashion in political science of "reaction functions" employed to analyze the relevance of political variables. Reaction functions have enjoyed a varying degree of popularity in economics, beginning in the late fifties and early sixties. They then came under heavy fire and they were not used for a while. Now they seem to be in fashion again.

I will, in my comment on Mr. Woolley's paper, abstain from remarks on the econometric techniques he used. They apply to all analyses based on reaction functions, and they can be more adequately made by econometrician specialists, who are present at this Conference, and will no doubt explain them much better than I could. However, as Albert Hirschman wrote more than a decade ago, "There are serious pitfalls in any transfer of analytical tools and modes of reasoning developed within one discipline to another." (*Bias for Hope,* New Haven: Yale University Press, 1971, p. 3–4). This is particularly true when the transfer involves tools whose adequacy and precision have been heavily criticized.

I will thus limit myself to comments on the models of political and economic behavior on which Mr. Woolley bases his analysis. But most users of reaction functions fail to recontruct complete models from their reduced form equations. Still, it is the exact knowledge of this process which may be crucial.

My main point relates to the apparent "closedness" of Woolley's models of monetary policy determination. This policy variable is the interest rate throughout. And, among the determinants of interest rate dynamics, he seems to have elected not to include the interest rates prevailing on world financial markets. If he restricted his modeling to American monetary policy, his choice of determinants, of independent variables, could be justified somewhat. But the core of his analysis is the study of European countries like France, Germany, and Great Britain. And, in their cases, autarchic independent variables cannot possibly explain the whole of monetary policy changes. This prima facie conclusion rests on the whole body of international economic doctrine. Mr. Woolley should prove that what happens in the rest of the world does not matter, and that only varying combinations of domestic political determinants influence monetary policy in these countries.

* Professor of Economics, European University Institute, Florence, Italy.

To be perfectly honest, one could say that Mr. Woolley introduces an international determinant by choosing what he calls "business confidence" as a determinant of monetary policy. If business confidence in the actions of a government declines, there will be capital exports and a consequent impact on the spot and forward exchange rates of the currency in question. Reequiliberating monetary policy changes will follow, as a result. Ever since the time Montesquieu first noticed it, business has been able to influence government policies by exporting capital and thus exerting pressure on interest rates. But I do not think this is the model Mr. Woolley has in mind when he chooses "business confidence" as an independent variable in the monetary authorities' reaction function. The monetary authorities of his models thus remain altogether impervious to what happens in the rest of the world.

I do not want to blow this illustration out of proportion. But I think it is an extremely important one, especially if we pay attention to the time period Woolley's analysis embraces. This is the period when the trade integration of Europe takes place, and, at the same time, world financial integration is proceeding apace. I presume one could have extracted quite good mileage from comparing the dynamics of the relative openness of those countries and its effect of their monetary policies in the period under review. One could then measure the relative importance of this variable with that of the various political variables, to find the three countries' degree of independence from exogenous variables. To put my criticism more vividly, it could very well be that German monetary authorities are better able than their British colleagues to resist policy changes dictated by politicians whose eyes are fixed on opinion polls. Nevertheless, both monetary authorities may be equally unable to resist the influence of policy changes dictated by politicians whose eyes are fixed on opinion polls. Nevertheless, both monetary authorities may be equally unable to resist the influence of policy changes dictated by American politicians whose eyes are fixed on opinion polls, changes whose effects are transmitted to the rest of the world through the international financial market.

Are such "exogenous shocks" to be considered really exogenous? Or should American political influence be included as an independent variable in the reaction functions of other countries' monetary authorities?

We could, of course, assume all this away by assuming that it has the same impact on all countries. But is this really justifiable? Or are American policy changes more important to German monetary policy than they are to French monetary policy? If this were true, it might very well be that Woolley's results could be falsified to a notable extent by the undetected presence of the "exogenous" variable which exerts its influence differently on different countries. Woolley's aim in this paper seems to have been to discover the relative influence of politicians and pressure groups on monetary policymaking in different countries. Relative autonomy from "exogenous" policy changes, I believe, is at least as important as relative autonomy from domestic political and pressure group influence.