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ALTERNATIVE APPROACHES TO THE POLITICAL BUSINESS CYCLE

by

William D. Nordhaus

October 1989
Abstract of

Alternative Approaches to the Political Business Cycle

William D. Nordhaus, Yale University
August 1989

This paper reviews the theory and evidence concerning political business cycles (PBC), which are based on the obvious facts of democratic life that voters care about the economy while politicians care about power. The first section provides an overview of different approaches to political cycles, describing five models that have been used in different contexts. The next two sections review major theoretical issues, with attention to the "microfoundations" of politico-economic systems, an exploration of the implications of ideological parties for political equilibria, and a formal analysis of a number of different PBC models. The empirical sections begin with an analysis of two important empirical questions in PBC models: whether voters are ultrarational and whether parties are ideological or opportunistic. The final section then examines historical and econometric evidence to determine the importance of political cycles in macroeconomic activity.
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October 10, 1989 [pbc1017]

I. INTRODUCTION

It is impossible to consider the ordinary course of affairs in the United States without perceiving that the desire to be re-elected is the chief aim of the President; ... and that especially as [the election] approaches, his personal interest takes the place of his interest in the public good.

- Alexis de Tocqueville

While political economy has increasingly concentrated upon the behavior of markets, in some areas it is impossible to ignore the interaction between economic motivation and political decisions. The theory of the political business cycle (PBC) arose from the obvious facts of life that voters care about the economy while politicians care about power. What, then, are the implications of these two facts for economic activity?

In the last few years, economists and political scientists have devoted considerable attention to the theory and behavior of interacting politico-economic systems. This paper reviews both the theory and evidence underlying PBC analysis. The first section begins with an overview of different approaches to political cycles. The following two

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1 The author is grateful for helpful comments from Ray Fair, Robert Inman, Dennis Mueller, members of the Yale Workshop in Macroeconomics, and members of the Brookings Panel. In addition, able research assistance was provided by Akiva Dickstein, Donald Smythe, and Zili Yang.

2 de Tocqueville [1835], p. 137.
sections review some theoretical issues, with attention to the "microfoundations" of politico-economic systems and a formal examination of PBC models. The final sections then examine the evidence to determine whether the PBC models are consistent with historical behavior.

II. MACROECONOMICS AND MACROPOLITICS

A. Basic assumptions

Before plunging into a thicket of PBC models and data, we begin with a survey of the forest. In most macroeconomic studies, political factors are taken as exogenous. The PBC approach, by contrast, analyzes how the economy behaves when political and economic factors interact with one another.

Five sets of questions are central to PBC models:

1. Voters. What governs voter behavior? Do economic events loom large in voting behavior? Are voters rational and well-informed or irrational and poorly informed? Are voters backward-looking or forward-looking?

2. Parties. What motivates political leaders or parties (for succinctness, we label those who seek political office as "parties")? Are they vote-maximizing and opportunistic, or do they ideologically pursue a set of economic and social objectives as they serve a given constituency?

3. Economic structure. What is the structure of the economy? Can parties affect economic outcomes, or is policy "ineffective"? What are the important instruments of policy (e.g., fiscal policy, transfer payments, monetary policy), and who controls them (President, Congress, central bank)?
4. **Shocks**. What are the shocks to politics and the economy? Are shocks external (such as from hurricanes, droughts, foreign wars, and revolutions)? Are they internal to the political process (as when one President leaves his successor a large deficit or a high inflation rate to reduce)?

5. **Competence**. Do parties pursue their objectives competently (i.e., efficiently), or do they bumble around, neither satisfying voters nor achieving their ideological objectives?

Studies over the last few years have explored a number of different approaches to these five issues. The two sets of issues that have received the most attention concern the rationality of voters and the behavior of parties.

On the first question, a central dispute in the PBC literature (as indeed in much of economics) revolves around whether voters have rational expectations about both economic policy and party platforms. Voters are said to be **ultrarational** if they have rational expectations, possess all available information, and evaluate parties by comparing their expected future performances. If voters fall short of this standard, they are said to be **nonrational**. The sin of nonrationality comes in many forms, and we present a fuller discussion in later sections.

The other major issue concerns whether parties are opportunistic or ideological. Parties are said to be **opportunistic** if they choose policies so as to maximize the probability of election (or reelection) without regard to past positions, the views of the party faithful, or actual economic outcomes. Parties are said to be **ideological** if they set policies so as to attain certain economic and social
objectives and give no independent weight to gaining office or to political popularity.

In practice, many politico-economic models assume that voters do not possess all available information and are backward-looking rather than forward-looking. In addition, PBC models differ on party motivation. We return to a detailed consideration of these issues later in this paper.

B. Predictions of the theories

We first sample some of the major results of the PBC literature. This discussion is meant to illuminate rather than exhaust the subject, and a later section provides a formal analysis of PBC models. 3

Model 1. Opportunistic parties, nonrational voters ("opportunistic cycle"). One of the first examples to be systematically explored combined vote-maximizing parties and nonrational voters. 4 In this example, voters evaluate incumbents by examining performance retrospectively; they do not attempt to predict future performance. Moreover, incumbents choose economic policies so as to maximize their vote at the next election. These models analyze the choice between inflation and unemployment, where low unemployment today leads to higher inflation now and in the future.

There are two results that can be derived from this example: (1) The first prediction is that parties will engage in anti-inflation policies early in the electoral cycle and

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3 There are several useful surveys of the general literature. One of the most balanced is Paldam [1981], which is particularly insightful in linking the economic and the political-science literature.

4 See Nordhaus [1975] and MacRae [1977].
stimulate the economy as elections approach. (2) In addition, because of the retrospective evaluation of voters, the political system has a short time horizon (or too high a discount rate) and will move to a high-inflation equilibrium.

Model 2. **Ideological parties, nonrational voters** ("ideological cycles"). A second approach, developed by Hibbs, also examined the politico-economic interaction of politics with unemployment and inflation. In his approach, there are identifiable parties (e.g., left and right); "left-wing" parties are ones that choose high inflation and low unemployment while "right-wing" parties choose low inflation and high unemployment. In this framework, voters choose the parties that best represent their preferences. In the ideological cycle, economic policies are determined by changes in the party in power rather than by the desire to be reelected. Policies evolve as parties change more than they change within the electoral cycle as elections approach.

Model 3. **Ultrarational voters**. One of the most influential criticisms of PBC theory derives from the view that voters are ultrarational—that is, they have the same information as parties, are forward-looking, and suffer from no memory lapses. In such a situation, parties cannot "fool" voters by undertaking partisan manipulation of the economy. If, for example, the government were to stimulate the economy before an election -- hoping that present pleasures would in the voters' minds outweigh potential future pains -- the ultrarational voters would quickly see through the manipulative policies. As a result, rational opportunistic parties -- knowing that they could not fool the

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5 See Hibbs [1977], [1982], and [1987].

6 An early statement was in McCallum [1978].
voters -- would not attempt to manipulate the economy and would therefore, not induce a political business cycle.

This approach obviously depends crucially upon the ultrarationality of voters and parties. There have been few attempts to test the hypothesis of ultrarationality in the PBC framework, although it has a number of implications that are tested later in this paper.

Model 4. Shocks external to the political system. The models described above either have economic shocks arising from the political system (as in model 1) or are silent about sources of shocks (as in models 2 and 3). An alternative approach emphasizes shocks that are from external events, such as from war, revolution, or energy.

For concreteness, assume that the unfavorable shock consists of a purely external event, such foul weather. In the case of opportunistic parties, the system's responses will depend upon the rationality of voters. If voters are ultrarational, they will recognize that the incumbent party is not responsible and the event will have no impact upon the parties' popularity; moreover, the policy response to the shock will be independent of the party in power. If, on the other hand, the voters are poorly informed, they might easily misunderstand the source of the shock, blaming the incumbents and voting the incumbents out of office.

In the case of ideological parties, the response is more complicated. Rational voters will respond to an external shock by asking which party is best equipped to deal with the shock. An inflationary shock, for example, might induce voters to turn to conservative governments, while a depression might benefit left-wing parties. The shock would therefore be followed by a change of regime and a change in
policy; by contrast with the case in the last paragraph, the policy response would in some sense be caused by the shock although it was executed by the ideological party.

No study has attempted to separate the impact of external shocks from the role of parties. Three pieces of evidence are suggestive here. First, it appears that voters respond to external shocks much as they do to induced shocks. The response of voters to oil-shock or food-shock inflation was difficult to distinguish from voter response to demand-pull inflation. Second, the impact of external shocks on party popularity appears not to depend upon the party in power; voters disapprove of both conservative and liberal governments whenever either inflation or unemployment rises. Third, in examining the regime shifts during the two oil shocks, no automatic shift toward conservative governments appear. Of eleven changes of regime in major OECD countries in the period immediately following the two oil shocks, seven moved in a conservative direction, while four moved toward the left.\(^7\)

Model 5. Differences in competence. In the 1988 Presidential election, candidate Dukakis argued, "This election is about competence, not ideology." This remark suggests an approach in which popularity and elections respond to voters' judgment of the competence rather than the ideology of parties.

What is meant by competence? A party is competent to the extent that it manages the economy efficiently. Competence requires that parties acquire the best available

\(^7\) The regime shifts are listed in Alesina [1989], Table 1. The period of the first oil shock was January 1974 through December 1975, while the period of the second oil shock was January 1978 through December 1981.
information on the structure of the economy and utilize that information effectively. Perfect competence implies Pareto-efficient outcomes. The first four models assume that the parties are perfectly competent; the parties might act in pigheadedly ideological ways or in venal opportunistic ways, but they do not waste resources through foolish and inefficient actions.

A promising strategy would be to allow for differences in competence among parties to motivate both voter evaluation and political behavior. One approach would be to allow for differences in competence among parties or candidates as the basis for voter evaluation of parties. Voters might then choose among parties because of different perceived levels of competence rather than because of differing ideologies. A model incorporating differing competence has been proposed by Rogoff and Sibert [1988], who argue that informational asymmetries can induce changes in fiscal policy that are timed to influence elections. Another approach, suggested by Charles Schultze in his comments below, rests on the observation that parties operate with different "models" of reality and that the models tend to harmonize with the party preferences. In both cases, incompetent parties have somehow failed to use all the available information and are therefore showing symptoms of irrationality.

There are many other approaches to PBC models, but this brief survey hints at the richness of the possible outcomes. Table 1 summarizes the assumptions and some salient results of the five approaches described above. One crucial point

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8 Rogoff and Sibert assume that governments, which differ in levels of competence, learn about their competence before the public and are able to hide incompetence from the public until after the election. A skeptic might observe that politicians are often the last people to discover their own incompetence.
emerges from this survey: given the variety of institutions, party structures, sources of shocks, and degrees of rationality and competence, it is most unlikely that any clear pattern of politico-economic behavior will emerge. Moreover, like anomalies in financial markets, regularities in the political cycle are likely to be gradually eroded as political institutions evolve or as economic agents learn or voters learn about manipulative political behavior.

III. MICROFOUNDATIONS OF POLITICAL ECONOMY

Before analyzing alternative models of political business cycles, it is necessary to consider briefly the microfoundations of these models. As noted above, one of the major debates in the PBC literature revolves around the behavior of parties: are they opportunistic vote maximizers or are they ideological and issue-oriented? Surprisingly, this issue has received little attention in the economic literature on public choice, which has stayed on the trail of the economic theory of politics blazed by Hotelling and Downs. However, as this section will indicate, incorporation of parties' ideologies has profound implications for the Hotelling-Downs theory of political convergence.

Following Downs, the canonical economic model of electoral competition holds that "parties formulate policies in order to win elections, rather than win elections in order to formulate policies."\(^9\) Under this and a number of other simplifying assumptions, parties' platforms will tend to converge to a common policy, which represents the preferences

\(^9\) Downs [1957], p. 28.
of the median voter.\textsuperscript{10} The "median-voter theorem" has been enormously influential in the growing public-choice literature.

The early PBC models tended to follow the Downsian tradition, although this approach has recently been complemented by ideological models. A glance at political history leaves little doubt that, at different times and in different measures, both ideology and opportunism were important motivating forces. Given the importance of this topic, we will sketch in this section some recent developments in political theory and note their importance for public choice generally and for models of political cycles specifically.

The compelling feature of the hypothesis of vote maximizing is that getting elected is a necessary condition for implementing one's program. But to argue that getting elected is all that motivates politicians is akin to arguing that winning law suits is the only objective of lawyers -- which overlooks the fact that 90 percent of criminal cases end in plea-bargained "losses" by the defense. Parties, like lawyers, are concerned with the substantive outcomes of their ventures.

A more appealing approach is to assume that parties are concerned both with being elected \textit{per se} and with the substantive political outcomes. A natural objective function for the party is \( W_k(E[U_k(x)], p_k) \), where \( W_k \) is the preference function of the kth party, \( E[U_k(x)] \) represents the expected utility of the outcome according to the ideology of party k. U is the ideology or utility function of the party over

\textsuperscript{10} This section will not consider the multitude of unsettled issues of political theory, many of which are analyzed in Ordeshook [1986].
economic outcomes, x is the economic policy and outcome, and \( p_k \) is the probability of party k being in power. When a party puts all the weight on the first term of \( W(\cdot) \), it is purely ideological, concerned only with the substantive economic outcome. When the party puts all the weight on the second term, \( p_k \), the preference function reduces to that of the purely opportunistic party of the Hotelling-Downs model.

It is useful to compare the results of the pure ideological model with the traditional results of Downsian vote-maximizing parties.\(^{11}\) The most important result is that, with ideological parties, a stable equilibrium may exist in which parties have different policies. The logic of this result is straightforward: Assume that there are two parties, the liberals (L) and the conservatives (C), and that each announces a policy about economic variable \( x \). The preferences of the parties are given by the parameter \( \alpha \), where \( x = \alpha_k \) is the preferred policy of the kth party. We assume that \( \alpha_L < \alpha_m < \alpha_C \), where \( \alpha_L \) is the preferred policy of the liberal party, \( \alpha_m \) that of the median voter, and \( \alpha_C \) that of the conservative party. To see why purely ideological parties tend to diverge, assume the contrary, that both parties start out with initial platforms representing the median voter. By moving a little bit away from the center and toward its preferred position, either party can do no worse and has the prospect of gaining power to implement its policies. This shows that identical policies are not an equilibrium with purely ideological parties.

\(^{11}\) The most persuasive analysis for ideological parties has been made in pioneering work by Wittman in [1977] and [1983]; that latter paper is the best available survey of the theory and evidence on ideological parties.
We next examine the behavior of ideological parties by simplifying the general preference function introduced above and solving numerically for the equilibria. Assume that the W function is additively separable and that the parties' utility functions are quadratic. Using the independence axiom of expected-utility theory, the preference function should be linear in the probabilities. We can therefore write the objective for party L as:

\[(1) \quad \max W_L(E[U_L(x)], p_L) = -\beta [p_L(x_L - \alpha_L)^2 + p_C(x_C - \alpha_L)^2] + (1-\beta) \eta p_L
\]

where the two terms in (1) represent the two arguments in \( W_L(\cdot) \). In addition, \( \beta \) is the relative weight on ideology; \((1-\beta)\) is the weight on the prospect of gaining office; \( p_L \) is the probability of party L winning the election; \( p_C = 1 - p_L \); \( x_L \) is the stated platform or position of party L (which is also the outcome if party L wins the election); \( \alpha_L \) is the preferred position of party L; and \( \eta \) is the preference weight on winning elections.

We consider an election game in which parties simultaneously pick their strategies (i.e., each chooses its \( x_k \)), with each party assuming that the other will not change its last position. Moreover, to avoid problems of time consistency, we assume that parties implement their promises. These assumptions lead to the following maximization by party L:

\[
\frac{\delta W_L}{\delta x_L} = -2\beta (x_L - \alpha_L) p_L + \frac{\delta p_L}{\delta x_L} [\beta (x_L - \alpha_L)^2 - (x_C - \alpha_L)^2] - \eta (1-\beta) = 0.
\]

From this equation, it is easily seen that as the party places a greater and greater weight on electoral victory (as
\[ \beta \text{ tends to zero), this becomes } \frac{\delta p_L}{\delta x_L} = 0. \text{ This implies that, for } \beta = 0 \text{ (pure opportunism), } p_L \text{ is maximized, which is the standard Hotelling-Downs convergence result. In the general case, we have:} \]

\[ (2) \quad \frac{\delta p_L}{\delta x_L} = -\frac{2\beta (x_L - \alpha_L)p_L}{\beta[(x_L - \alpha_L)^2 - (x_C - \alpha_L)^2] - \eta(1-\beta)} . \]

For the polar ideological party, where \( \beta = 1 \), this reduces to:

\[ (3) \quad \frac{\delta p_L}{\delta x_L} \quad \frac{1}{p_L} = -\frac{2 (x_L - \alpha_L)}{(x_L - \alpha_L)^2 - (x_C - \alpha_L)^2} \]

The left-hand side of equation (3) represents the semi-elasticity of the probability of winning with respect to policy. In equilibrium, this is equated to the marginal disutility of moving away from the party's preference (in the numerator of the right-hand side) divided by the utility of the distance between the parties (in the right denominator). As long as economic policy can affect election outcomes, the left-hand side of equation (3) will be finite and positive. This implies that the denominator of the right-hand side will be non-zero, which signifies that parties have not converged.

To close the model, we need an assumption about voter behavior. We simplify the problem by specifying that parties are symmetrical mirror-images in preferences and behavior, and that the probability of electoral victory is an unbiased, quadratic function of party policies. The probability of party L winning is then given by the aggregate voting function:

\[ (4) \quad p_L = 1 - p_C = \frac{1}{2} - \sigma(x_L - \alpha_m)^2 + \sigma(x_C - \alpha_m)^2 \quad ; \quad 0 \leq p_L, p_C \leq 1. \]
This equation states that the probability of party L winning equals one-half minus a coefficient $\sigma$ times the squared divergence of party L from the median voter plus the same term for party C. In addition, we omit the constraint that $0 \leq p_k \leq 1$. The coefficient $\sigma$ represents the sensitivity of voter behavior to the deviation of policy from the median voter. The parameter $1/2$ reflects the assumption that the voting function is unbiased. We assume that parties know the voting function.

We can calculate the political equilibrium numerically using the first-order conditions in (2) along with the voting function in equation (4). We have calibrated the equations by imposing symmetry on the preferences of the two parties. The major scaling parameters are determined as follows: the $\sigma$ coefficient in the voting function is set so that a party which moves half way from the median voter to its preferred position lowers the probability of election from 0.5 to 0.25. The other major coefficient is the relative weight of ideology and opportunism (the $\beta$), which we vary in the experiments that follow.\textsuperscript{12}

The calculations provide a mixture of comfort and surprise, but only the high points will be summarized here. Figure 1 shows a family of curves; each traces out the

\textsuperscript{12} The exact calculated equations are the following:

(i) $W_L(E[U_L(x)], P_L) = -\beta[p_L(x_L^-(-.2))^2+p_C(x_C^-(-.2))^2] + (1-\beta)p_L$

(ii) $W_C(E[U_C(x)], P_C) = -\beta[p_L(x_L^-2)+p_C(x_C^-2)] + (1-\beta)p_C$

(iii) $p_L = 1 - p_C = 1/2 - 25 [(x_L)^2 - (x_C)^2]$

Also note that $\alpha_m=0$, $\alpha_L=-.2$, $\alpha_C=.2$, $\eta=1$, and $\beta_L=\beta_C=\beta$. 

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probability of victory by Party L as a function of L's policies (on the horizontal axis) for five different policies of Party C. There are no surprises here: the highest curve represents the outcome with party C at C's most preferred policy \(x_C = .2\), while the lowest represents the outcome with Party C's policy targeted at the median voter.

Figure 2 shows the same family of curves for the expected utility of Party L when Party L is purely ideological. These results are quite complex, for the objective function of the purely ideological party is affected by both the election probabilities and the positions of both parties. There is no simple relationship between a party's utility and its opposition's policy. Party L attains its highest utility when its opposition adopts extreme policies \(x_C = .2\) because this both guarantees the election to Party L and also ensures an outcome favorable to L's ideology. By contrast, the least favorable policies for party L come when party C behaves as the "reasonable opposition" and adopts a moderately right-of-center position; such a tactic gives party C a good prospect of electoral success while raising the probability of victory that is repugnant to party L.

Figure 3 plots the optimal policy of Party L for different party C policies and for different degrees of opportunism. The top curve shows the optimal policy of a purely opportunistic Party L as a function of the policies of Party C (on the horizontal axis). This calculation confirms that purely opportunistic parties set policies that represent the median voter (i.e., \(x_L = \alpha_m = 0\)). The family of curves moves downward as ideology progressively displaces opportunism, with the bottom curve representing the reaction function of the purely ideological party. For ideological parties, the policy response to the opposition is
relatively small at first. However, as the opposition turns extreme and becomes a long-shot, Party L can afford to move sharply away from the center toward its preferred position. Note as well that the reaction of party policies changes sign in response to changes in its opposition's policy.

The final result is shown in Figure 4, which plots the reaction functions of two symmetrical, purely ideological parties. In this case, the Nash equilibrium occurs with \( x_L = -x_C = -.06 \), and it is stable for small changes in parameters.

We conclude with six general remarks about the model described here before applying it to PBC theory. The first point is that models incorporating ideology can lead to a stable equilibrium of divergent party policies. The extent of the divergence depends upon the relative strength of ideology and opportunism, upon the degree of voter sensitivity to issues, as well as on the extent to which parties' fundamental beliefs diverge. The political convergence found in the Hotelling-Downs model depends crucially upon parties being single-mindedly devoted to gaining office.

Second, it follows from the divergence thesis that ideological parties are not as responsive to voters' revealed preferences as are opportunistic parties. A uniform shift of \( \theta \) to the left or right in the distribution of voter preferences will be reflected in a shift of exactly \( \theta \) in the positions of opportunistic parties. By contrast, the reaction of ideological parties will be more limited, with the degree of reaction depends upon the strength of ideology, the shape of the voting function, and the bias in the voting function. For example, in the equilibrium shown in Figure 4, if the median voter moves half way to the
position of party L, the equilibrium positions of the parties move by only 80 percent of the preference shift.

A third point attenuates the force of the non-representational result of point two. As parties become more ideological, their policies increasingly diverge from the tastes of the median voter. The overall performance of an economy will often be determined by the average policy -- the average saving rate or investment rate. The average economic policy (that is, the weighted average of parties' policies) does not necessarily diverge from the median as parties become more ideological. In the symmetrical case shown in Figures 1 through 4, the average policy of ideological parties represents exactly the position of the median voter. Indeed, with symmetrical parties and preferences, the average economic outcome will be unaffected by the degree of ideological divergence. Moreover, because the probabilities of victory shift in favor of more centrist parties, shifts in underlying preferences will be reflected in average outcomes that shift by more than the average change in party platforms. In the example described at the end of the last paragraph, the expected value of the policy change moves by 97 percent of the shift in preferences even though each party moves substantially less.

Fourth, it is sometimes difficult to distinguish ideological from opportunistic behavior. At first blush, we might think that a purely ideological party would cling to its principles and never compromise its policies to win office. This would be wrong, for a party may increase its expected utility by moving away from its most preferred policy. This paradox holds because when Party L moves toward the center, this move lowers the probability that Party C will win and introduce C's repugnant policies. This observation is merely a formalization of the canonical
justification for political compromises -- that even a party's compromised policies are superior to those of its opposition.

Fifth, even though there is some resemblance of opportunistic and ideological parties, we can compare the reaction of parties to shifts in underlying parameters to distinguish the two theories. 13 (a) As parties become more ideological, they tend to move away from the center of the ideological spectrum. (b) As voters become less sensitive to (or more ignorant about) issues, ideological parties tend to move away from the center, while opportunistic parties stay at the center. Another way of putting this proposition is to say that as voters become more perfectly informed about party positions, the vote function becomes more peaked and parties tend to converge. (c) If the vote function is biased (i.e., if the intercept moves away from 1/2), this will induce changes in the behavior of ideological parties but not of opportunistic parties. (d) If voters' preferences become more dispersed (in the sense of a median-preserving spread), this will not affect opportunistic parties, but it will tend to lead to greater divergence of ideological parties.

This final point marks the transition from the microfoundations to the political cycles examined in the next section. Critics of PBC theory sometimes argue that ideological parties would not engage in the manipulative policies described by the theory of opportunistic cycles. As the discussion in this section shows, this assertion is incorrect. To the extent that purely ideological parties desire to implement their policies, they may choose to exploit voter ignorance or myopia to increase their reelection chances. Put differently, if voter behavior

13 This paragraph draws upon a number of observations from Wittman [1983].
allows opportunistic cycles, that same behavior will allow parties to pursue ideological objectives because attainment of ideological objectives requires election as a precondition for implementing a party's program. This final point suggests, and the next section explores further, the fact that purely ideological parties will undertake behavior that looks quite opportunistic.

IV. FORMAL MODELS OF POLITICAL CYCLES

We now turn to a formal analysis of political business cycles. In this analysis, we illustrate voter decisions and party choices with the tradeoff between inflation and unemployment. We pause to underline, however, that this analysis applies more broadly to all decisions that involve intertemporal tradeoffs.

Innumerable government decisions involve tradeoffs over time. Aside from the classic example of whether to raise unemployment now in order to enjoy lower inflation in the future, similar macroeconomic decisions involve the choice between public consumption and investment; between raising taxes today or borrowing and raising taxes tomorrow; and between enjoying overvalued exchange rates today at the expense of taking the medicine of a harsh austerity package tomorrow. When Latin American governments decided to borrow abroad in the 1970s, they were choosing a policy that raised wages at the expense of lowered future wages.

In microeconomics, we see similar examples in the savings-and-loan coverup, in the postponement of treatment of toxic or nuclear wastes, and in decisions about environmental policy, such as the delays in control of sulfur emissions. The common theme running through all these decisions is the choice between policies that raise consumption today vs.
those that raise consumption tomorrow. Whenever the electorate has an imperfect understanding of the nature of the tradeoff, parties will be tempted to shift consumption from the future to the present as a way of increasing electoral support.

For the most part, this study limits its analysis to the tradeoffs that involve the business cycle. We emphasize this issue first because the inflation-unemployment tradeoff is well-established and relatively stable in the United States and, second, because cyclical movements have powerful effects upon political outcomes. As former British Prime Minister Harold Wilson stated, "All political history shows that the standing of the Government and its ability to hold the confidence of the electorate at a General Election depend upon the success of its economic policy."14

In this analysis, we assume that two parties compete for political power and that voters evaluate parties on the basis of actual or expected economic performance. We begin with the opportunistic cycle and then introduce other approaches.

1. Opportunistic Cycles

In our analysis, we analyze electoral cycles of two periods, with \( t = 1, 3, 5, \ldots \) being the first half of the electoral cycle and \( t = 2, 4, 6, \ldots \) being the second half of the cycle. The economy is assumed to behave according to the natural-rate hypothesis. Unemployment and inflation are inversely related in the short run but are independent in the long run; i.e. there is a downward-sloping Phillips curve in the short run but a vertical Phillips curve at the

\[14\] Quoted in Hibbs and Fassbender [1981], p. 31.
natural rate of unemployment in the long run. The economic dynamics are assumed to be stationary and given by:

\[(5) \quad \pi(t) = \pi(t-1) - a [u(t) - u^*] + e(t)\]

where \(\pi(t)\) is the rate of inflation, \(u(t)\) is the unemployment rate, \(u^*\) is the natural rate of unemployment, and \(a\) is the stable Phillips-curve coefficient.

The error term in (5), \(e(t)\), represents unpredictable events that affect inflation. For simplicity, we consider only "supply shocks," that is, shocks that raise the rate of inflation for given levels of aggregate demand. These shocks include events such as the oil-price increases of 1973 and 1979, the exchange rate fluctuations of the 1980s, and the frequent bad harvests. Economic policy is assumed to determine the unemployment rate without error.

Voters are assumed to have a distribution of preferences between inflation and unemployment. The aggregate voting function, which gives the probability of election by the incumbent party \(I\), is given by:

\[(6) \quad p_I(t) = V_t[u(t-1), u(t), \pi(t-1), \pi(t)] =
- (u(t))^2 + b \pi(t)^2 + (1+\mu)^{-1} [u(t-1)^2 + b \pi(t-1)^2] + \Omega .\]

The voting function applies only to even-numbered periods, \(t = 0, 2, 4, \ldots\), which are election years. \(V_t[\ ]\) is the aggregate voting function relating the fraction of the vote gained by the incumbent in period \(t\) to economic conditions. \(b\) is the inflation-aversion of the voting function, \(\mu\) is an memory factor which represents the extent to which voters forget past events, and \(\Omega\) is a parameter of the voting function. We take the quadratic form for simplicity of the
later calculations.¹⁵ In these equations, \( u \) and \( \pi \) represent deviations from the optimal unemployment and inflation rates. Finally, note that this voting function is backward-looking, excluding both the distant past and expectations about the future.

An opportunistic party will maximize its expected vote total or probability of being elected. We present here the solution without the random elements and assuming that the discount factor is zero (\( \mu = 0 \)). A straightforward maximization leads to the following equations (for even-numbered values of \( t \)):

\[
\begin{align*}
(7) \quad u(t) &= ba \pi(t) \\
(8) \quad u(t-1) &= ba [\pi(t) + \pi(t-1)]
\end{align*}
\]

Together with equation (5), equations (7) and (8) describe the dynamics of the opportunistic PBC. Figure 5 shows a simulation of the inflation rates for an opportunistic cycle for both low and high initial inflation rates (with initial inflation rates of 0 and 16 percent per annum) and with high and low inflation aversions.¹⁶ The properties of the cycle are clear: Opportunistic parties

¹⁵ The derivation of an aggregate voting function from individual preferences is subject to well-known deep difficulties. An attempt to make this linkage explicitly for macroeconomic variables is discussed in Lepper [1974]. Lepper derives an aggregate voting function under the assumption that there are well-defined individual preferences about macroeconomic outcomes and that voters are satisficers who choose incumbents if their performance is above some threshold level. She shows that, in this model, normal preferences on the part of voters may aggregate into jagged iso-vote contours that do not contain concave indifference regions.

¹⁶ For this example, parameter values are \( a = .8 \), \( u^* = 6 \), and the optimal unemployment rate = 4. The value of inflation aversion is \( b = .1 \) for the high-inflation trajectory and \( b = .4 \) for the low-inflation trajectory.
tend toward an equilibrium (i.e., long-run average) inflation and unemployment rates, but the system tends to oscillate within the election cycle. The intra-cycle oscillation shows high unemployment and declining inflation in the first half of the electoral period and low unemployment along with rising inflation in the second half.

We can also analyze the model with random supply shocks. We assume that the shocks occur each period after the policies for that period have been determined. Hence, parties set policies for period t and then the shock for period t occurs. The shocks will therefore affect policies only for the second half of the electoral cycle. The algebra of shocks is straightforward and is omitted here.

Figure 6 illustrates the impact of shocks in the opportunistic model. ¹⁷ For this example we have taken an identical sample of shocks and shown how it affects each of the four paths for the inflation rate. The cyclical pattern of policy shocks is somewhat masked by the shocks while the differences between degrees of inflation aversion continues to show up strongly.

2. Ideological Cycles

While opportunistic cycles have been extensively analyzed in the economic literature, until recently there has been little modeling of the ideological approach. ¹⁸ This

¹⁷ For this simulation, e(t) is an independent uniform random variable with mean of 0 and a range of [-2.5,+2.5].

¹⁸ Most economic analyses of the ideological or "partisan" approach overlook the two-way interaction between economic policies and political choices. Theoretical studies include Alesina [1987], who analyzes a two-party system as a repeated game. This model assumes that election outcomes are
section provides one approach to the modeling of dynamic political choice when parties differ in their preferences.

We here retain the earlier economic model in which the government trades off current satisfaction (low unemployment) for current and future pain (high inflation). In the spirit of the earlier analysis, we here analyze the behavior of parties that show a mixture of ideological and opportunistic behavior. The general specification of section III is analytically intractable, but before simplification it is important to consider the possibility of cyclical manipulation by purely ideological parties. Consider political competition of the kind analyzed in section III, in which two parties are purely ideological and have attained a stable Nash equilibrium. Further assume that the parties have a zero discount rate whereas voters are backward-looking and ignore economic conditions beyond the election.

A surprising result is that even purely ideological parties will induce business cycles within the electoral period. Such cycles will improve the party's chances for reelection even though they would otherwise be undesirable to the party. More generally, as long as the electoral system tends to overdiscount the future, even purely ideological parties, aiming to enhance their chances of gaining office,

---

exogenous, which robs the model of any potential for explaining shifts in regimes, the interaction of politics and economics, or the evolution of party ideology. Also see Alesina and Rosenthal [1989]. There are a number of empirical studies of ideological cycles (see for example Chappell and Keech [1988]), but most also take the probabilities of election of different parties as exogenous.
will want to compromise their most preferred position by moving consumption to the period before the election.\textsuperscript{19}

We turn next to a simple formal model of ideological parties. As in section III, we represent the preference function of the kth party as:

\begin{equation}
W_k(E[U_k(x)], p_k) = \beta [p_k U_k(x_k) + (1-p_k) U_k(x_j)] + (1-\beta)p_k,
\end{equation}

where the variables were defined in section III except that party j is the other party. No simple closed form function can be used to represent party behavior, so we parameterize the problem by assuming that equation (9) reduces to the following simple quadratic function:

\begin{equation}
W_k = -u(t)^2 + b_k \pi(t)^2 + (1+\mu)^{-1} [u(t-1)^2 + b_k \pi(t-1)^2].
\end{equation}

\textsuperscript{19} A formal proof can be seen in the following simple example. Assume a finite horizon of \( T \) periods in which there is a fixed stock of \( T \) consumption goods. Time is continuous, and elections occur at points 0, 1, 2, ...\ The ideological party is assumed to have a zero discount rate (\( \phi = 0 \)), and voters and the party have the same preference function, \( u(c(t)) \), over consumption, \( c(t) \). Consider the policy of a purely ideological party that sets \( c(t) = 1 \). The voting function in this case is given by \( V_T = f[q_T] \), where

\[ q_T = \int_0^1 u(c(T-\tau))e^{-\mu \tau} \, d\tau. \]

Starting at the constant consumption trajectory, by reallocating a small amount of consumption (\( \delta c \)) from after this election to just before the next election (i.e., from time \( T-1+\epsilon \) to time \( T-\epsilon \)), the probability of election goes up by \( f'(q)u'(1)[1-\exp(-\mu)]\delta c > 0 \), while the party's ideological utility changes by

\[ u'(1)[1-1] \delta c = 0. \]

Note that this reallocation does not affect future consumption and therefore leaves future elections unaffected. This example shows that differential discounting produces a political cycle even for purely ideological parties.

25
Each party is assumed to maximize (10) subject to the economic constraint in equation (5). Equation (10) implicitly assumes that the two parties have identical inflation and unemployment targets, but that they differ in their inflation aversion. The inflation aversion of conservatives is higher than the inflation aversion of liberals (i.e., $b_L < b_m < b_C$).

The parameter about which parties differ, $b_k$, can be interpreted as a compromise between the party's genuine inflation aversion and its desire to win. When the party is purely opportunistic, its $b_k$ will equal that of the median voter; a purist or superideological party (one concerned only with its platform and not at all with economic outcomes) will set its $b_k$ equal to its preferred level. An ideological party desiring to maximize its preference in (10) will be somewhere in between. In the solution that follows, we will also assume that parties plan for only the current electoral period.

When parties are driven by this kind of mixture of ideology and opportunism, we can easily find the solution path. Omitting the random shocks, we obtain:

\[
\begin{align*}
\text{(11)} & \quad u_k(t) = b_k a \pi_k(t) \\
\text{(12)} & \quad u_k(t-1) = b_k a \left[\pi_k(t) + \pi_k(t-1)\right]
\end{align*}
\]

along with equation (5). Note that these equations contain variables $u_k(\cdot)$ and $\pi_k(\cdot)$ to remind us that economic policy depends upon the preferences of the parties.

Three points should be noted about the behavior of ideological parties. The first is that parties now matter for economic policy. In the pure opportunistic model, the
identity of the party was irrelevant for economic policy; in the ideological model, parties affect economic outcomes as they pursue their own objectives. In the example used here, the conservative party drives the economy toward a long-run equilibrium with low inflation while the liberals steer toward a high-inflation equilibrium. Figures 5 and 6 can be examined to see how each of the two parties would move toward its long-run equilibrium if it retained power for a long time.

Second, depending upon the voting function and expectations, ideological parties may induce considerable instability in the sense of frequent changes of the policies of the party in power. As the incumbent party succeeds in attaining its ideological objectives, the economic outcomes increasingly depart from the preference of a majority of the voters. If the voters compare performance with an average of recent economic experience, the pure policies of ideological parties will compare unfavorably. The voters will therefore desire to change parties and thereby effect a return toward the middle of the preference distribution. Perhaps the long cycles of politics described by R. W. Emerson and A. M. Schlesinger can be explained as a reaction to the cumulative effect of ideological parties' policies shifting the policies of society too far away from the center.20

Figure 7 shows the induced cyclical behavior of a two-party system with inflation shocks, alternating between periods of liberal and conservative policies. In this example, liberals tend to win more often because their policies are closer to the median voter than are those of the conservatives. Some of the inherent regularities of Figure

7 are masked by the shocks. In addition, this graph shows how the alternating policies of the two regimes better satisfy the preferences of the median voter than would the pure policies of either party alone, a point suggested at the end of section III.

A third and somewhat surprising point is a corollary of the second point: because of the discontinuity of economic policy caused by changes in the party in power in the ideological model, the behavior of the economy can display "chaotic" behavior. More precisely, the economy tends to be extremely sensitive to small changes in parameters and initial conditions.

Figure 8 shows the result of four simulations in which the economic structure and the initial conditions are the same but in which party preferences are slightly modified. These small changes induce different electoral outcomes and lead to different histories. In Figure 8, liberal parties A through C tend to compromise slightly less than liberal party D; this leads to the re-election of liberal party D in period 3 as it pursues slightly more conservative policies than would A, B, or C. The difference in preference triggers a discontinuously more liberal policy for party D as compared to the conservative replacements for A, B, and C, and this difference has not disappeared even after a dozen election periods. Similar instabilities can surface for small changes in initial conditions. The reason for the instability is the discontinuous nature of political choice: because winners take all, small changes in the structure or in the shocks can produce significant differences in economic outcomes.

21 More precisely, in these simulations, the propensity to compromise factor is equal to .47, .48, .49, and .50 in runs A, B, C, and D.
3. Ultrarational Voters and Parties

A major criticism of PBC models is grounded in the assumption that ultrarational voters can see through the manipulative actions of parties. This assumption differs from both of the two earlier models in holding that voting is forward-looking rather than retrospective; moreover, ultrarational voters are assumed both to understand the structure of the economy and to forecast rationally the behavior of parties.

We can model ultrarational voters as follows: Voters are assumed to assess the "platform" of different parties according to a forward-looking vote function of the form

\begin{equation}
V_t[u(t+1), u(t+2), \ldots; \pi(t+1), \pi(t+2), \ldots] = \\
- E_t[u(t+1)^2 + R u(t+2)^2 + R^2 u(t+3)^2 + \ldots \\
+ b\pi(t+1)^2 + Rb \pi(t+2)^2 + R^2 b\pi(t+3)^2 + \ldots],
\end{equation}

where \(E_t[.]\) is the expectation at time \(t\), \(R = (1+r)^{-1}\) = a discount factor, and \(r\) the relevant discount rate. Some algebra shows that the optimal solution to (13) is given by the following pair of equations:

\begin{align}
(14) & \quad u(t) = ab \pi(t) + R u(t+1) \\
(15) & \quad \pi(t) = \pi(t-1) - a [u(t) - u^*]
\end{align}
The distinction between the optimal solution and the earlier equations is that the policy equation is forward-looking and follows a saddle-point trajectory with a steady state solution given by $u = u^*$ and $\pi = u^*(1-R)/ab$.

How will parties behave in the face of ultrarational voters? The simplest case is where voters compare their ultrarational forecast of party behavior with the optimal outcome and vote for the party whose policy is closest to the optimum. With pure opportunism or sufficient party competition, parties will then choose the optimal policy given in (14) and (15). It is easily verified that this policy does not introduce any cyclical behavior of the kind displayed in opportunistic cycles.

The solution with ideological parties is more complicated because voters cannot impose their preferences upon parties. The analysis in section III suggests that there may be stable and divergent party policies. If the parties' and the voters' discount rates are the same, there will be no intra-period cycle. Put differently, a party will be rewarded only for approaching the median voter's preferences and not for the presence or absence of any election-year cycles.
Our tests in the next section will rely upon two properties of models with ultrarational voters. The first concerns voters' assessment of shocks. Assume for simplicity that parties are identical either because of convergence or because of opportunism; additionally, augment the ultrarational model with economic shocks as in equation (5). In this case, the optimal policies will be:

\[(16) \quad u(t) = ab \mathbb{E}_t(\pi(t)) + R \mathbb{E}_t(u(t+1))\]
\[(17) \quad \pi(t) = \pi(t-1) - a [u(t) - u^*] + e(t)\]

where \(\mathbb{E}_t(\cdot)\) was defined above. The response of parties will not differ in the presence of external shocks. Because of ultrarationality, voters will see through the veil of the economic shocks and will not penalize parties. Thus ultrarationality implies that there will be no effect of exogenous economic shocks on party popularity when parties are identical.
A second result applies to a classical economy in which policy makers cannot affect unemployment or real output. In such a world, ultrarational voters would not penalize parties during periods of high unemployment or give parties high ratings during periods of low unemployment.

As a final comparison, Figure 9 shows how the three different models react to an inflationary shock. The ultrarational model with opportunistic parties drives inflation down in a smooth way to the low long-run equilibrium. The other two simulations show higher levels of inflation because of retrospective voting, with the ideological case showing both intra-electoral-period and across-electoral period cycles.

V. EVIDENCE ON POLITICAL BUSINESS CYCLES

While a vast literature on PBC models has sprung up over the last two decades, little agreement exists about which models are most applicable. Given the jumble of approaches, the purpose of this section is to see whether the disputes can be narrowed by an examination of the evidence from history and data analysis. This section reviews in detail two particular issues that are central to evaluating the importance of PBC models: whether voters behave in accordance with the postulate of ultrarationality and whether parties behave opportunistically or ideologically.

A. Are voters ultrarational?

\[22\] All three simulations in Figure 9 have the same economic structure, with \( a = .8 \). The inflation aversion is \( b = .2 \) for both opportunistic solutions while \( b = .1 \) for the liberal party and .4 for the conservative party. The discount rate is .06 percent per period for the ultrarational solution.
Recall that voters are said to be ultrarational if they have rational expectations, possess all available information, and evaluate parties by comparing their expected future performance. McCallum [1978] relied upon the hypothesis of ultrarationality along with a classical model of the economy to present the rational-expectations critique of PBC models, which argue that "governments cannot...manufacture booms during the latter portion of their elected terms."23 This line of argument dampened enthusiasm for research on political business cycles for almost a decade.

There are a number of possible approaches to assessing the rational-expectations critique of PBC models. One especially powerful test is whether voters satisfy the postulate of ultrarationality. As it turns out, voting data provide a good laboratory for examining ultrarationality, for which four different tests are examined here.

Before proceeding to the tests, we describe the data set that is used for many of the tests that follow. To analyze Presidential popularity, we examine data from Gallup polls on Presidential performance. The data cover polls of approximately 1000 persons.24 They ask the respondents (i)

23 McCallum [1978], p. 504, emphasis in original.

24 It is important to distinguish between voting functions, which measure actual electoral results, and popularity functions, which are generated by interviews. While the former are ultimately crucial in political choices, popularity functions have a number of significant advantages for studies of politico-economic behavior. Most important is that they are available on a monthly basis, whereas electoral results are available only every two or four years. Moreover, popularity data contain an important statistical advantage; by controlling on the identity of the government leader, which is clearly an important factor in voter
of the President's performance generally ("general approval"); in addition, but less frequently, they ask (ii) whether the respondent approves of the President's management of the economy ("economic approval"). Figure 10 shows the data used for this study. Because of the bound on the arithmetic popularity, the data was transformed to obtain an approval ratio, which measures the ratio of approval to disapproval, excluding those with no opinion. The solid connected line show the approval ratio for general management, while the lower dashed line is the ratio for management of the economy. In addition, we have shown in Figure 11 the general approval ratio and the unemployment rate.

Before proceeding with formal tests, we pause for one preliminary comment and one comparison with other studies. One of the striking features of both popularity data and election returns is the importance of economic affairs for political success. Figure 11 depicts the strong impact of the business cycle on Presidential popularity; over the period 1981-87, the correlation between general and economic Presidential popularity is .94. Another piece of evidence of the salience of economic affairs is that economic variables plus incumbency have a correlation of .85 with the outcome of Presidential elections over the period 1920-88. Given the breadth of influence by government on everyday life and the variety of priorities mentioned in polls, it is puzzling that economic events loom so large in political affairs.

attitudes, they allowing a more precise determination of the impact of economic effects upon attitudes. The major shortcomings of popularity data are high volatility of the estimates and some systematic biases. Most studies indicate, however, that modern polls are relatively accurate predictors of voter behavior (see for example Chappell and Keech [1988]).
In addition, it is useful to compare the results of estimates of the popularity function for the 1980s with tests for other periods. Table 2 shows results of this period and earlier estimates of Frey and others. While the data and methods of the different studies are not identical, they do show a strong tendency for government popularity to decline with increases in either higher inflation or unemployment. However, popularity functions for the United States during the 1980s impute a much higher relative cost to unemployment than for earlier periods or for other countries. In addition, the strong relative aversion to inflation in Germany is apparent in the popularity data.

1. We next move to the four tests of the hypothesis of ultrarationality. The first test directly confronts the rational-expectations critique of PBC models by testing the joint hypothesis of ultrarational voters and a new classical structure of the economy. In the last section, we showed that rational opportunistic parties in a new classical economy could not and would not manipulate real economic activity over the electoral cycle. Any changes in unemployment and output would be exogenous. Since parties can do nothing to affect unemployment or output in a new classical world, party popularity and election results should be unaffected by cycles in the "real economy," that is, by changes in unemployment or output. Since policy can still affect inflation, inflation must be excluded from the test.

The results of the first test are shown in Table 3. These tests decisively reject the hypothesis of no impact of

25 Earlier studies (see for example Fair [1978]) have found rate of change of real income or unemployment to have greater explanatory power than levels. Although no exhaustive analysis was undertaken for this study, popularity appears to respond largely to the level of unemployment rather than to the change.
the real economy upon Presidential approval. For each of the four regressions, the probability that the data were generated by chance under the null hypothesis lies below the lower limit (.001) of my F-test table. This completely independent test of the rational-expectations approach leaves little statistical doubt of the irrelevancy of that theory in the minds of the voters.

2. **Honeymoon effects.** Folk wisdom in political analysis holds that newly elected candidates enjoy a "honeymoon" after they enter office, with high levels of popularity that tend to erode after a few months of reality deflate the unrealistically high expectations. A repeated tendency of voters to overvalue the policies of new incumbents is a clear violation of ultrarationality. After a couple of political marriages have gone sour, voters should remember their past disillusionment and discount the temporary post-election euphoria. Surely their own past sentiments are in the information set of ultrarational voters, so the existence of honeymoon effects is a strong test of ultrarationality.

For a formal test, we examined the popularity data for the eight post-war Presidents. The hypothesis was that popularity moved according to the following process:

\[ P_t = P^*_t + H_t \]

where \( P^*_t \) is "fundamental" Presidential popularity in month \( t \) (where \( t \) is months after the inauguration), and \( H_t \) is the amount of the honeymoon effect that has survived \( t \) periods. We assume that \( P^*_t \) is a martingale, while the honeymoon effect moves according to the process:

\[ H_t = H_0 \exp[-\delta t + \epsilon_t] , \]
where $H_0$ is the initial honeymoon effect, $\delta$ is the decay rate of the honeymoon effect (per month), and $\epsilon_t$ is an error term incorporating miscellaneous factors.

To estimate (18) and (19), take the shortcut of calculating $H_t$ by subtracting the "fundamental popularity" from (18), where fundamental popularity is calculated as the average popularity for the entire term of office after the first year of the Presidency. Taking logarithms of (19) produces the final equation:

\[(20) \quad \ln h_t = \ln h_0 - \delta t + \epsilon_t\]

where $h_t$ is the logarithm of $H_t$.

Figure 12 shows a plot of Presidential popularity before being transformed to obtain the estimated equation. Table 4 displays the estimated coefficients of equation (20). Each equation is highly significant and each of the sixteen coefficients has the predicted sign and is significant at the one-tail, 5-percent confidence level. The results indicate the presence of powerful honeymoon effects, with popularity initially boosted by a factor of about eight (which is the antilog of the $h_0$ coefficient of 2). Except for the Ford collapse after the Nixon pardon, the decay rates tend to cluster around 20 percent per month. Under this specification, the honeymoon effect disappears after about 10 months (i.e., $2 - .2T = \text{zero for } T = 10 \text{ months}$).

The initial honeymoon effect is larger for Vice-Presidents who succeeded Presidents after death or political dismemberment, and these high initial effects decay at higher-than-average rates. The initial honeymoon effects appear to decline over time, but the decay rates show no trend. In addition, the decay rates are close to those which
are estimated as the rates of amnesia for economic events (see test 4 below).

Formally, we conclude that the honeymoon effect is a decisive violation of ultrarationality, for it implies that trends in voter approval in the early part of the electoral period are predictable. In less formal terms, we might paraphrase Shaw in observing that post-election euphoria, like marriage, is the triumph of hope over experience. It is difficult to imagine an unbiased and efficient method of processing political information and choosing among candidates that would induce such consistently large and predictable swings in voter attitudes.

3. A third and weaker test of ultrarationality applies to any stable politico-economic structure and examines whether popularity is a random walk. Under any stable structure, the evaluation of parties by ultrarational voters should not be forecastable. Tests of this hypothesis are shown in Table 5. When prior information about economic conditions is included (information that is prior to the last poll taken before the current one and therefore should rationally be incorporated into the lagged dependent variable), a statistically significant degree of serial dependence is detected. The statistical significance may be overstated, however, because sampling error in measuring the approval ratio may induce serial dependence where none exists.

26 What about remarriages? Three of the four Presidents who won a second term enjoyed a "second honeymoon" -- Reagan being the exception -- although the size of the boost to popularity at the beginning of the second term was markedly smaller than that at the first.
4. A final test concerns the "memory" of voters in their evaluation of parties. This line of reasoning begins with the observation that, in addition to predictable short honeymoons and frequent divorces, voters appear to have extremely short memories of the past infidelities of politicians; that is, the lag distribution of popularity on economic variables turns out to be extremely short. In Fair's work for example (see Fair [1978]), voters tend to respond to GNP growth over the last two quarters. Estimates of the "amnesia" factor in Kirshgaessner find the decay rate is on the order of 20 to 25 percent per month.27

Before concluding that voters are highly irrational in their memories of past events, however, we must consider the possibility that voters are forward-looking rather than backward-looking.28 Voters might say: "Why fret about yesterday's recession? What we really care about is the future, and our approval represents a reasonable bet on the future rather than beating the dead horses of the past." If voter evaluations are forward-looking forecasts, then the weights on past events may simply reflect the optimal weights to be used for future forecasts. As an example, say that

27 Kirshgaessner [1985], p. 254.

28 More precisely, let the popularity function take the form \( A(L)P(t) = B + C(L)x(t) \), where \( P(t) \) is the popularity ratio, \( x(t) \) is the set of outcomes or economic indicators, \( A, B, \) and \( C \) are vectors of coefficients, and \( L \) represents a lead and lag operator. Solving this equation for \( P \), we get

\[
P(t) = A(L)^{-1} [B + C(L)x(t)].
\]

For future values of economic variables, assume that the optimal forecast of \( x(t) \) is \( x(t) = D(L)x(t) \). The observed popularity function will then be

\[
P(t) = A(L)^{-1} [B + C(L)(D(L)x(t))].
\]

Note that the lag structure on \( x(t) \) is a complicated function of both the popularity function parameters and the optimal forecast of \( x(t) \); no simple conclusion about the rationality or myopia of voters' behavior is possible without further information about the expectations concerning \( x(t) \).
voters care only about inflation and assume that inflation is a random walk. In this case, voters would rationally include only current inflation in their evaluation function.

Figure 13 shows the results of some tests about voters' evaluations. This figure contains three sets of weights on past unemployment rates. (a) At the top are the "social welfare weights"; these might be the weights that a planner would use in maximizing social welfare over time, equal to the real discount rate on goods and services. Because the figure measures time looking backward, the weights increase with the time lag to reflect a positive real interest rate. (b) The middle pair of lines are the estimated weights on unemployment from the popularity function. Estimate #1 is from a Koyck distributed lag of popularity on the unemployment rate; estimate #2 uses a maximum-likelihood estimator of the geometric decay rate in a non-linear equation relating popularity to the unemployment rate.29 (c) The bottom curve shows the optimal forecast from an autoregressive equation of the unemployment rate.30

The results shown in Figure 13 are quite instructive. On the one hand, the actual reaction of popularity to economic events is far different from the optimal forward-looking forecast. On the other hand, the reaction has far too much amnesia to represent a sensible retrospective

29 More precisely, let popularity be \( P(t) = \alpha[u(t) + ku(t-1) + k^2u(t-2) + k^3u(t-3) + \ldots] + \text{other factors} \). We can estimate the decay factor \( k \) either by maximum likelihood or by using the Koyck transformation and estimating \( P(t) = \alpha u(t) + kP(t-1) + \text{other factors} \).

30 The optimal forecast is estimated over the period 1950:1 to 1987:12 and is \( U = .092 + 1.091 U(-1) + .120 U(-2) - .103 U(-3) - .018 U(-4) - .045 U(-5) - .047 U(-6) - .032 U(-7) - .010 U(-8) + .010 U(-9) + .016 U(-10) \), where \( U \) is the total unemployment rate and \( U(-k) \) represents the \( k \)th lag of \( U \). The \( R^2 = .986 \) and the SEE = .203.
evaluation of past events. The two possible interpretations, between which these data cannot distinguish, are either that popularity is a mixture of forward-looking and retrospective evaluations, or that voters' memories of past events decay much more rapidly than normal economic discounting would prescribe. Whatever the interpretation, the results are inconsistent with the hypothesis of ultrarationality.

There are many other possible tests of ultrarationality in voter behavior, but the general conclusion from this and other studies is that the assumption of ultrarationality cannot withstand a confrontation with behavioral evidence. A little reflection, however, suggests that the ultrarational model of the voter is highly implausible at the outset. Our hypothetical forward-looking, ultrarational voter would systematically collect data on the voting records, platforms, policy pronouncements, and speeches of all the candidates, to which would be added the volumes of expert opinions, econometric forecasts, scholarly monographs, and public-interest group ratings. Using this information to project the outcomes over the indefinite future, the voter would then vote for the party or office seeker which had the highest utility score.

In reality, such a decision process has severe shortcomings. It is costly to gather and process all the relevant information; the information may be difficult for many inexpert or illiterate voters to understand; and the platforms may be so vague, misleading, and internally inconsistent as to yield little information about future policies and economic conditions.\textsuperscript{31} If we add to this welter

\textsuperscript{31} One of the functions of political parties is to provide continuity and establish reputations, thereby allowing voters to make choices on the basis of past behavior and performance. New parties (or "outsiders") might be

41
of confusion the infinitesimal probability of an individual's vote changing a national election outcome, we can only conclude that homo economicus would gather no information and cast no vote.

But individuals do vote, and those with higher opportunity costs of their time have a higher probability of voting, so we need to replace the ultrarational perspective with a more realistic one. Voters might choose to economize on their time by gathering only readily available information, such as spot TV advertisements. Given the non-informative quality of many campaign promises, people might look at past performance and personal character as the most reliable indicator of future policies and behavior. In light of their rudimentary understanding of the intricacies of legal, political, and economic structures, voters might be generally unable to distinguish policy shocks from external shocks and simply hold the incumbent government responsible for whatever events transpired.\textsuperscript{32} In short, in a world where voting has little economic value to the individual and reliable forecasts about the future are costly to obtain, retrospective evaluation of the performance of incumbents on the bases of simple and easily understood indexes (such as

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\textsuperscript{32} In Paldam's survey of voting behavior and popularity functions [1981], he finds strong evidence for the "responsibility hypothesis," which states that voters hold the government responsible for economic and social outcomes.
unemployment, GNP growth, or inflation) might be a reasonable way for many voters to make political decisions.\footnote{A similar line of reasoning is presented in Kramer [1971].}

B. Ideological vs. Opportunistic Parties

A final controversy concerns the question of whether parties are principled or opportunistic. This section begins with a review of research results and then concludes that arguments about ideology have often been wide of the mark.

The evidence on opportunistic cycles comes from a wide variety of studies. Perhaps the most persuasive is that of Tufte [1978], who examined in great detail a wide variety of sources and concluded:\footnote{Tufte [1978], p. 137.}

\begin{quote}
[T]he timing of elections influences the rate of unemployment and growth in real disposable income, the short-term management of inflation and unemployment, the flow of transfer payments, the undertaking of expansionary or contractionary economic policies, and the time perspective of economic policy-making....[E]conomic life vibrates with the rhythms of politics.
\end{quote}

This conclusion was reinforced by the study of Frey and Schneider [1978], which showed that Presidential popularity responds significantly to macroeconomic conditions and that government fiscal policy responds to both reelection proximity and the government's ideology. Maloney and Smirlock [1981] find "evidence of an attempt to use policy
instruments to guide economic activity into a politically optimal cyclical pattern...."\textsuperscript{35}

For countries beside the U. S., Frey and Schneider [1978a] find for the United Kingdom that both opportunistc and ideological variables are significant determinants of government fiscal policy, although election proximity dominates the ideological variables when closely contested elections draw near. Keil [1988] examines British data and finds strong evidence for opportunistic cycles in the unemployment rate, in government expenditures, and in monetary policy. Ben-Porath [1975] demonstrates the existence of impressive cycles within electoral periods for the second through the seventh Knesset in Israel.

Beginning with the germinal work of Hibbs (see especially Hibbs [1977]), numerous studies have found evidence of ideological or "partisan" business cycles. His studies show a systematic tendency, particularly for European class-based parties, to pursue macroeconomic policies broadly consistent with the economic interests and preferences of their constituencies.

More recently, Alesina [1989] analyzed the relative importance of the electoral cycle and regime shifts in macroeconomic performance in 12 countries in the postwar period. He concluded that left-wing governments typically begin their regimes by lowering unemployment rather than raising it, which is consistent with the ideological rather than the opportunistic approach; this point was made earlier by Alesina and Sachs [1987]. It should be remarked, however, that the tests are often sensitive to the exact form of the

\textsuperscript{35} Maloney and Smirlock [1981], p. 389. Similar conclusions are found in Laney and Willett [1983] and in several chapters of Willett [1989].
hypothesis to be tested. By Alesina's test, the opportunistic PBC fails utterly for the United States (see his Table 6). On the other hand, the theory should apply with greatest force to Presidential re-elections -- which is the only opportunity that parties have to advance their own popularity by economic policy. During last three decades, there were but two observations (1969-1972 and 1981-1984) and they both exhibit the predicted bust-and-boom cycle.

In reflecting upon these studies and the debate over whether opportunistic or ideological models are "right," we should be suspicious of monicausal theories. For political cycles, we are likely to see a wide variety of party behavior -- ideological or opportunistic or both or neither -- depending upon the electoral regime and the personalities. Political power bestows room for substantial discretion by leaders; we should not be surprised to see diverse patterns of behavior. Unlike competitive firms, individual parties and leaders have ample room to be venal or farsighted, partisan or patriotic.

A second point, which has been made above, is that the ideological model is sometimes misspecified. We noted that purely ideological parties will find it advantageous to move toward the center so that they can survive long enough to implement their policies.

Another issue concerns potential conflicts within parties. If parties look beyond the next election, they may move toward what we have described as the "optimal" solution. Incumbents will then feel a tension between what is good for themselves and what is good for the party. By undertaking short-run maximizing strategies, an incumbent may improve his own re-election chances at the expense of future candidates of
his party. Indeed, Fiorina adds this as a possible interpretation of the 1972 Nixon campaign.\textsuperscript{36}

A party could find itself trading off its long-term positive image and its committed adherents for an ephemeral and uncertain vote gain.... Richard Nixon's 1972 presidential campaign is perhaps a case in point. [Perhaps] the PBC chickens eventually came home to roost... for Nixon's Republican Party in 1974.

This example suggests a different kind of political cycle depending upon the strength of loyalty of incumbents or candidates to their party.

A final difficulty with ideological models is the identification problem that arises in empirical studies: How do you tell the dancer from the dance? More precisely, the opportunistic model predicts changes in economic variables within the exogenous electoral period, whereas the ideological model predicts changes conditional on regime changes. But it is exactly in cases where parties are ideological -- i.e. where voters know with confidence what parties stand for -- that the regime change is likely to reflect a change in voter priorities and that the parties may be a handmaiden rather than a master of political change.

This observation may help explain the fact that Republican Presidents often begin with a recession while Democrats start by expanding the economy. To illustrate, consider the ideological model of section IV in which party L has low inflation aversion while party C has high inflation aversion, and further assume that there are random exogenous shocks to inflation or unemployment. A large contractionary shock will lead to the election of party L, which will lower

\textsuperscript{36} Fiorina [1981], p. 99.
unemployment; a large inflationary shock will lead to the election of party C, which will contract the economy. In fact, the same pattern of policy response would occur even if the parties had identical preferences and were non-ideological. The major difference introduced by ideology is that parties specialize in different policies. Just as you go to dentists to get your teeth drilled, you go to conservatives to root out inflation. The pattern will follow the predictions of the ideological model even though the causal mechanism is external shocks.

VI. DO POLITICAL CYCLES EXIST?

Having reviewed the major controversies, we conclude with the central question: Do political business cycles exist, or are they but a statistical illusion like the decolletages or head-and-shoulders that chartists see in the stock market? In this section we review the evidence on fiscal policy, monetary policy, and the behavior of economic aggregates.

A. Fiscal Policy

In testing PBC theories, the setting of fiscal-policy instruments is a natural place to look for telltale signs of political behavior. This analysis is particularly revealing because these variables are under direct political control and they directly affect voter well-being.

The historical record

The qualitative record for the United States has been
surveyed in a number of studies and memoirs. The only indelible mark of a political business cycle was left during the 1972 election. Herbert Stein, chairman of Nixon's CEA during the reelection campaign, wrote that economic policy during this period, and particularly the price-wage controls, were adopted because the administration felt it "could not enter the active period of the 1972 election with an economic policy that was not working and that did not utilize all measures that might make it work." Tufte presents a long catalogue of measures taken by the Nixon administration to enhance its election prospects.

By contrast, the historical record indicates that the 1960 and 1980 elections were marked by Presidential decisions to ignore the political business cycle and refrain from economic stimulation. Eisenhower was informed that a downturn just before the election was possible, but he was reluctant to act unless a major recession was threatening. Nixon later attributed his defeat in part to the weak economic performance in 1960 (and studies of Fair and others tend to corroborate his view). During 1980, faced with double-digit inflation and the widespread perception that inflation was the nation's premier economic problem, Carter chose a stance of fiscal and monetary restraint along with an incomes policy. Ironically, Carter's self-denial was doubly beneficial to Reagan: the 1980 Reagan victory was produced by

37 Particularly useful are Stein [1978] and [1984], Tufte [1978], and Okun [1970]. One missing element is a careful review of the 1984 reelection campaign.

38 Stein [1978], p. 156.

39 A not-so-subtle example came with the social-security benefit checks of October 1972. These arrived shortly before election day with a note announcing a 20 percent benefit increase that was "signed into law by President Richard Nixon." (Tufte [1978], p. 32)
the high misery index in 1980 while Carter's austerity program reduced inflation and set the stage for the rapid expansion that guaranteed the Reagan reelection in 1984.

Other elections pose greater ambiguities. In 1964 and 1984, incumbents enjoyed rapid, non-inflationary growth. In neither case, however, is there solid evidence that the economic policy was consciously designed to produce a politically advantageous growth path. On the other hand, the Johnson and Reagan administrations were surely aware of the political perils of recession and were delighted to ride the election-year boom.

**Statistical tests**

To go beyond the selective memory of memoirs, we present some formal evidence on the cyclical pattern of both taxes and transfers. According to the opportunistic PBC, taxes should be raised at the beginning of the electoral period, while benefits should be raised close to election day. Examining the movement of the social security tax rate, we find that, during the 1960s and 1970s, the tax rate does closely conform to this prediction. Figure 14 shows the increase in tax rate during the 1965-77 period; in this period, taxes were increased in the year after elections for four straight elections and were not increased in the year before elections for four straight elections; note as well that this behavior occurred primarily during the Nixon years.

A test of the role of systematic political factors in transfer payments for both the opportunistic and ideological models is provided in Table 6. For the estimates reported in this table, we have constructed a series on the growth of inflation-corrected Federal personal transfer payments. We then estimate the impact of an ideological variable (going
from 0 for conservative to 1 for liberal administrations) along with an electoral cycle variable (that takes the value of -1 after elections and 1 before elections).

The results indicate that both variables have the correct sign but explain only a small fraction of the movement in transfers. In addition, the results are sensitive to the sample period: if we exclude the Nixon years, the ideological variable changes little but the opportunistic variable drops markedly. Although the opportunistic variable is more significant than the ideological variable, both variables make but a modest contribution to explaining the growth of transfer payments.

B. Monetary Policy

Another interesting set of studies investigates the behavior of the Federal Reserve. Although nominally independent, the Federal Reserve can be induced to accede to Executive-branch policies directly by appointments and indirectly by political persuasion. A recent study of monetary policy by Kettl found that, notwithstanding its vaunted independence, the Fed has conformed to a considerable degree to Presidential policy: "Over most of the Fed's history, its monetary policy has coincided with what presidents have wanted." His account of the postwar history finds at least two elections (1956 and 1980) in which the Fed incurred the displeasure of incumbent presidents and one (1972) in which the Fed succumbed to political pressure for an easy monetary policy.40

Studies by Beck [1984] and Chappell and Keech [1988] find little evidence that the Federal Reserve helped reelect

40 See Kettl [1986], pp. 121-129.
the incumbents but substantial evidence of "bending with the political winds," that is, of adopting the economic goals of the incumbent President. A contrary finding is that of Grier [1987], who finds evidence of a four-year electoral cycle having an influence on monetary policy.

An alternative approach to investigating the role of monetary policy is to examine changes in the Federal Reserve discount rate over the electoral cycle. This index is illuminating because the discount rate is highly visible and a direct policy instrument. Changes in the discount rate often assume a symbolic role, as in December 1965 or October 1979, when the Federal Reserve changed the discount rate to signal a sharp change in policy.

To search for political influences, the electoral cycle from 1946 to 1988 was divided into five periods: the month after the election, the next 41 months, and three subperiods in the six months before the presidential election. Table 7 tabulates the changes in the discount rate during this period. This tabulation indicates that there does not appear to be an active election bias of the Fed in favor of either incumbents or a particular party. The number of discount rate increases and decreases before or after elections are roughly equal. We can reject the hypothesis of incumbent or party bias on the part of the Federal Reserve in changing the discount rate.

On the other hand, these data clearly demonstrate a "foxhole mentality": the Fed pretty clearly keeps its head down near election day. A review of the record finds the astounding fact that, since the Fed opened its doors in 1914, the discount rate has never been changed in the month before a Presidential election. The data clearly indicate a tendency to postpone discount rate changes -- both up and
down -- until after the election. A formal analysis-of-variance test calculates the probability that no changes in the discount rate occurred in the month before the Presidential election and that at least four occurred in the month after elections; this test assumes that the probability of a change is binomial and equal in every month. This test indicates that the threshold probability of the pattern of discount rate changes shown in Table 7 is only 7 percent.

Our review of studies of political behavior of the Federal Reserve suggests three findings: first, there is little evidence that the Federal Reserve tends to support the electoral prospects of incumbents; second, the Federal Reserve tends to move in the general direction of Presidential policy; and, third, the Fed tends to keep out of the cross fire when Presidential campaigns are being waged.

C. Behavior of Aggregates

Finally, we taste the pudding by examining the behavior of ultimate macroeconomic variables like output, inflation, and unemployment. A student of the literature must be struck by the fact that so many people can obtain such disparate results from essentially the same data. A fine example of how the same data can generate different answers depending upon the spectacles of the econometrician is provided by reexamining the results of McCallum, who tested for the presence of four-year, politically induced cycles in the American data. He concluded that the "results ... can only be regarded as unfavorable to the political business cycle."41

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41 McCallum [1978], p. 513.
An alternative way of viewing exactly the same data is to examine the actual and forecast unemployment rates for McCallum's tests. For this purpose, we have estimated McCallum's regression for his political variable EV5 (which was the best fitting political variable) over his sample period. We then use an ex-ante dynamic forecast, which includes information only on the political cycle and upon the initial-period unemployment rate. The results of this exercise are shown in Figure 15. Although McCallum finds no formal statistical evidence of political business cycles, a clear political cycle emerges from the data.

A simple modification of the McCallum test fits the unemployment rate to both opportunistic and ideological variables and allows for inflation shocks. This equation includes a variable for a President's ideology ("Liblab"), ranging from 0 for most conservative to 1 for most liberal.\textsuperscript{42} In addition, it includes an opportunistic variable ("Elcyc") that is 0 in the quarter of the election, rises to 1 in the middle of a Presidential term, and is quadratic. Finally, to incorporate the impact of inflation shocks, linear and quadratic terms in the rate of inflation of the GNP deflator ($\pi$) are added. The estimated equation, including an autoregressive error, is:

\[
[U_t - U^*_t] = \text{constant} + .44 \text{ Elcyc } - .30 \text{ Liblab} \\
[2.0] \quad [0.8] \\
+ .87 \text{ lagged } \pi + .10 \text{ lagged } \pi^2 + .88 \text{ rho}(1) \\
[2.7] \quad [3.8]
\]

\textsuperscript{42} The ideological variable is described in Table 6.
where \( R^2 = .94 \), \( \text{SEE} = .35 \), and the \( t \)-statistics are in brackets. The opportunistic variable is both larger and more significant than the ideological variable, and inflation is extremely important. Figure 16 shows the forecast and actual value for unemployment, for the equation without the autoregressive error, over the period 1954-1988. The predicted series tracks the actual rate reasonably well and captures all the major turning points. According to this equation, major forecast errors occur in 1982, when the Volcker-Reagan recession was deeper than the theory predicted, and in 1967-68, when a forecast cycle did not occur. But for the rest of the period, the model performs remarkably well.

A Self-Correcting Mechanism?

This paper has reviewed the theory and evidence concerning the linkage of macroeconomics and politics. We have uncovered a rich array of possible linkages, and a review of the evidence finds a wide variety of cycles in different times and places. Depending upon the country, the period of time, and the analyst, virtually every PBC species described in Table 1 appears to have been identified.

On reflection, it is not surprising to see a variety of species along with constant evolution in political business cycles. An obviously manipulative economic policy, for example, will produce political antibodies that ultimately control or kill it. In reaction to the manipulative 1972 Nixon reelection campaign, Congress took a number of steps to impede future attempts to manipulate the economy for partisan purposes. The 1974 Budget Act imposed a rigid timetable on fiscal policy, established the Congressional Budget Office to provide independent economic advice, and removed executive authority to rescind or impound appropriations. Similarly, in the wake of criticism of the Federal Reserve's
expansionary policies in 1972, Congress pulled the Federal Reserve closer to the legislative orbit by a Congressional Resolution requiring regular reporting and setting of monetary targets in 1975 and by establishing a framework for monetary policy in the Humphrey-Hawkins Act of 1977. Similarly, reforms of the Social Security system incorporated automatic cost-of-living escalation in 1972 so as to obviate the need for periodic benefit adjustment. Finally, Presidential authority to impose wage-and-price controls, which had allowed the Nixon administration to slow inflation without a recession in 1971, lapsed and Congress refused to renew it in 1977. By the end of the 1970s, then, it would prove difficult for an Administration to undertake the wholesale manipulation of economic policy that had occurred in the early 1970s.

The lesson to be drawn from this history is not that the political business cycle is dead -- any more than the business cycle itself is dead. The primordial political forces that originally gave birth to political cycles are as vigorous as ever. Hence, like any evolving creature, the political business cycle is likely to emerge in the future in unexpected shapes and with unanticipated dynamics.
REFERENCES


<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Model 1: Opportunistic Cycle</th>
<th>Model 2: Ideological Cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voters</td>
<td>Voters nonrational: backward-looking and weight recent events more heavily.</td>
<td>Voters nonrational: backward-looking and weight recent events more heavily.</td>
</tr>
<tr>
<td>Parties</td>
<td>Opportunistic: choose policies to maximize vote or probability of election.</td>
<td>Ideological: preferences of parties concern the actual economic outcome and not per se to prospects of election.</td>
</tr>
<tr>
<td>Economic Structure</td>
<td>Parties have control over instruments (say, fiscal or monetary policy) and policy is effective.</td>
<td>Parties have control over instruments (say, fiscal or monetary policy) and policy is effective.</td>
</tr>
<tr>
<td>Source of Shocks</td>
<td>Shocks internal to the economy from political decisions.</td>
<td>Source of shocks unclear.</td>
</tr>
<tr>
<td>Competence of parties</td>
<td>Parties competent.</td>
<td>Parties competent.</td>
</tr>
<tr>
<td>Predictions of model</td>
<td>A business cycle within the electoral cycle: austerity after elections and boom before elections.</td>
<td>Changes in economic policy associated with changes in regime: booms occur when left-wing governments take power and anti-inflation programs occur when right-wing governments take power.</td>
</tr>
<tr>
<td>Model 3</td>
<td>Model 4</td>
<td>Model 5</td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Ultrarational voters</strong></td>
<td><strong>External Shocks</strong></td>
<td><strong>Incompetent parties</strong></td>
</tr>
<tr>
<td>Voters ultra-rational: make optimal forecasts on the basis of full information.</td>
<td>Voters either ultrarational or nonrational.</td>
<td>Voters either ultrarational or nonrational.</td>
</tr>
<tr>
<td>Parties rational and either opportunistic or ideological.</td>
<td>Parties either ideological or opportunistic.</td>
<td>Parties differ in competence.</td>
</tr>
<tr>
<td>Parties have control over instruments (say, fiscal or monetary policy) and policy is effective.</td>
<td>Parties have control over instruments (say, fiscal or monetary policy) and policy is effective.</td>
<td>Parties have control over instruments (say, fiscal or monetary policy) and policy is effective.</td>
</tr>
<tr>
<td>Shocks internal or external to policy.</td>
<td>Shocks external to policy.</td>
<td>Shocks internal or external to policy.</td>
</tr>
<tr>
<td>No politically induced cycles. Popularity a random walk; with opportunistic parties, popularity and elections are invariant to state of economy.</td>
<td>With ultrarational voters and opportunistic parties, popularity and elections unaffected by genuinely external shocks.</td>
<td>Ultrarational voters evaluate parties on basis of competence; more competent parties survive longer. Voters may weight recent events more heavily if there is on-the-job learning.</td>
</tr>
</tbody>
</table>
Table 2. Alternative Estimates of Impact of Economic Conditions on Government Popularity

<table>
<thead>
<tr>
<th>Estimated Coefficient on:</th>
<th>Unemployment</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA (1953-75)</td>
<td>-4.2</td>
<td>-1.0</td>
</tr>
<tr>
<td>UK (1959-74)</td>
<td>-6.0</td>
<td>-0.7</td>
</tr>
<tr>
<td>West Germany (1951-75)</td>
<td>-0.9</td>
<td>-0.7</td>
</tr>
<tr>
<td>This study:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USA (1981-88)</td>
<td>-8.6</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Source: Early studies are surveyed in Frey [1978].

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Table 3
Tests of Relation
Between Voter Approval and the "Real" Economy
(February 1981 to December 1987)

Equation 1: Overall Approval

\[ \text{POPRATGE} = 3.72 - .271 \text{ Unemployment Rate} \]
\[ \text{R}^2 = .30 \quad F(1,77) = 33.3 \quad p=.000 \]

\[ \text{POPRATGE} = 22.9 - .48 \text{ Unemployment Rate} - 3.68 \log (\text{Industrial Production}) \]
\[ \text{R}^2 = .34 \quad F(2,154) = 19.3 \quad p=.000 \]

Equation 2: Approval of Economic Management

\[ \text{POPRATEC} = 2.86 - .225 \text{ Unemployment Rate} \]
\[ \text{R}^2 = .45 \quad F(1,29) = 22.6 \quad p=.000 \]

\[ \text{POPRATEC} = 22.1 - .43 \text{ Unemployment Rate} - 3.71 \log (\text{Industrial Production}) \]
\[ \text{R}^2 = .58 \quad F(2,154) = 18.5 \quad p=.000 \]

Note:
POPRATGE = Ratio of percent of respondents approving to those disapproving of general performance of President.
POPRATEC = Ratio of percent of respondents approving to those disapproving of economic policies of President.

Standard errors of coefficients are in parentheses.
### Table 4

**Honeymoon Effect in Presidential Popularity**  
(coefficients and t-statistics)

<table>
<thead>
<tr>
<th>President</th>
<th>Honeymoon coefficient (&lt;i&gt;h_0&lt;/i&gt;)</th>
<th>Decay Rate (&lt;i&gt;δ&lt;/i&gt;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truman</td>
<td>4.42 [13.4]</td>
<td>.43 [10.8]</td>
</tr>
<tr>
<td>Eisenhower</td>
<td>2.34 [8.6]</td>
<td>.25 [4.1]</td>
</tr>
<tr>
<td>Kennedy</td>
<td>2.34 [5.9]</td>
<td>.17 [2.3]</td>
</tr>
<tr>
<td>Johnson</td>
<td>2.74 [14.9]</td>
<td>.19 [5.5]</td>
</tr>
<tr>
<td>Nixon</td>
<td>2.11 [10.0]</td>
<td>.22 [6.7]</td>
</tr>
<tr>
<td>Ford</td>
<td>2.66 [5.5]</td>
<td>1.60 [6.1]</td>
</tr>
<tr>
<td>Carter</td>
<td>1.98 [11.9]</td>
<td>.20 [8.0]</td>
</tr>
<tr>
<td>Reagan</td>
<td>1.74 [3.4]</td>
<td>.39 [4.9]</td>
</tr>
</tbody>
</table>

**Note:** Estimated equation is:<br>|<br|.\quad h_t = h_0 - \delta t + \epsilon_t, where<br>|<br>.\quad h_t is the logarithm of the deviation of the popularity ratio from the end-of-term average, \delta is the decay rate (per month), and \epsilon_t is a random error term.
Table 5

Tests for Random Walk of Approval

Dependent Variable: Change in Approval

<table>
<thead>
<tr>
<th>Included Independent Variables</th>
<th>F-test of significance General</th>
<th>Economic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lagged dep. var.</td>
<td>$F(1,72) = 1.11$</td>
<td>$F(1,32) = 2.01$</td>
</tr>
<tr>
<td></td>
<td>$p = .16$</td>
<td>$p = .05$</td>
</tr>
<tr>
<td>Lagged dep. var. and prior information on:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>$F(2,138) = 3.37$</td>
<td>i.o.</td>
</tr>
<tr>
<td></td>
<td>$p = .01$</td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>$F(2,138) = 2.76$</td>
<td>i.o.</td>
</tr>
<tr>
<td></td>
<td>$p = .05$</td>
<td></td>
</tr>
<tr>
<td>Industrial Production</td>
<td>$F(2,138) = 4.22$</td>
<td>i.o.</td>
</tr>
<tr>
<td></td>
<td>$p = .03$</td>
<td></td>
</tr>
<tr>
<td>Unemployment and Industrial Production</td>
<td>$F(3,204) = 2.68$</td>
<td>i.o.</td>
</tr>
<tr>
<td></td>
<td>$p = .02$</td>
<td></td>
</tr>
<tr>
<td>Unemployment, Inflation, and Industrial Production</td>
<td>$F(4,268) = 2.68$</td>
<td>i.o.</td>
</tr>
<tr>
<td></td>
<td>$p = .015$</td>
<td></td>
</tr>
</tbody>
</table>

i.o. = insufficient observations
Table 6

Tests of Alternative Approaches to Party Structure on Growth in Federal Transfer Payments

<table>
<thead>
<tr>
<th>Sample period</th>
<th>Opportunistic Variable</th>
<th>Ideological Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951:I-81:1</td>
<td>0.0043</td>
<td>0.0095</td>
</tr>
<tr>
<td></td>
<td>[1.40]</td>
<td>[1.27]</td>
</tr>
<tr>
<td></td>
<td>p=.16</td>
<td>p=.20</td>
</tr>
<tr>
<td>1951:1-1968:IV</td>
<td>0.0027</td>
<td>0.0094</td>
</tr>
<tr>
<td>1974:III-1988:I</td>
<td>[0.89]</td>
<td>[1.34]</td>
</tr>
<tr>
<td></td>
<td>p=.37</td>
<td>p=.18</td>
</tr>
<tr>
<td>1969:I-1974:II</td>
<td>0.0161</td>
<td>not included</td>
</tr>
<tr>
<td></td>
<td>[1.45]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>p=.16</td>
<td></td>
</tr>
</tbody>
</table>

Note: In the electoral cycle (say from 1985 to 1988), the opportunistic variable takes the values of -1 for the first year, 0 for the next two years, and +1 for the fourth year. The ideological variable takes the value of Truman = 1, Eisenhower = .3, Kennedy = .8, Johnson = 1, Nixon = .5, Ford = .3, Carter = .5, and Reagan = 0.

The dependent variable is the rate of growth of Federal transfer payments divided by the CPI, corrected for the cycle to remove the impact of the business cycle on automatic transfers.
Table 7  
Monetary Policy and the Electoral Cycle

<table>
<thead>
<tr>
<th>Electoral Period</th>
<th>[0,+1]</th>
<th>[+1,-6]</th>
<th>[-6,-3]</th>
<th>[-3,-1]</th>
<th>[-1,0]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roosevelt IV-</td>
<td>none</td>
<td>1+</td>
<td>none</td>
<td>1+</td>
<td>none</td>
</tr>
<tr>
<td>Truman I</td>
<td>none</td>
<td>1+</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Eisenhower I</td>
<td>none</td>
<td>6+,2-</td>
<td>none</td>
<td>1+</td>
<td>none</td>
</tr>
<tr>
<td>Eisenhower II</td>
<td>none</td>
<td>6+,3-</td>
<td>1-</td>
<td>1-</td>
<td>none</td>
</tr>
<tr>
<td>Kennedy-Johnson I</td>
<td>none</td>
<td>1+</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Johnson II</td>
<td>1+</td>
<td>4+,1-</td>
<td>none</td>
<td>1-</td>
<td>none</td>
</tr>
<tr>
<td>Nixon I</td>
<td>none</td>
<td>3+,7-</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Nixon II-Ford</td>
<td>none</td>
<td>8+,6-</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Carter</td>
<td>1-</td>
<td>14+,0-</td>
<td>3-</td>
<td>1+</td>
<td>none</td>
</tr>
<tr>
<td>Reagan I</td>
<td>1+</td>
<td>3+,9-</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Reagan II</td>
<td>1-</td>
<td>1+,6-</td>
<td>none</td>
<td>1+</td>
<td>none</td>
</tr>
</tbody>
</table>

TOTAL Changes: 2+,2- 48+,34- 0+,4- 4+,2- 0+,0-


Note: The entry in the table records the number of changes in the discount rate of the Federal Reserve Bank of New York during the period. Hence the entry "6+,2-" indicates that there were six increases in the discount rate and two decreases. The entry "none" indicates there were no changes in the discount rate.
Figure 1. Probability of Election of Party L

[Shown for five different values of Party C policies]

Legend: Figure shows the probability of electoral victory of Party L as function of Party L policies for five different fixed values of Party C policies. The policy variable is x and runs from -0.5 to +0.5, with x = 0 for the median voter. Party L's preferred policy is for x = -0.2, while party C's preferred policy is for x = +0.2. This figure shows the manner in which party L's probability of election declines as party L's policy moves away from the median voter.
Figure 2. Party L's Utility

[For five different values of party C's policies]
FIGURE 3

Reaction Functions of Parties

[For varying ideology parameter]
FIGURE 4

Reaction Functions of Parties

[For varying ideology parameter]
FIGURE 5. Inflation Trajectories for Parties with Differing Inflation Aversion and Initial Conditions

Legend: The trajectories are inflation rates for the opportunistic model. Paths B and D show trajectories for inflation-averse parties while A and C are unemployment-averse liberal parties. The initial conditions are 0 and 16 percent inflation rates.
Fig 6. Inflation Trajectories
Differing Preferences with Shocks

Note: The assumptions about parties and initial conditions are identical to Figure 1. In this simulation, the system is subjected to random inflation shocks.
Legend: This simulation shows the election outcome, unemployment, and inflation for a model with ideological parties and supply shocks.
**Fig 8. Instability of Outcomes**

Small Changes in Preferences

![Graph showing inflation rates over time](image)

- **Inflation Rates**
- **Time (in halves of electoral cycles)**
- **Notes:** Simulations show different trajectories for economy with identical parameters and shocks except for small change in preferences of parties.
Legend: This figure shows the reaction of the three different party types to an inflation shock, where each party was originally in long-run (or limit-cycle) equilibrium. The three parties are opportunistic, ideological, and ultrarational with opportunistic parties.
Figure 10

Presidential Approval:
Overall (solid line) and in Economic Management (dashed)

Note: The solid line is the ratio of approval to disapproval of the President, while the dashed line is the ratio of approval to disapproval of President's management of the economy.
Figure 11
Voter approval and unemployment, 1981–87

Unemployment rate (left scale)

Approval rate (right scale)

Unemployment Rate (percent of labor force)

Popularity ratio


aea12

--- U ---- POPRATGE
FIGURE 12
HONEYMOON EFFECT: DECAY OF APPROVAL RATIO FOR EIGHT POSTWAR PRESIDENTS, FIRST YEAR IN OFFICE

APPROVAL RATIO

(RATIO OF APPROVALS TO DISAPPROVALS)

MOMTHS AFTER INAUCRATION

POPTRU --- POPKEN --- POPNIX --- POPCART --- POPREAG
--- POPIKE --- POPLBJ --- POPFORD --- POPREAG
Memory of Unemployment Past: Economic, Optimal Forecast, and Estimated

Weight on Lagged Unemployment Rate

From Social Welfare Function

Estimated from Popularity Function:
1. Koyck lag
2. Geometric distributed lag

Forward-looking: optimal forecast

Note:
The lag distributions are estimated impacts of unemployment upon Presidential popularity over the period 1981-87. The four distributions correspond to different assumptions about expectations.
FIGURE 14
Change in Social Security Tax Rates, 1964–77
Figure 15

Actual and McCallum Prediction for PBC Model

Unemployment Rate

(Percent of labor force)

Actual

McC

Note: McC series is calculated using the estimated equation from McCallum [1978] over his sample period of 1949-74 and forecasting over the sample period.

PBCIIFAA
FIGURE 16. ACTUAL AND PREDICTED UNEMPLOYMENT RATE FOR COMBINED OPPORTUNISTIC-IDEOLOGICAL MODEL

Unemployment Rate

(percentage of the labor force)

NOTE: Predicted uses ideological variable, opportunistic variable, lagged inflation and inflation squared (see text).