FISCAL EFFECTS ON PRESIDENTIAL ELECTIONS: A FORECAST FOR 2004

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1. Introduction.

In previous publications we have developed and tested a fiscal model of presidential elections, including a forecasting application of the same.[2] Here we present a summary of the theoretical model and the results of new empirical tests before using the model to make a forecast for this year's election.

2. The model.

Figure 1 is a graphical representation of the pure fiscal model of presidential elections.[3] It consists of two variables, F and VOTE2. Running along the horizontal axis, F is the percent of Gross Domestic Product (GDP) spent by the federal government. VOTE2, the percent of the two-party vote won by the incumbents at the end of term election, is viewed along the vertical

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[1] Many thanks to an anonymous reviewer of this journal, to Ray Fair, and to Randall Jones of the University of Central Oklahoma, from whose comments on earlier work of ours we have profited, for their criticisms and suggestions. Also, we are grateful to William Niskanen and Sam Peltzman who, at our request, offered suggestions to help us to explain, theoretically, why spending, per se, is not to be construed as the benefits of government. Needless to say, we are solely responsible for any conceptual, methodological, or empirical errors that may remain.

[2] Cuzán and Bundrick (1992, 1996, 1999, 2000). See also Cuzán and Heggen (1984, 1985), and Cuzán, Heggen, and Bundrick, (2003). To the best of our knowledge, other than ourselves, only economists William Niskanen (1975, 1979) and Sam Peltzman (1990, 1992) have explored the relationship between fiscal policy and presidential elections in any depth, although with different fiscal measures and over varying time periods.

[3] For a representation of the relationship between spending and the vote that bears some resemblance to ours, which we regret to say we did not discover until the late 1990s, see Nilson (1969).

axis. A truncated support function or schedule S slopes down and to the right, encapsulating the model's key hypothesis: *ceteris paribus*, as F increases VOTE2 falls. That is, the greater the share of the economy flowing through the federal government, the smaller the proportion of the electorate that is willing to grant the incumbents another term in the White House.

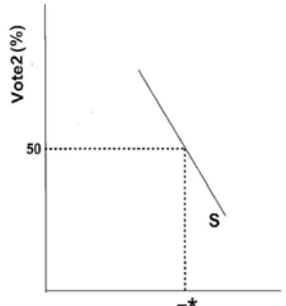

Figure 1

Lg Figure 1

The theoretical justification for this hypothesis rests on an analogy with economics. F is interpreted as the equivalent of a "price" or a fiscal "fee" which Washington charges the economy for the federal bundle of goods and services.[4] Metaphorically, on election day the incumbent party, of which the president is the chairman of the board and chief executive officer, has its "contract" to manage the federal government up for renewal. Much like consumers, the voters' willingness to grant the governing party another term depends on the fiscal fee being charged.[5] *Ceteris paribus*, as this rate goes up, more and more voters refuse to reelect the incumbents, casting their ballots, instead, for the opposition party. If spending has grown beyond what a majority of the electorate is willing to support with their votes, the incumbents

[4] On model-building by analogy, see Morris (1970). See also Black (1950), Katzner (1969, 1992), Pribram (1953), Richardson (1991), Russett (1966), and Sebba (1953).

[5] As Erikson, MacKuen and Stimson put it, "[c]itizens are consumers of government" (2001: 16).

are "fired." Conceived in this manner, an election is equivalent to a retrospective-minded referendum on the president's fiscal policy.

Parenthetically, we do not maintain that voters, in making up their minds before they go to the polls, do in fact calculate the change in the ratio of federal spending to GDP since the last election. What we conjecture is that voters are able to observe the effects of fiscal policy on their surroundings, and act accordingly. That is, we assume that on election day voters cast their ballots *as if* they knew and cared about the value of F. Economists routinely make such "as if" assumptions. For example, discussing the theoretical grounds on which the Walrasian "vision" of general equilibrium rests, Katzner explains: "Thus, although there is no guarantee that the consumer is, in fact, a utility maximizer, the model constructed here and the vision from which it emanates explains his behavior *as if* he were."[6]

Returning to Figure 1, the maximum that the incumbents can spend and still retain their lease on 1600 Pennsylvania Ave. is F*. This is found on the horizontal axis at the point touched by a line dropped from the support function S where it crosses the 50 percent plus 1 threshold needed for reelection. At F* the electorate is equally divided between those who will support more spending, whom we refer to as Rousseauans, and those who will not, whom we label Lockeans. Thus, F* belongs to the median voter, as in other rational-choice models. Needless to say, F* is a theoretical concept, a gravitational point to which the fiscal-electoral system would tend to converge were it to be insulated from parameter change. As a practical matter, the system is never at rest. For one thing, a shock such as the September 11, 2001 terrorist attack on the United States would tend to flatten the support function, at least temporarily, which implies lesser voter sensitivity to fiscal expansion. Paraphrasing the language of economics, critical events requiring a federal response tend to reduce the "elasticity" of the support schedule. Alternatively, disillusionment with the effectiveness of government programs would have the

[6] Katzner (1992: 46; emphasis added).

opposite effect: the support function would rotate downward, assuming a more vertical angle with respect to the x-axis, which implies that even marginal increases in spending would be punished severely by the voters. Thus, although always negative, the slope of the support schedule (dV/dF) becomes more or less steep in response to random shocks, short-term disturbances, or slower changes in voter sensitivity to the size of the fiscal "fee" charged for the federal bundle of goods and services.

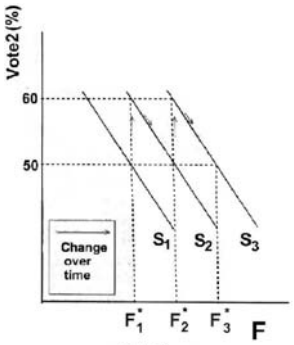

Figure 2

Lg. Figure 2

Also, it is important to keep in mind that the support function may shift forward or backward as voters' desires or evaluations of the quantity and quality of what Washington provides go up or down in response to demographic, social, international, ideological, or some other exogenous change.[7] This is shown in Figure 2. Assume the starting point to be F^*_1 in period t_1. Assume, further, that in the next period the public, believing that the benefits of the goods and services provided by the federal government exceed their cost, is willing to support additional spending to obtain them. In the model, this is represented by a forward shift in the support function, from S_1 to S_2, where it intersects the 50 percent plus one victory threshold

[7] See, *inter alia*, Ferris and West (1996), Berry and Lowery (1987), Lewis-Beck and Rice (1985), and Peacock and Wiseman (1961).

further to the east.[8] This results in the reelection of the incumbents with, say, 60 percent of the vote. Responding to wishes of the electorate, the governing party will now spend more. As the federal budget grows relative to the economy, the proportion of voters for whom the value of the additional goods and services exceeds the opportunity cost of increased spending again falls progressively until a new equilibrium, $F^*_{2,}$ is reached. Assuming that the additional spending is not completely wasted, at F^*_2 the federal government now charges the economy a higher fee in exchange for more or better goods and services than it did at F^*_1. If the process is repeated, either periodically, in big steps, or incrementally, F* migrates forward over time. Presumably, the process could also occur in a reverse direction. It might happen that more and more voters come to believe that the federal bundle of goods and services is not worth what is being spent on it, perhaps because there are cheaper or better substitutes available in the market for at least a portion of it or because the conditions which originally justified a number of government programs have disappeared (e.g., the end of the Cold War). In that case the support function would shift backward one or more times, in a Lockean direction, causing F* to trek westerly, from F^*_3 to $F^*_{1.}$ Thus, F* is an elusive target, subject to short-term displacements and long-term migrations in either direction. We reiterate that this is only an idealized depiction of the fiscal-electoral system. In practice, the governing party may not want to spend as much as F* for ideological reasons or, being risk averse, for fear of defeat. Alternatively, the incumbents may be committed Rousseauans, willing to "push the fiscal envelope" to see how much more spending the electorate will consent to, even at the risk of overshooting the mark.

[8] We do not say "to the right" because, by convention, this word stands for "conservative," just as "left" is used to denote "liberal." It might be confusing to describe a more favorable attitude toward government spending on the part of the voters as "a shift to the right," or a less favorable one as a "shift to the left." For this reason, we use the more neutral nomenclature of the cardinal points, or terms connoting direction of motion, i.e., forward or backward.

Recapitulating, our theoretical model consists of two principal actors, the voters and the incumbents, represented by the president or, if he is not running for reelection, his party's candidate, and a secondary player, the opposition party. The model is described by a fiscal-electoral plane displaying a continuous, downward-sloping support function or schedule S. The points along the support schedule show the proportion of voters who consent to the federal government spending any given portion of GDP. Voters are distributed along this function so that, with every increase in the relative size of the federal budget, fewer and fewer of them are willing to grant the incumbents another term in the White House. Theoretically, the equilibrium amount of spending, denoted by F* in Figure 1, is found where the support function crosses the 50 percent plus one reelection threshold, i.e., where the median voter is located. F* is the maximum that the incumbents can spend and still have their contract to manage the federal government renewed for another four years. The support schedule is not static, however. It may rotate on its axis, becoming more or less "elastic." Or it may shift forward, in a Rousseauan direction, toward support for greater spending; or drift backward, in Lockean fashion, toward less spending. Such rotations and shifts in the support schedule render F* a fleeting object.

Before turning to empirical testing of the model, it is meet that we first take up a number of theoretical objections. One is to argue that taxes constitute the true cost of government, to be weighed against spending, which represents its benefits. This argument is faulty on two grounds. For one thing, taxes are not the only source of revenues. Borrowing, which commits future taxes, and monetary expansion, or inflation, which depreciates the value of the dollar, are additional tools of public finance. Thus, using taxes as the measure of the cost of government would underestimate it. By contrast, spending, which is financed by a combination of taxes,

borrowing, and monetary expansion, is a more complete, though not exact estimate of the cost of the goods and services produced or provided by the federal government.[9]

More fundamentally, however, expenditures *per se* cannot possibly be construed as a good. Voters do not value federal spending as an end in itself but as a means of obtaining real goods and services, produced directly by federal employees or procured through purchases and contracts with private vendors, on which they place a positive value. A government could conceivably, against the wishes of the citizenry, spend their money on something that, for a variety of reasons, they may not want. In the most prosaic of cases, it could simply be that, *at the margin*, the benefits voters derive from the federal bundle of federal goods and services is not, in their opinion, worth what is being spent on it. Every dollar spent by the federal government incurs an opportunity cost in the form of some *other* good or service which the voters could have purchased themselves in the market or obtained through local or state governments. More dramatically, it could also be that the additional spending is on things that have no value for the electorate or even subtract from their welfare, as when government embarks on an unpopular war, restricts their civil liberties, or tyrannizes over them.[10] F, the ratio of federal outlays to GDP, then, is indeed *not* the measure of the benefits but of the *cost* which the voters incur in procuring real goods and services through their agent, the federal government.

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[9] Spending is only a partial measure of the cost of federal goods and services because one set of those services, namely economic and other regulations, impose additional costs on the economy. We thank William Niskanen for pointing this out.

[10] A danger that both John Locke (1980) and Jean Jacques Rousseau (1968) recognized. Our model, however, assumes that the incumbents are quadrennially evaluated by the voters, and that constitutionally, as well as practically, they are obligated to abide by the results of free elections. Accordingly, it would be in their interest to refrain from doing such bad things to the voters as would cause them to be ejected from the White House.

As well as theoretical reasons, empirical evidence supports the notion that expenditures, not taxes, constitute the true measure of the cost of government goods and services. As Peltzman puts it:

> The notion that voters like government spending but dislike taxes has become conventional wisdom. . . . This conventional wisdom, however, is wrong. . . . [T]here is no evidence at all for the notion that spending is politically beneficial. . . . [T]he one statistically reliable bad is spending, not taxes.[11]

Another challenge to the model is that it does not distinguish between categories of spending. Here again, Peltzman demonstrates that the data show no difference in voters' aversion to additional federal expenditures after they are dis-aggregated into military and civilian components. When it comes to federal spending, "at the margin, a dollar is a dollar. Whether it is spent on the military or civilian sector or on 'public' goods or private goods (transfers), the marginal dollar is equally poisonous politically."[12]

A third objection is that the model is "reductionist" or, worse, "simplistic." But the purpose of *any* model is to simplify, to compress reality into a few theoretically tied propositions from which one is able to deduce testable hypotheses. Like all representations of complex systems, ours is an attempt to "*lose* information."[13] All the same, our model may strike any number of readers as "implausible" or "unrealistic." So be it. In the final analysis, the only objective test of a scientific model is not how well its theoretical assumptions or hypothesized relationships conform to conventional interpretations of the same system, but how well it fits the relevant facts concerning the real phenomena one seeks to explain or understand. To cite Ashby

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[11] Peltzman (1992: 339-340). However, Niskanen (1975) did find that both taxes and expenditures negatively impacted the vote.

[12] Peltzman (1992: 346).

[13] Asby (1970: 100).

again: "test by demonstration is always treated as the ultimate test, let plausibility say what it will. . . . The operational test is the last court of appeal."[14] It is to those "operational tests" that we turn next.

3. The evidence: bi-variate tests.

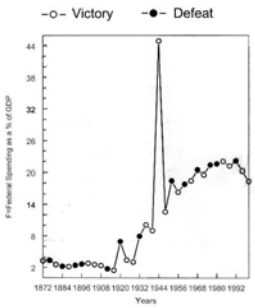

Figure 3

Lg. Figure 3

Figure 3 displays the empirical relationship between F, this time viewed along the vertical axis, and election outcome, victory (white dots) or defeats (black dots) in the two-party vote for president, across 33 elections held between 1872 and 2000. The height of the line connecting the dots, the F-line, measures the level of spending, i.e., the ratio of federal outlays to GDP. Note that the F-line can be divided into three time-periods. Between 1872 and 1928, except for the displacement of World War I (1920), the F-line, at a low level to begin with, slouched marginally downward. In the following six decades, the large displacements of World War II (1944) and the Korean War (1952) aside, the F-line went up as if climbing a ladder, peaking at 22 percent of GDP in 1992, or seven times its value in 1928. Finally, in the most recent past, the F-line subsided from its post-World War II high and, as of 2000, was down back to its 1956 level. (As we shall see, it has bounced back during President George W. Bush's administration.)

[14] Ashby (1970: 103-104).

At first glance there appears to be no relationship between the *level* of spending and election outcome. It seems as if the incumbents are returned to the White House at any height of the F-line. However, examining the *turns* in the F-line, a relationship emerges. Most of the time, clockwise turns, representing decreases or decelerations in the growth of federal outlays relative to GDP, are associated with victory in the two-party vote for president; by contrast, counter-clockwise turns, generally describing increases or accelerations in the growth of spending, coincide with defeat.

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Table 1

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These turns in the F-line are quantified by the variable FISCAL. (This and all other variables included in this paper are defined and operationalized in Table 1.) FISCAL is constructed with two measures of fiscal policy, F1 and F2, or the first and second derivative of F, respectively. F1 represents the change in F between election years. F2 describes the change in F1, or the rate of change in F between election years, i.e., an acceleration (F2>0) or a deceleration (F2<0). If F1>0 and F2$\geq$0, this means that in the current term F has increased at the same or faster rate than in the previous administration. This is an unambiguous case of fiscal expansion, so that FISCAL = 1. If F1>0 and F2<0, this means that in the current term F has grown at a slower rate than in the previous term, i.e., its rate of growth has decelerated. If F1<0, regardless of the value of F2 this means that F has contracted since the last election. Both of these are instances of a cutback fiscal policy, i.e., FISCAL = -1. Although theoretically FISCAL could take the value of zero (F1=0, F2=0), representing a steady-state fiscal policy, historically this has never happened. (See the Data Appendix.) It appears that when it comes to fiscal policy,

presidents are prone to play an activist role, either slashing or augmenting the budget. Stand-patters they are not.

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Table 2

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Table 2 displays the bivariate relationship between fiscal policy measured by FISCAL and election outcome, i.e., a simple win or loss for the incumbents in the popular vote for president, since 1872. Table 2.a covers the entire data series and Table 2.b only that since 1916, a period to be analyzed more closely in the next two sections. The relationship is strong and statistically significant in both periods, with better than four out of every five elections, or eighty percent of all cases, behaving as expected.

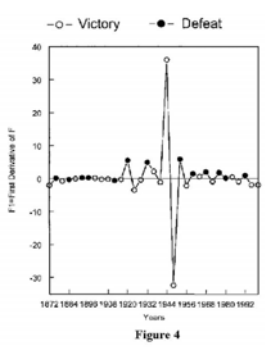

Figure 4

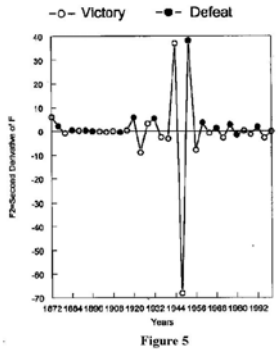

Figure 5

Lg. Figures 4 and Lg. Figure 5

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Not only FISCAL, but its component variables, F1 and F2, are also associated with victory or defeat of the incumbents in the popular vote for president, as shown in Figure 4 and 5, respectively. Observe that in both figures defeats are clustered above the mean line and victories below it. Paradoxically, then, as shown in Figure 3, the federal government's share of the

economy grew dramatically between 1928 and 1992, even though, as the evidence shows, more often than not voters have ousted incumbents when they implemented fiscal expansion.

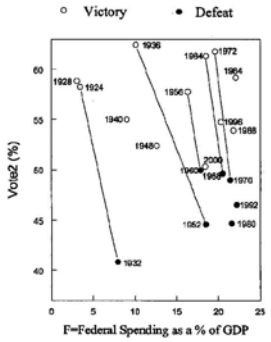

Figure 6

Lg. Figure 6

Figure 6 offers a solution to the paradox. It plots the value of F and VOTE2 between 1924 and 2000 (the election of 1944, in which F took an extraordinary value during World War II, is omitted). Although the points in Figure 6 could be connected in any number of ways, our model (recall Figure 2) suggests the drawing of five separate support functions, one each for 1924-1932, 1936-1952, 1956-1960, 1964-1968, and 1972-1976. These functions coincide with five party reigns, three of Republicans and two of Democrats. Each line represents two points: the first reelection of the incumbents, and their defeat. Intermediate elections, if any, are also shown.

Figure 6 should be compared with Figure 2. Recall that we use the latter to explain how forward shifts in the support function propel fiscal growth. Figure 6 shows four forward shifts in the support schedule, one each marked by the elections of 1936 (FDR), 1956 (Eisenhower), 1964 (LBJ), and 1972 (Nixon), respectively. These shifts, which unlike the temporary one of 1944 (not shown) were not offset by a subsequent backward movement in the support function, left a permanent fiscal impression. They coincide with the reelection of a president to the second term of a party reign after pursuing a cutback policy, either a deceleration in the growth of spending

(F2<0), as was true in the case of FDR in 1936, LBJ in 1964 and Nixon in 1972, or an outright reduction (F1<1), Eisenhower in 1956. We will make use of this observation about shifts in the support schedule in the multiple regression models to be estimated presently.

Be it noted that all but two elections since 1964 (those of 1984 and 2000) congregate along a ridge bounded by the last two support functions, one presided by a Democrat (LBJ, 1964-1968) and the other by Republicans (Nixon-Ford, 1972-1976).[15] These support functions have the steepest slopes of any function plotted in Figure 6. This means that the support schedule has become more elastic over time, implying that it has become increasingly difficult to persuade the voters that additional federal spending to obtain the goods and services Washington provides them is warranted.[16] Incidentally, unlike Presidents Eisenhower, Johnson, and Nixon, President Clinton did not win reelection in a landslide after implementing a cutback policy (indeed, his was the first reduction in F since Eisenhower's first term). Furthermore, the 2000 election fell down from the 1964-1976 ridge, landing further to the west, on the 1956-1960 schedule. Although two cases do not a pattern make, this could be clue that the support function may have drifted backward somewhat since the 1984 outlier. Both of these observations suggest that support for federal spending may have hit a maximum with Ronald Reagan's reelection. When or whether the support function will recover its 20th century forward momentum remains to be seen.

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[15] For what it may be worth, in the 1964-2000 period, excluding the two outliers of 1984 and 2000, which are positioned almost equidistant from the regression line, the former Northeast and the latter Southwest of it, the Pearson's r correlation between F and VOTE2 across the remaining eight elections is a whopping -0.86! Including the outliers cuts the correlation coefficient in half.

[16] An observation that correlates with conclusions reached by economists William Niskanen and Sam Peltzman. The former found that "the marginal value of the aggregate package of federal services appears to be nearly zero" (Niskanen, 1975: 631) while the latter noted "that voters are treating the marginal dollar of federal spending as essentially worthless" (Peltzman, 1992: 338).

Be that as it may, the foregoing analysis exhausts our examination of the bivariate relationships in the data. Before turning to multiple regression models, a recapitulation of our empirical findings to this point is in order. We have noted that, as Figure 3 shows, there appears to be no relation between F and VOTE2, even as relationships between *changes* in F and election outcome are readily discernible, as demonstrated in Table 2 and Figures 3, 4 and 5. Ironically, even as F rose by a factor of seven between 1928 and 1992, most of the time incumbents who increased spending were defeated while those who implemented fiscal cutbacks scored a victory in the two-party vote for president. Theory dissolves the apparent paradox. The 1928-2000 data points exhibit a pattern reminiscent of Figure 2, one where shifts in the support schedule propel fiscal growth even as incumbents who actually implement fiscal expansion are defeated. We conjecture that since 1932 there have been five forward shifts in the support schedule, one each in 1936, 1944, 1956, 1964, and 1972, none but the second being offset by a backward shift.

We conclude this section with the following caveat. Because F is subject to temporary displacements and migrates over time, finding a simple relationship between F and election outcome across a longitudinal data series is not easy, if it is possible at all. Actually, the level of spending, measured by the height of the F-line in Figure 3, does not represent fiscal policy at all, but the outcome of policies implemented by previous presidents. Every new arrival to the White House inherits F at some level. It is what a president does with it, whether he adds or subtracts from F at the margin, that is, between elections, that defines an administration's fiscal policy, for which the incumbents, in turn, are held accountable by the voters. Thus, the true relation between spending and election outcome is between *changes* in F between one election and the next, measured by F1 or FISCAL, and VOTE2. With that clarification in mind, we next proceed to test for fiscal effects on presidential elections with multiple regression models.

4. The evidence: multiple-regression models.

Most presidential election models consist of between two and seven variables, and are estimated over anywhere between scarcely over a dozen elections to close to twice as many.[17] A common denominator across almost all the models, though, is at least one measure of economic conditions, although no two employ the same metrics.[18] This suggests that, although agreement is widespread that voters appear to hold the incumbents accountable for the state of the economy, there is as yet no consensus as to what set of variables best captures that effect. Also, many models, particularly those employed to forecast presidential elections, but not Fair's, include a variable from surveys of voters. Here again, though, there is no unanimity on what is the best indicator of public opinion or sentiment. For example, Abramowitz employs a mid-election year presidential approval rating, Campbell uses a Labor Day Gallup "trial heat" poll pitting the two major party candidates, and Lewis-Beck and Tien include two such measures, the first July Gallup poll of presidential approval before the election and a "peace and prosperity index."[19]

For our part, we wish to estimate the fiscal effect on presidential elections over as many elections as possible, controlling for economic conditions and other variables which previous

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[17] The most parsimonious model is Campbell's (1996, 2001a, 2001b) and the least is Fair's (1996, 2002). Other than Norpoth's (2001), Fair's (1996, 2002) is estimated over the longest time series, beginning with that of 1916, for a total of 22 elections, while Abramowitz's (2000, 2001), Campbell's, Lewis-Beck and Tien (2001), and Lockerbie's (2001) are estimated only since 1948, 1952, or even 1956..

[18] Norpoth (2001) is an exception, although his earlier model included both GNP growth and inflation; see Norpoth (1996). Jones (2002) is a comprehensive compendium of all the models. See also Campbell and Garand (1996, 2000), which include contributions by Abramowitz, Campbell, Holbrook, Lewis-Beck and Tien, Lockerbie, and Wleizen and Erikson.

[19] Abramowitz (2001), Campbell (2001), Lewis-Beck and Tien (1996, 2001). Still other survey measures are used by Holbrook (1996), Lockerbie (2001), and Wleizen and Erikson (1996, 2001).

research has shown influence the vote. Fair's economic data series, periodically updated with the most recent economic estimates, fits the bill perfectly. It consists of three variables, GROWTH, GOODNEWS, and INFLATION (see Table 1 for their definition and operationalization). The first is a measure of election-year economic growth (through the first three quarters), the second of the performance of the economy over all but the last quarter of the presidential term, and the latter of the absolute change in the price level, also over all but the last quarter of the term. In his model, Fair adjusts the last two measures for three war years, entering 0 instead of the real value in 1920, 1944, and 1948. However, we have a control for war that is more appropriate to our model (see below), so we enter the real value of the variables in those years,[20] thus converting GOODNEWS into ALLNEWS and INFLATION into ALLPRICES (again, see Table 1). Fair's GOODNEWS is idiosyncratic, and this has led some researchers to criticize this measure as "arbitrary."[21] For the reason offered in the previous paragraph, we do not believe that this is a fair criticism (no pun intended). In fact, pairing a variable that measures growth in the months leading to the election with one that gauges the impact which extraordinary economic performance some time during the presidential term may have made on the minds of the voters strikes us as an imaginative tool for estimating the true economic effect on the vote. As we said earlier, no consensus has yet emerged on how best to do this, any more than on what the optimal reading of public opinion is for the purpose of forecasting how voters will cast their ballots even a few months hence, as the different variables used by Abramowitz (1996, 2001) and Campbell (1996, 2000), among others, illustrate. Until theory and empirics settle the issue, one would do well to experiment with diverse measures of economic conditions associated with presidential election outcomes, and thus we shall continue to use Fair's. The fourth and last variable borrowed from Fair is DURATION. This is a weighted index of consecutive terms in office, a

[20] We thank Professor Fair for e-mailing us the data.

[21] As did a reviewer of this journal, and also another presidential elections scholar, who shall also remain anonymous, in private e-mail communication to the first author.

measure of voter "fatigue" with the incumbents, or what Abramowitz (2001) calls a "time for a change" factor, even if the latter operationalizes it differently.[22]

Two more non-fiscal variables are included in our models. One is the PARTY of the incumbents, which not only Fair but also Alesina and Rosenthal (1996), having found that historically Republicans do better than Democrats, include in their models. The other is a control for war. As the spikes in Figures 3, 4 and 5 demonstrate, three wars left a graphical fiscal impression: World War I, World War II, and the Korean War. (The Vietnam War, perhaps because it stretched over several administrations, did not.) Each war impacted two back-to-back elections, one coming at the end of the term during which the war was fought, when F shot up, and the other at the end of the term immediately following, when F fell back to a more normal level. Thus, each war is associated with two consecutive wide swings in fiscal policy in opposite directions, one expansionary, the other cutback. For the purpose of testing the fiscal effects on elections, we need to control for the independent effect caused by war. We wish to impute to fiscal policy neither an impact on the vote that is attributable not so much to the large fiscal expansion required for waging war as to the domestic opposition the war generated, nor to credit fiscal cutback with the relief or other good feeling that the restoration of peace brought about. Therefore, we constructed a categorical variable, WARONVOTE, which takes the value of 1 in 1920, 1944, and 1952, a value of -1 in 1924, 1948, and 1956, and 0 all other years. Also, be it noted that in previous publications we showed that when fiscal policy is controlled for the alleged advantages to the incumbents of having the president head the ticket disappears.[23] Nevertheless we included this variable in the initial estimations of the models, where it did not turn up as

[22] Abramowitz's TERM is scored 1 if the incumbents have been in the White House two or more terms, and 0 otherwise. In the multiple regression models reported below, we substituted this variable for DUR, and the results were about the same.

[23] See Cuzán and Bundrick (2002) and Cuzán, Heggen, and Bundrick (2003).

statistically significant, so for the sake of parsimony we dropped it from subsequent model estimation.

All that said, we proceed to calculate the fiscal effects on the vote. The models to be tested with all 22 presidential elections held since 1916, which is the period Fair uses to calibrate his variables and estimate his model, take the following general form:

$$VOTE2 = A + \beta_1 GROWTH + \beta_2 ALLNEWS + \beta_3 ALLPRICES +$$

$$\beta_4 DURATION + \beta_5 PARTY + \beta_6 SHIFT + \beta_7 WARONVOTE + \beta_8 FISCVAR + E,$$

where FISCVAR, the fiscal variable, stands for F, F1, or FISCAL; SHIFT is a categorical variable which, as suggested by Figure 6, takes into account five elections during which the support schedule shifted forward (1936, 1944, 1956, 1964, and 1972); all other variables are defined and measured as indicated in Table 1, A is a constant (intercept), β_1- β_8 are coefficients, and E is an error term.

Table 3 displays the results. We estimated the complete model for each of the fiscal measures and, in the case of F and FISCAL, where one or more variables did not show up as statistically significant in the first model, in a second model that includes only those variables that did, except that in the models for F and F1 we retained WARONVOTE regardless of how it fared in the first run for the purpose of obtaining the most valid estimate of the coefficient for these two fiscal two variables, which as already noted are subject to wide swings during war.

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Table 3

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Even though no bivariate relationship between F and VOTE2 was visually discerned in Figure 3, which covers well over a century of observations, in the shorter data series 1916-2000 a weak but nevertheless *negative* relation between F and VOTE2 emerges when the aforementioned

controls are applied, although the t-statistic for F's coefficient is just under 2.0, thus falling short of the conventional statistical significance threshold.[24] That qualification aside, other things equal a difference of 8 points in the absolute level of F is associated with approximately a one point fall in the incumbent share of the two-party vote. That this is hardly an earthshaking effect is just as we had expected, since as already noted random shocks, minor disturbances, permanent shifts, and incremental drifts of the support function in one direction or another render it almost impossible to find a negative relationship between the two variables across elections held over a long period of time. Repeating what we said at the end of the previous section, F is not a measure of fiscal policy at all. Rather, it is the outcome of historical trends, of shifts in the support schedule and the fiscal decisions of preceding administrations. Every president inherits some level of F. It is what he does with it between one election and the next that defines an administration's fiscal policy. Fiscal policy thus consists in the *changes* which a president implements with regard to F.

For the relation between fiscal policy and election outcome, then, we need to examine the models with the two variables measuring changes in F between elections, i.e., F1 and FISCAL. The model for F1 is found in column 4 of Table 3. Note that every four point increase in F between elections (F1= 4) is associated with a one-point decrease in the incumbent share of the two-party vote for president. (Be it noted that, although not shown, substituting F2 for F1 yields approximately the same results). The best-performing model, though, is that for FISCAL. As Column 5 shows, this variable is insensitive to SHIFT and WARONVOTE, and trumps ALLPRICES. What appears in column 6, then, is a compact, five-variable model where a switch in fiscal policy from cutback to expansionary costs the incumbents about five percent points in the two-party vote.

The findings displayed in Table 3 suggest two things. First, confirming the results of bi-variate tests, in multiple-regression models the data do show that fiscal policy has the hypothesized

[24] Fair (2002: 22).

effect on the vote. Even in the face of controls for variables which other researchers have established have an independent impact on the vote, the effect of fiscal policy is statistically significant and in the direction hypothesized by the model represented in Figure 1. As federal spending goes up between one election and the next, the incumbent share of the two-party vote falls. Be it noted that all the models exhibit good to excellent fit with the data, the R square being approximately 0.90 and the SEE ranging between 2.0 and 2.5.

The other thing is that, of the three fiscal policy measures, FISCAL appears to have the greatest potential for explanation, practical applications in policy-making, and forecasting. For reasons already discussed, as expected the effect on the vote caused by F, the absolute level of the ratio of federal outlays to GDP, measured by the height of the F-line in Figure 3, is very small. As for F1, its coefficient understates the impact of fiscal policy on election outcomes, since on average F has to increase four points between elections (F1= 4) in order to effect a one point reduction in the incumbent vote. F1 having taken at least that large a value only four times since 1916 (in 1920, 1932, 1944, and 1952), this is bound to give the wrong impression both to researchers and to policy makers. Were an administration to take this model as the true representation of the relationship between fiscal policy and the vote, it would derive a false sense of security if, under its watch, F1 amounted to two to three percent, thinking it likely that such an increase would not lose it many votes. Yet the fact is that, as Figures 3 and 4 show, most administrations that practiced fiscal expansion increased F by, at most, one to two percent points, and most of those were defeated.

The coefficient for F1, then, simply does not do justice to the true effect of a change in fiscal policy on presidential elections. But the coefficient for FISCAL does: a five point difference in the vote resulting from a switch from a cutback to an expansionary mode is a matter of considerable import. Its political significance is made manifest by the fact that since 1916 close to half (9 out of 22) of all administrations have pursued an expansionary fiscal policy, and of those, seven were defeated; by contrast, in all but one of the 13 times when the incumbents

pursued a cutback policy they emerged victorious in the two-party vote (recall Table 2.b). It goes against the grain, continuous variables usually being preferred to binary ones, but FISCAL is clearly the correct choice for measuring fiscal policy. FISCAL is theoretically grounded, visually discernible in a graph (recall Figure 3), is useful for constructing a simple typology of presidents,[25] can be the basis for offering policy advice, and serves as the keystone of a compact, five-variable model that has the best fit with the data. Be it noted, two, that in the natural sciences and engineering[26] it is not unusual to represent reality with a binary variable, e.g., digital circuits of negative and positive voltage, or the spin of the electron, which takes a value of plus half or minus half, both variables having many applications to everyday life.[27] Accordingly, in the forecasting application that follows, it is FISCAL that we will employ to predict the vote.

Before doing that, there is another observation to be made about FISCAL. As it has been pointed out,[28] the relation we have found between FISCAL and VOTE2 in both the bivariate and the multiple-regression tests implies that incumbents are rewarded for even small reductions in the rate of increase in spending compared to the previous administration. To take up two real-case examples drawn from the Appendix: Under President Hoover F nearly tripled, from 3 to 8 percent of GNP, and he was soundly defeated for reelection in 1932. In the next term, FDR's first, F also went up, from 8 to 10 percent, yet President Roosevelt was returned to the White House by a

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[25] See Cuzán, Heggen, and Bundrick (2003), Chapter 3.

[26] The co-originator of FISCAL, Richard J. Heggen, is Professor Emeritus of Civil Engineering at the University of New Mexico. See Cuzán and Heggen (1984). For a simulation of the fiscal model with the tools of engineering, see Cuzán, Heggen, and Bundrick (2003), Chapter 5, "Simulating Presidential Elections."

[27] We thank our UWF colleagues Mohamed Khabou, Assistant Professor of Electrical and Computer Engineering and Chandra Prayaga, Associate Professor and Chairman of Physics, respectively, for these examples.

[28] We thank both an anonymous reviewer of this journal and Sam Peltzman for implicitly calling on us to comment on this peculiarity in the behavior of FISCAL by pointing it out.

record margin four years later. Under President Eisenhower's second term, F went up, from 16.4 to 17.9 percent, and his party's candidate was defeated in 1960. In the next term F also increased, but by a smaller increment, to 18.5 percent, and President Lyndon Johnson, like FDR, was reelected by another near-record margin.

The general relationship illustrated by these two cases suggests that voters are realistic in their expectations concerning what a president can do in the course of four short years in the White House. They realize that, just like the laws of physics dictate that one cannot stop a run-away train or car instantaneously or turn an aircraft carrier on a dime, so there is such a thing as fiscal momentum that may not be reversed in the short space of four years. Thus, a new president who comes into office after the defeat of a fiscally expansionary administration need not cut spending in order to win reelection. All he has to do is to put the brakes on its rate of increase, reducing its forward thrust. Thus, it may take two consecutive cutback administrations to bring spending increases to a halt. In the meantime, the incumbents have the opportunity to attempt to legitimate a higher F to the voters, to "sell" or persuade them that the additional goods and services being provided are worth the extra cost in spending. This feature of the fiscal-electoral system may be viewed as a stabilizing factor that allows the system to regain equilibrium after a displacement caused by a shock or a rupture in the fiscal consensus caused by an episode of serious disagreement between an occupant of the White House and the voters.[29]

5. A Forecasting Application.

The fiscal model of presidential elections is an explanatory framework rooted in a quasi-economic theoretical vision of the relationship between voters and presidents. As shown in the previous two sections, a model where FISCAL takes pride of place appears to fit the data quite well. But scientific hypotheses are evaluated as much by their predictive as by their explanatory

[29] For an interpretation of the American fiscal-electoral system as a stable or self-regulating system, see Cuzán, Heggen, and Bundrick (2003), particularly Chapter 5, "Simulating Presidential Elections."

value. The next test of the fiscal model, then, is to see how well it does at predicting and forecasting elections. Since we borrow three variables from Fair, it is only fitting that we compare the predictive and forecasting performance of our model with his.

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Table 4

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Table 4 displays the multiple regression results obtained with two versions of the fiscal model, each estimated over two time periods, 1916-2000 and 1916-1960. The estimates of the first version, what we call the simple fiscal model, appear in columns 4 and 5. (Column 4 of Table 4 is identical to column 6 of Table 3). In a slightly different version, what we call the fiscal-war model, the value of 0 is entered for FISCAL in 1944. The estimates for that model are shown in columns 6 and 7. (The reason for estimating this second version of the model will become manifest presently.) By way of comparison, our own replica of Fair's model is shown in columns 2 and 3. Note that the five-variable fiscal model, both in its simple and war-adjusted versions, does a little better than Fair's seven-variable model, the Adj. R-sq. is slightly larger and the SEE somewhat smaller.

Table 5 displays the out-of-sample predictions obtained with all models. (Be it noted that Fair does not report out-of-sample predictions). Observe that both versions of the fiscal model do better than Fair's model: the prediction rate is higher (only three elections are called wrong, against five with Fair's) and the size of the errors, however measured, is lower. Note, as well, the predictions obtained for 2000, a year when Fair's model bested all those designed by political scientists,[30] who over-estimated the Gore vote by as much as 6.7 points (Lewis-Beck and Tien,

[30] A fact lamented by Campbell (2001c: 275), who appears to have found it embarrassing that "an economist, Ray Fair, produced a more accurate forecast this year than any of the seven APSA models," that is, models presented at the 2000 American Political Science Association

2001) or even 10 points (Holbrook, 2001). In the case of the fiscal models, the forecasts were within two points of the actual vote and, unlike Fair's, they correctly predicted the winner.

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Table 5

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As a check against data mining, all three models were re-estimated over the 1916-1960 period (recall the second member of each pair of models in Table 4), and forecasts were generated for all subsequent elections. Table 6 displays the results. Again, the fiscal models did better than Fair's in all respects. Note that all three models are off only about 2-3 points from the actual vote in 2000; however, the fiscal models correctly predicted that Al Gore would win the popular vote, whereas Fair's model did not. In fact, the forecasts obtained with both versions of the fiscal model are as accurate as the most accurate forecasts made by political scientists that year, those of Abramowitz (53.2%) and Campbell's (52.8%),[31] whose models, as noted earlier, include a reading on public opinion, the former taken in mid-year and the latter as late as September. Thus, forecasting four decades out of sample, the fiscal models came as close to the actual results in 2000 as models estimated only since 1948.

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Table 6

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Finally, we come to the forecast for 2004. To make the forecast this far ahead of the election, one needs to rely on a prior forecast, again borrowed from Fair, of how the economy will have performed through the third quarter of the election year. Using Fair's very latest economic

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meeting.

[31] See Abramowitz (2001) and Campbell (2001).

forecasts (February 5, 2004), three predictions for this year's presidential elections are shown in Table 7, one each for Fair's model, the simple fiscal model, and the fiscal-war model.

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Table 7

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As early as November 2002, two years ahead of the election, Fair has been predicting that President Bush will "win by a fairly confortable (sic) margin," which at that time was forecast to be 56.3 percent of the two-party vote. On account of a recovering economy, with every quarterly update the forecast has gone up, so that as of February 5, 2004, Fair's forecast for Bush's share of the two-party vote stands at 58.7 percent, or just under what President Reagan won in 1984. In other words, Fair is anticipating a landslide reelection victory. By contrast, the two fiscal models offer a less sanguine forecast. The reason for the discrepancy has to do with fiscal policy. Under President Bush federal outlays as a percent of GDP have gone up by about 1.5 percent points. In other words, Bush has pursued an expansionary fiscal policy which, as our model hypothesizes and the data tend to bear out, works against the incumbents.

A fairly comfortable victory, but one still less ample than that foreseen by Fair, is forecast with the fiscal-war model. Recall that this model assumes that voters discount fiscal expansion in the case of a war fought to defeat an enemy that attacked the United States, as the Japanese did at Pearl Harbor. Since the homeland was assaulted on September 11, 2001, it is possible that the voters might draw a parallel between WW II and the war on terror. We are not arguing that they do. All we are doing is estimating the effects on the vote were that condition to hold. That said, judging from the campaign rhetoric of Democratic candidates during the primary season, there is reason to doubt that the electorate is as united behind this war as it was in 1944.

Hence, of our two models, the simple fiscal model is probably the most appropriate one to use. Given Fair's current forecast for the economy, with the simple fiscal model we predict a very

close race, with Bush edging out his opponent 52 to 48 percent. No other president since Truman has been reelected by such a close margin. It goes without saying that should the economy stall between now and November, performing less well than Fair expects, President Bush's reelection will be in even greater jeopardy. On the other hand, were economic growth to accelerate at least through the end of the third quarter of this year, the prospects of reelection will shine more brightly.

Be it noted, though, that the prediction interval ranges from around five points in the fiscal models to six points for Fair's, all at the 0.95 confidence level. In the case of Fair's model, the entire interval lies beyond the 50 percent threshold required for reelection, i.e., on the positive side of the victory/defeat divide, with almost three percent points to spare. This means that according to the Fair model the probability of president Bush's reelection is very high indeed. This is not what can be deduced from the fiscal models. In the case of the fiscal-war model, the entire prediction interval lies on the victory side, although just barely. For the reasons already mentioned, however, it is doubtful that this is the more applicable of the two fiscal models. With the one that is, i.e., with the simple fiscal model, the prediction interval straddles the 50 percent threshold, which means that VOTE2 could very well be below what is required for reelection. In short, the forecast for the 2004 presidential election obtained with the fiscal model is not at all reassuring for the incumbents.

6. Conclusions.

The foregoing analyses appears to show that the relation between fiscal expansion and election outcome is consistently negative and, when policy is measured by FISCAL, very strong and robust. Eighty six percent of all presidential elections since 1916 can be accounted for by FISCAL alone, a cutback policy being associated with the reelection of the party occupying the White House, and an expansionary policy with their defeat. Since 1916, a switch in policy from cutback to expansionary costs the incumbents in excess of 5 percent points in their share of the

two-party vote. This holds true after controlling for economic conditions, time in office, and whether the president is a Democrat or a Republican.

Thus, the empirical evidence seems to support the idea that voters are allergic to fiscal expansion. This would not have surprised Machiavelli. As he wrote in *The Prince*, "if he is prudent, [a prince] must not worry about the reputation of miser: because with time he will be considered even more liberal, when it is seen that because of his parsimony his income suffices him, that he can defend himself against whomever makes war on him, and that he can undertake enterprises without weighing down the peoples; by which token he comes to use liberality toward all those from whom he does not take, who are infinite, and miserliness toward all to whom he does not give, who are few."

The evidence appears to show, as well, that the five-variable fiscal model outperforms Fair's seven-variable model in several respects. First, it is more parsimonious, with fewer predictors and with no need to adjust their values in war years. Second, it has a somewhat better fit with the data. Third, it produces more accurate predictions and forecasts, calling fewer elections wrong and with a smaller error rate. Finally, unlike Fair's model, indeed, *unlike all forecasting models designed by political scientists,* the fiscal model gives pride of place to policy, in this case fiscal policy.[32] The evidence on its behalf leaves us with the intriguing hypothesis that presidential elections are not reducible to, as an aphorism made famous in 1992 had it, "the economy, stupid." That something the president does during his tenure in the White House impacts what voters do at the polls should be welcome news to political scientists. If the relationship is real, then presidents are not totally at the mercy of economic conditions. There *is* something a president can do: when it comes to spending, follow Machiavelli's advice and forego a policy of fiscal expansion.

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[32] In the case of Fair's model, this failing is noted in Armstrong (2003): 760.

Finally, as to this year's presidential election, our model gives us reason to believe that unless a strong consensus on the war is reconstructed between now and November, something that seems doubtful, or the economy accelerates through October, the race will go down to the wire. Absent either or both of those conditions, plan on staying up late on election night.

7. May 24th, 2004 Update.

As of April 29, 2004 Fair's forecast for Bush's share of the two-party vote stands at from 58.6 to between 58.7 and 60.6 percent, or an average of 60 percent (after rounding). The reason for the spread is that two of the recent quarters were only one-tenth of a point below what is considered a GOODNEWS quarter. If both are placed in the GOODNEWS category, in Fair's model this would add another 1.67 percent to the point forecast. Fair sums up his latest forecast thus: "The main message that the equation has been making from the beginning is thus not changed, namely that President Bush is predicted to win by a sizable margin." Actually, this is an understatement: Fair is forecasting nothing less than a landslide victory for President Bush, a reelection margin exceeded only by FDR in 1936, LBJ in 1964, and Richard Nixon in 1972. Again, the prediction interval lying entirely in the positive side of the VICTORY/DEFEAT divide, this forecast is about as rosy as it can get for the Bush camp.

By contrast, the fiscal model, which in light of the broken consensus over the war in Iraq[33] appears to be the more appropriate of the two fiscal models to use, offers a less sanguine forecast. The point prediction for President Bush's share of the two-party vote obtained with this model is between 52.4 and 53.2 percent, or an average of 53 percent (after rounding). This would be the closest victory margin for a sitting president since Truman beat Dewey in 1948. To make matters even less comfortable for the Bush team, the probability that the President will not win at least 51

[33] According to a May 2004 Gallup poll, only 44 percent of the public now believe that the war in Iraq was worth it, as opposed to 54 percent who think it was not.

percent of the vote, which in light of the uncertainties associated with the Electoral College is about the minimum to assure reelection, ranges from 0.71 to 0.90. According to the fiscal model, then, the chances are anywhere from 1 in 4 to 1 in 10 Bush will lose. Again, the reason for the discrepancy in the forecast between Fair's and the fiscal model has to do with fiscal policy. President Bush has pursued an expansionary fiscal policy which, as our model hypothesizes and the data bear out, works against the incumbents.

8. August 11th, 2004 Update.

On July 31, 2004, Ray Fair issued revised estimates for his economic variables and a new forecast. In this update, GROWTH = 2.7, INFLATION = 2.1, and GOODNEWS = 2. Given these values for his economic variables, Fair's latest forecast is for President Bush to take 57.48 percent of the two party vote. This is less than in his previous forecast, but not by much.

By contrast, entering Fair's latest estimates for GROWTH and GOODNEWS into the fiscal model (remember that the fiscal model converts GOODNEWS into ALLNEWS by not adjusting the variable in Fair's "war years") yields a forecast of 51.1 percent of the two-party vote for the President. This would be the closest victory margin of a sitting president since Cleveland edged out Harrison in the popular vote, only to lose in the Electoral College. Given the fiscal model's standard of error (1.9) and prediction interval (5), the election can go either way. In fact, according to the fiscal model the probability that President Bush will win at least 51 percent of the vote, the minimum needed to insure that the election will not go against him in the Electoral College, is only 0.51.

The forecast with the fiscal-war model is much better for the President: 54.3 percent, with a 91 percent probability that he will win at least 51 percent of the vote. However, as noted earlier,

given the broken consensus over the war in Iraq, there is no strong justification for using this model. Hence, the simple fiscal model is the most appropriate, and according to it the election is simply too close to call at this point.

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Table 1. Variable Definitions, Measurements, and Descriptive Statistics, 1916-2000

VARIABLE	DEFINITION AND MEASUREMENT	MEAN	S.D.
VOTE2	Percent of the two-party vote won by the incumbent party candidate, except that in the 1924 election Fair assigned 23 percent of the Lafayette vote to President Coolidge and the rest to the Democratic candidate (Fair 2002).	52.39	6.97
GROWTH	The "growth rate of real per capita GDP in the first three quarters of the election year (annual rate)" (Fair 2002).	1.39	5.74
INFLATION	The "absolute value of the growth rate of the GDP deflator in the first 15 quarters of the administration (annual rate) except for 1920, 1944, and 1948, where the values are zero" (Fair 2002).	2.98	2.48
ALLPRICES	ALLPRICES=INFLATION, except that no adjustments are made in war years, i.e., the real values are entered in 1920, 1944, and 1948.	4.38	3.66
GOODNEWS	The "number of quarters in the first 15 quarters of the administration in which the growth rate of real per capita GDP is greater than 3.2 percent at an annual rate except for 1920, 1944, and 1948, where the values are zero" (Fair 2002).	5.09	3.01
ALLNEWS	ALLNEWS=GOODNEWS, except that no adjustments are made in war years, i.e., the real values are entered in 1920, 1944, and 1948.	6.18	2.81
PERSON	PERSON=1 if the president is a candidate for reelection, 0 if not, only President Ford is not scored as an incumbent (Fair 2002).	0.64	0.49
DURATION	DURATION=0 if the party occupying the White House has been in office for one term, 1 if it has been in the White House for two consecutive terms, 1.25 if three consecutive terms, 1.50 for four consecutive terms (Fair 2002).	0.68	0.61

Table 1. Variable Definitions, Measurements, and Descriptive Statistics, 1916-2000 (continued)

VARIABLE	DEFINITION AND MEASUREMENT	MEAN	S.D.
PARTY	PARTY=1 if the Democrats occupy the White House, and -1 if the Republicans are the incumbents (Fair 2002).	0.09	1.02
WAR	"WAR= 1 for the elections of 1920, 1944, and 1948 and 0 otherwise" (Fair 2002).	0.14	0.35
WARONVOTE	WARONVOTE = 1 for the elections of 1920, 1944, 1952; -1 for the elections of 1924, 1948, 1956; and 0 in all other years.	0.00	0.52
SHIFT	Years where a permanent or, as in WWII, a temporary shift in the support schedule (S) occurred, as shown in Figure 5. SHIFT=1 in 1936, 1944, 1956, 1964, and 1972, and 0 otherwise.	0.23	0.43
F	Federal expenditures as a percent of GNP (through 1960) or as a percent of GDP (1964-2000) F= Federal Outlays x 100 GNP (or GDP)	16.28	9.39
F1	Arithmetic change in F between election years: $F1= F_t - F_{t-1}$, where t=election year and t-1=previous election year	0.76	10.81
F2	Arithmetic change in F1 between election years: $F2=F1_t - F1_{t-1}$, where t=election year and t-1=previous election year	-0.06	19.23
FISCAL	Fiscal policy: expansionary (1) or cutback (-1): FISCAL = 1 if F1≥0 *and* F2 ≥0 FISCAL= -1 if F1<0 *or* F2<0. FISCAL=0 if F1=0 *and* F2=0[a]	-0.18	1.0
FISCAL44	FISCAL44=FISCAL, except that FISCAL44=0 in 1944	-0.23	0.97

Table 2.a. Election Outcome by Fiscal Policy, 1872-2000

OUTCOME	FISCAL POLICY		
	CUTBACK	EXPANSIONARY	Total
Victory	18	2	20
Defeat	4	9	13
Total	22	11	33

Percent correctly predicted: 82%
ρ= 0.001 (Fisher's exact test).

Table 2.b. Election Outcome by Fiscal Policy, 1916-2000

OUTCOME	FISCAL POLICY		
	CUTBACK	EXPANSIONARY	Total
Victory	12	2	14
Defeat	1	7	8
Total	13	9	22

Percent correctly predicted: 86%
ρ= 0.002 (Fisher's exact test).

Table 3. The effect of fiscal variables on the vote, 1916-2000
(t-statistics in parenthesis)

	FISCAL VARIABLE				
VARIABLE	F	F	F1	FISCAL	FISCAL
GROWTH	0.62 (5.35)	0.73 (7.21)	0.45 (4.11)	0.58 (6.04)	0.66 (8.10)
ALLPRICES	-0.26 (-1.56)		-0.45 (-2.81)	-0.15 (1.02)	
ALLNEWS	0.72 (3.47)	0.75 (3.50)	1.02 (4.57)	0.76 (4.25)	0.88 (5.24)
DURATION	-2.74 (-2.80)	-2.60 (-2.55)	-3.80 (-4.31)	-2.14 (-2.43)	-2.43 (-2.86)
PARTY	-1.53 (2.80)	-1.67 (-2.96)	-2.15 (-3.86)	-2.17 (-4.08)	-2.68 (-5.88)
SHIFT	3.10 (2.09)	3.06 (1.97)	3.51 (2.62)	1.88 (1.52)	
WARONVOTE	-2.57 (-2.28)	-2.81 (-2.39)	0.94 (0.53)	-1.39 (-1.26)	
F	-0.12 (1.80)	-0.13 (-1.91)			
F1			-0.24 (-2.74)		
FISCAL				-1.96 (-3.01)	-2.60 (-4.95)
INTERCEPT	51.42 (28.76)	50.02 (30.82)	49.60 (31.77)	48.44 (29.85)	47.48 (36.09)
SEE	2.22	2.33	1.98	1.90	1.97
R square	0.94	0.93	0.95	0.95	0.94
Adj. R square	0.898	0.89	0.92	0.93	0.92
D.W.	2.72	2.68	1.95	2.55	2.01
1st order auto-	-0.36	-0.34	-0.02	-0.31	-0.03
N	22	22	22	22	22

Table 4. Fiscal Model, Adjusted and Unadjusted for WWII, Compared to Fair's Model
1916-2000 and 1916-1960
(t-statistics in parenthesis)

VARIABLE	I.1	I.2	II.1	II.2	III.1	III.2
GROWTH	0.69 (6.72)	0.81 (7.9)	0.66 (8.10)	0.62 (9.15)	0.66 (7.72)	0.62 (8.09)
INFLATION	-0.78 (-2.70)	-0.48 (-1.34)				
GOODNEWS	0.84 (3.12)	0.70 (2.9)				
ALLNEWS			0.88 (5.24)	0.72 (5.75)	0.75 (4.30)	0.50 (4.12)
PERSON	3.24 (2.50)	5.2 (4.3)				
DURATION	-3.63 (-3.04)	-2.08 (-2.34)	-2.43 (-2.86)	-1.45 (-2.12)	-2.68 (-3.07)	-1.50 (-2.19)
PARTY	-2.71 (-4.64)	-3.58 (-6.22)	-2.68 (-5.88)	-2.72 (-7.37)	-2.68 (-5.57)	-2.84 (-7.68)
WAR	3.85 (1.46)	3.88 (1.72)				
FISCAL			-2.60 (-4.95)	-3.07 (-6.25)		
FISCAL44					-2.58 (-4.54)	-3.32 (-6.21)
INTERCEPT	49.61 (18.08)	47.36 (21.88)	47.48 (36.09)	48.1 (41.73)	48.33 (36.39)	49.35 (46.63)
SEE	2.37	1.47	1.97	1.11	2.07	1.12
R square	0.92	0.99	0.94	0.99	0.93	0.99
Adj. R square	0.89	0.96	0.92	0.98	0.91	0.98
D.W.	2.64	1.31	2.01	1.85	2.02	1.73
1st order auto-	-0.34	0.11	-0.03	0.06	-0.03	0.07
N	22	12	22	12	22	12

Table 4 Fiscal Model, Adjusted and Unadjusted for WWII, Compared to Fair's
(continued)

Notation:

I.1 Fair's model: VOTE2 = GROWTH + INFLATION + GOODNEWS+ PERSON + DURATION + PARTY + WAR, estimated over the 1916-2000 period.
I.2. Fair's model, estimated over the 1916-1960 period.
II..1 The fiscal model: VOTE2 = FISCAL + GROWTH + ALLNEWS + DURATION + PARTY estimated over the 1916-2000 period.
II.2. The fiscal model, estimated over the 1916-1960 period.
III.1. The fiscal-war model. Same as Model II, except that fiscal policy is neutralized in 1944; thus, FISCAL44 is entered instead of FISCAL; estimated over the 1916-2000 period.
III.2. The fiscal-war model, estimated over the 1916-1960 period.

Table 5 Actual vs. Predicted Vote: Fair's model, fiscal model, and fiscal-war model (out-of-sample predictions)

YEAR	VOTE2	I	II	III
1916	51.68	50.51	51.43	52.04
1920	36.12	47.37	36.96	36.90
1924	58.24	56.42	59.59	58.75
1928	58.82	57.07	59.78	59.33
1932	40.84	34.94	36.55	36.56
1936	62.46	64.42	63.15	62.75
1940	55.00	56.05	54.24	53.74
1944	53.77	51.598	54.96	57.52
1948	52.37	***49.06***	***49.00***	***48.76***
1952	44.60	44.24	43.49	43.03
1956	57.76	57.07	55.89	56.09
1960	49.91	***52.11***	49.77	49.74
1964	61.34	60.97	59.08	58.54
1968	49.60	***50.38***	49.14	48.78
1972	61.79	58.59	59.89	60.28
1976	48.95	48.96	***51.93***	***52.06***
1980	44.70	46.46	***50.93***	***51.18***
1984	59.17	63.17	57.67	57.35
1988	53.90	50.61	55.79	55.89
1992	46.55	***55.12***	48.19	48.57
1996	54.74	53.23	52.12	52.53
2000	50.30	***48.58***	52.52	52.12

Table 5 Actual vs. Predicted Vote: Fair's model, fiscal model, and fiscal-war model
(out-of-sample predictions)
(continued)

	I	II	III
Largest error	+11.25 (1920)	+6.23 (1980)	+6.48 (1980)
Mean absolute error	2.7	1.84	1.97
SD of error	2.74	1.43	1.55
Forecast Rate	77.3%	86.4%	86.4%

Notation:

I. Fair's model: VOTE2 = GROWTH + INFLATION + GOODNEWS+ PERSON + DURATION + PARTY + WAR, estimated over the 1916-2000 period.
II. The fiscal model: VOTE2 = FISCAL + GROWTH + ALLNEWS + DURATION + PARTY estimated over the 1916-2000 period.
III. The fiscal-war model. Same as Model II, except that fiscal policy is neutralized in 1944; thus, FISCAL44 is entered instead of FISCAL; estimated over the 1916-2000 period.
Bold, italicized predicted VOTE2: a prediction that is contrary to outcome of the two-party vote, i.e., it predicts a win for the incumbents when they lost the two-party vote, or vice-versa.
Forecast rate: Percent of elections corrected called a win or loss for the incumbents in the two-party vote.

Table 6. Forecasts for 1964-2000 based on 1916-1960 estimate of the model: Fair's model and fiscal model (adjusted and unadjusted for war). (See Table 4 for model estimates.)

YEAR	VOTE2	I	II	III
1964	61.34	59.52	58.79	57.94
1968	49.60	49.19	49.02	48.29
1972	61.79	61.59	60.54	61.27
1976	48.95	***51.29***	***51.66***	***51.83***
1980	44.70	45.82	49.82	***50.09***
1984	59.17	63.72	56.93	56.26
1988	53.90	52.05	56.70	57.39
1992	46.55	***55.15***	48.74	49.35
1996	54.74	52.96	52.99	53.49
2000	50.30	***47.10***	53.02	52.79
F.R.		70%	90%	80%

Notation:

I.. Fair's model: VOTE2 = GROWTH + INFLATION + GOODNEWS+ PERSON + DURATION + PARTY + WAR.
II. The fiscal model: VOTE2 = FISCAL + GROWTH + ALLNEWS + DURATION + PARTY.
III The fiscal-war model. Same as Model II, except that fiscal policy is neutralized in 1944; thus, FISCAL44 is entered instead of FISCAL.
Bold, italicized predicted VOTE2: a prediction that is contrary to outcome of the two-party vote, i.e., it predicts a win for the incumbents when they lost the two-party vote, or vice-versa.
FR: forecast rate: Percent of elections corrected called a win or loss for the incumbents in the two-party vote.

Table 7. Competing 2004 Vote Forecasts as of February Economic Forecasts

MODEL	Model SEE	Forecast	Prediction Interval	Comment
I. Fair model	2.37	58.7	± 6.05 at 95%	Victory "by a sizable margin" (Fair, 2004). The prediction interval, though wide, falls wholly on the side of victory.
II. Fiscal model	1.97	52.2	± 4.97 at 95%	Point prediction is just outside the margin of error, indicating an incumbent victory in a very close race. However, the prediction interval straddles the victory/defeat divide, so failure to win reelection is by no means unlikely.
III. Fiscal-war model.	2.07	55.2	± 4.87 at 95%	Victory by a comfortable margin. The prediction interval falls wholly on the side of victory.

Assumptions:

I. Fair model: GROWTH = 3.0 percent; INFLATION = 1.9 percent; GOODNEWS = 3; PERSON = 1; DURATION = 0; PARTY = -1; WAR = 0.
II. Fiscal model: FISCAL = 1; GROWTH = 3.0; N2002 = 3; DURATION = 0; PARTY= -1.
III. Same as II, except that FISCAL44 = 0 in 1944 and 2004.

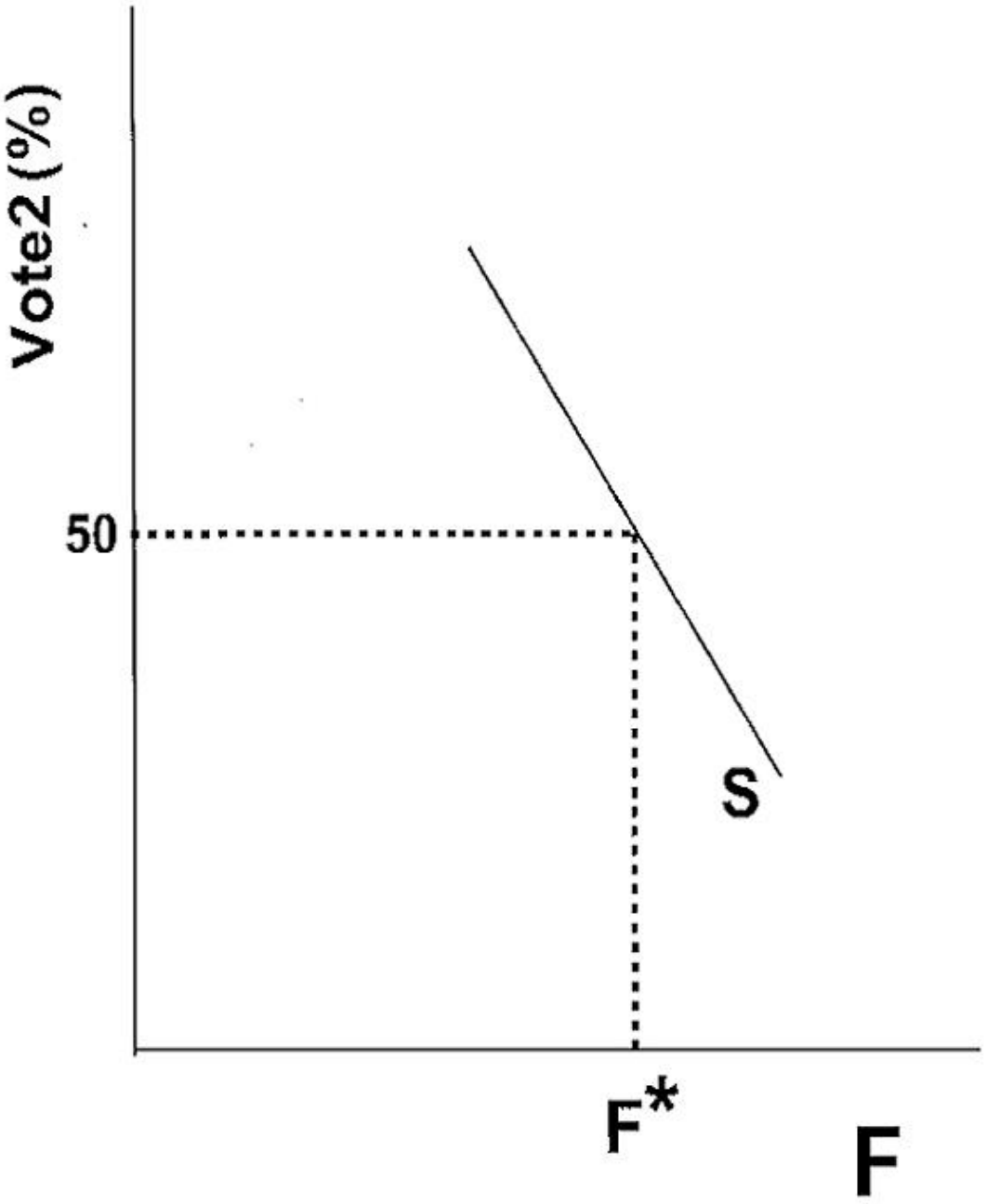

Figure 1

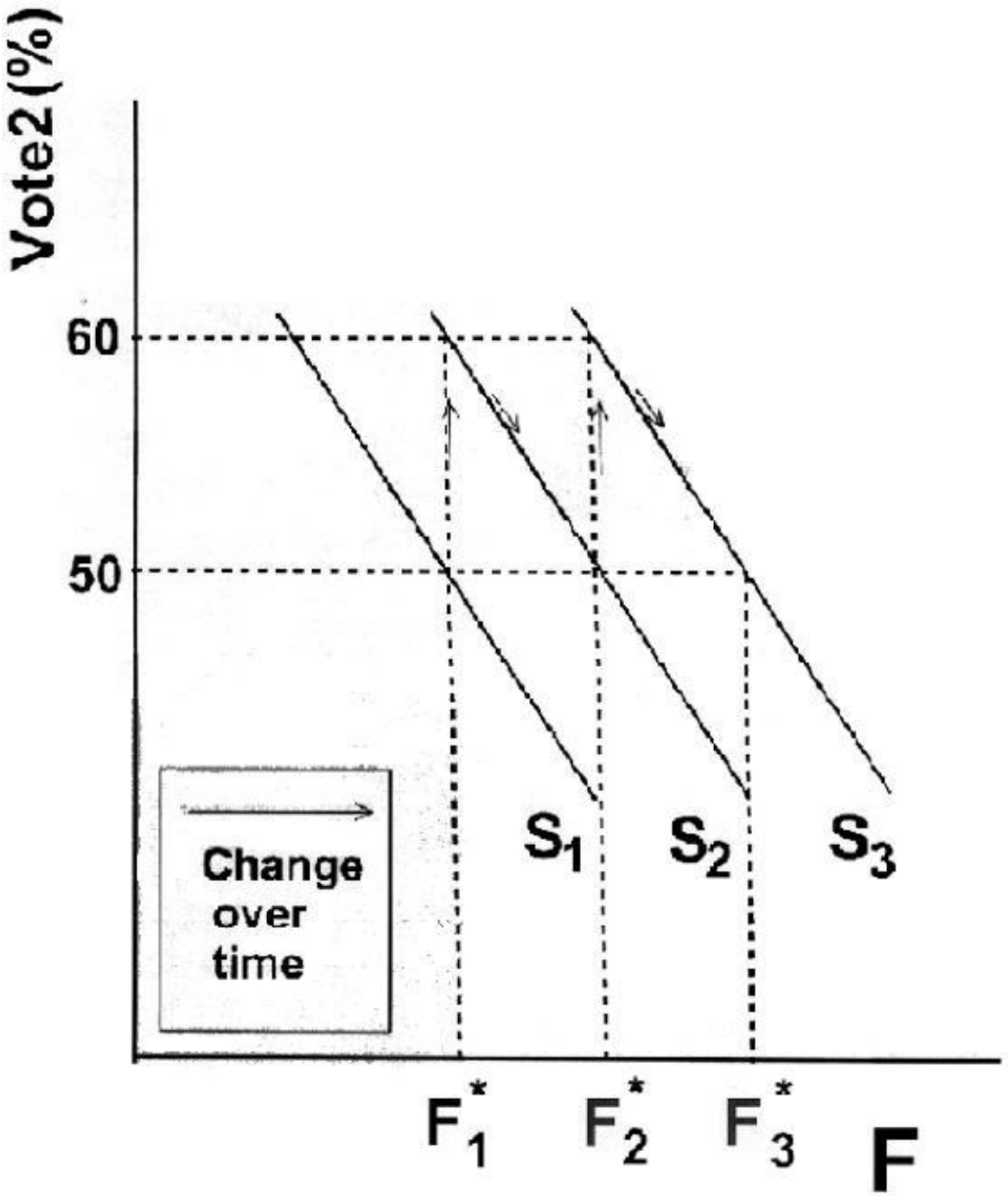

Figure 2

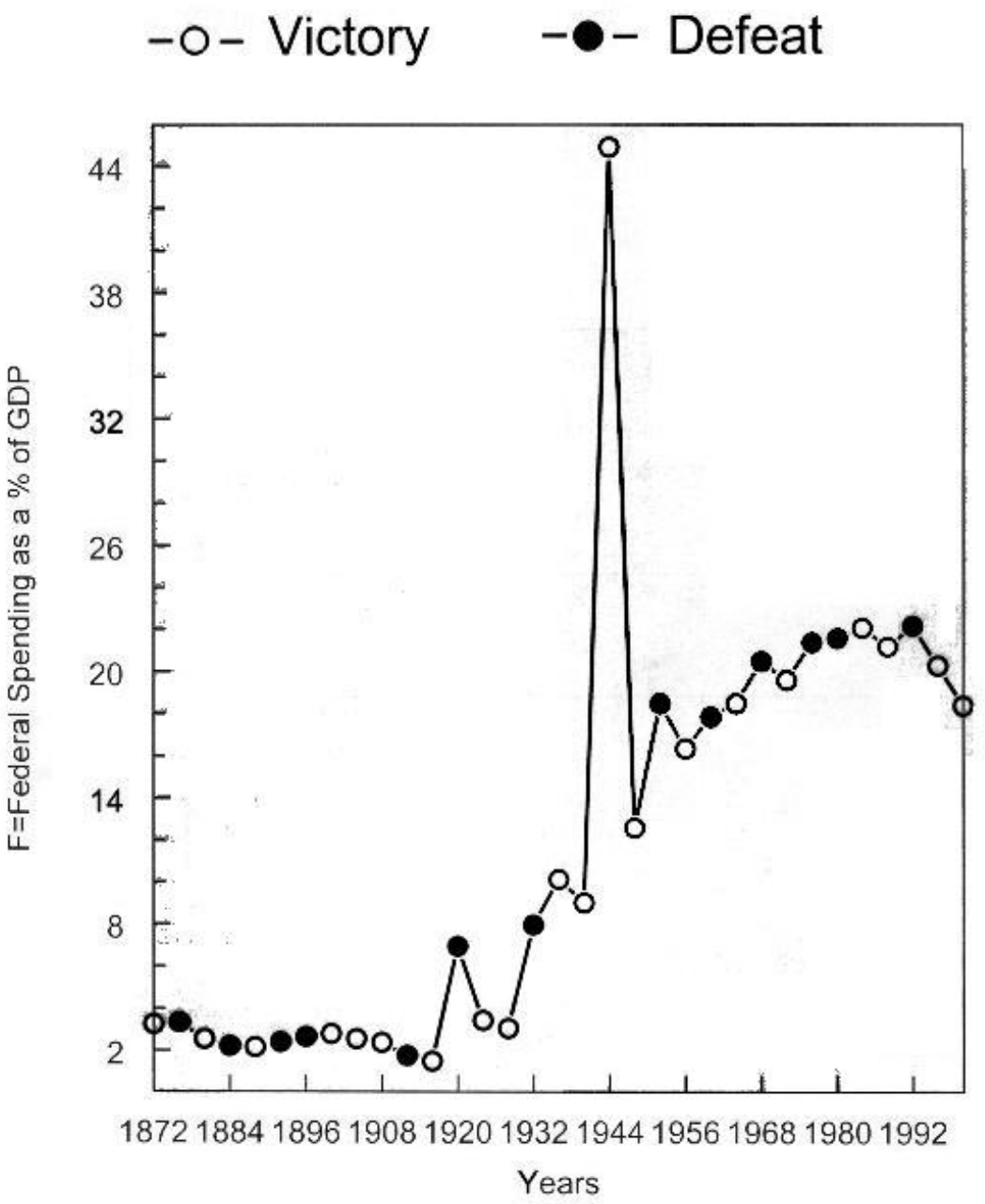
-○- Victory
-●- Defeat
F=Federal Spending as a % of GDP
44
38
32
26
20
14
8
2
1872 1884 1896 1908 1920 1932 1944 1956 1968 1980 1992
Years

Figure 3

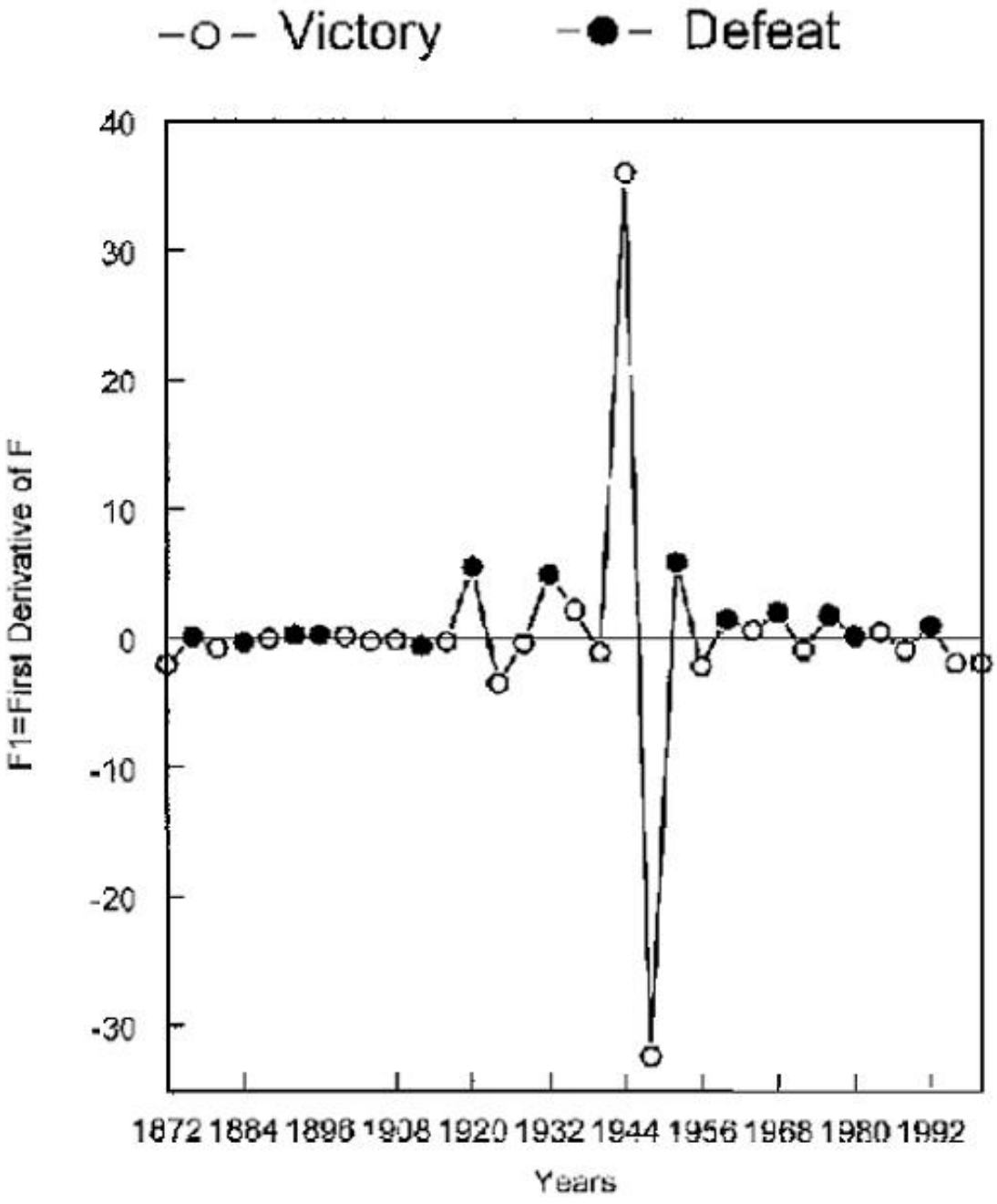
Victory
Defeat
40
30
20
10
0
-10
-20
-30
F1=First Derivative of F
1872 1884 1896 1908 1920 1932 1944 1956 1968 1980 1992
Years

Figure 4

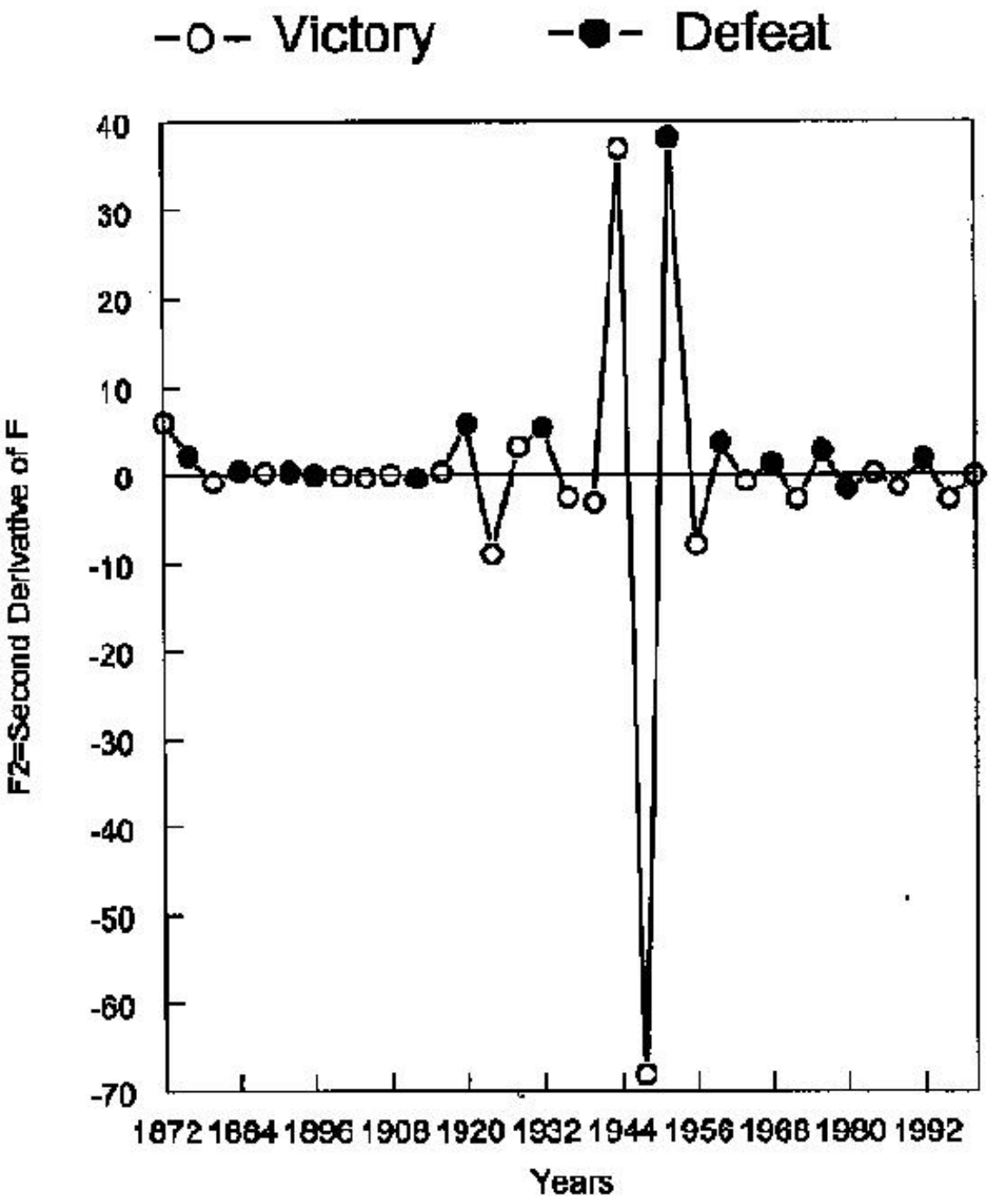
-o- Victory
-●- Defeat
F2=Second Derivative of F
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
1872 1884 1896 1908 1920 1932 1944 1956 1968 1980 1992
Years

Figure 5

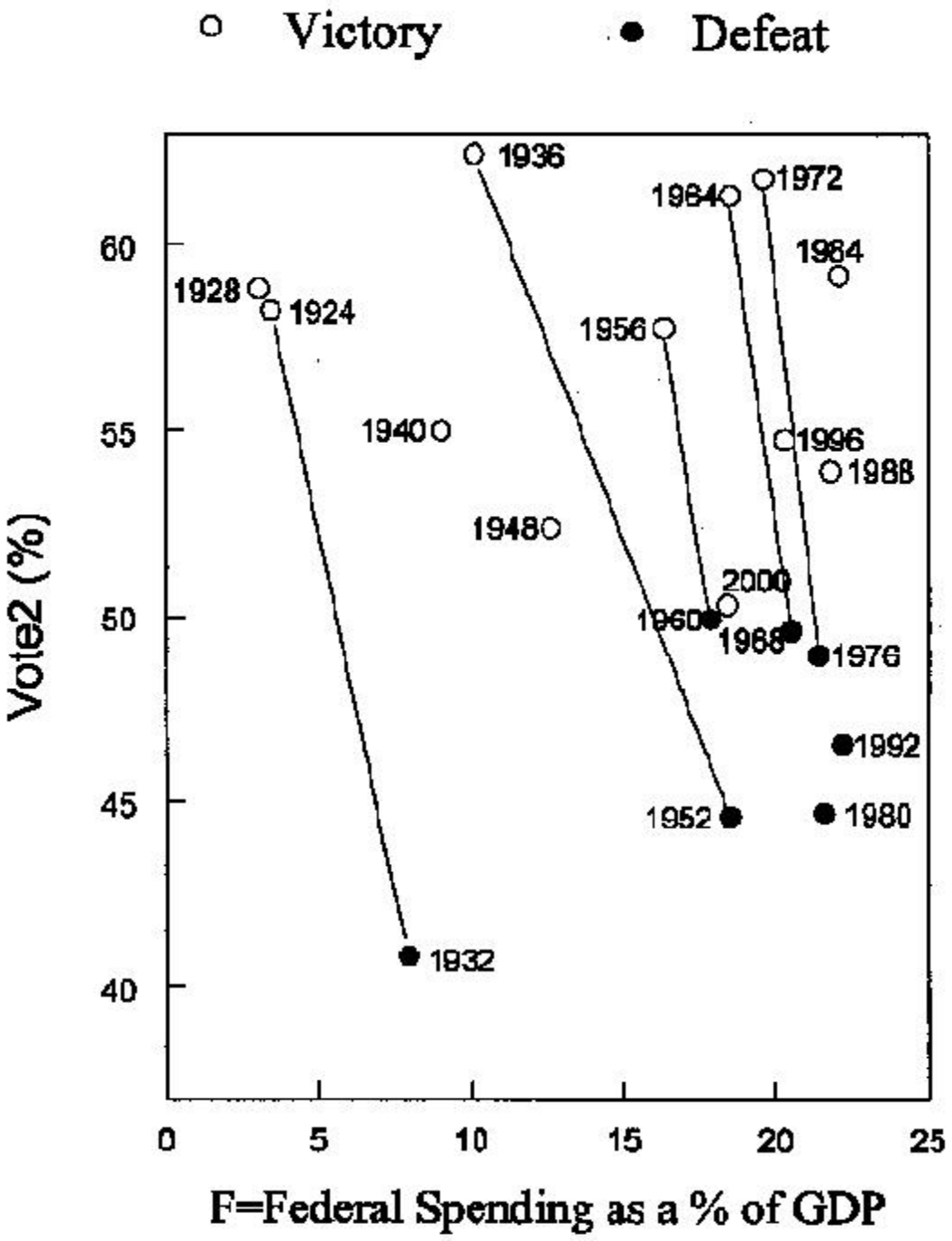
Victory
Defeat
Vote2 (%)
60
55
50
45
40
0
5
10
15
20
25
1936
1928
1924
1940
1948
1932
1952
1956
1960
1964
1972
1964
1996
1988
2000
1968
1976
1992
1980
F=Federal Spending as a % of GDP

Figure 6

DATA APPENDIX[a]

Year	F	F1	F2	FISCAL	VOTE2	VICTORY[c]
1872	3.26	-2.08	5.93	-1	56.00	1
1876	3.35	0.09	2.17	1	48.00	-1
1880	2.55	-0.80	-0.89	-1	50.22	1
1884	2.22	-0.33	0.47	-1	49.85	-1
1888	2.16	-0.06	0.27	-1	50.41	1
1892	2.41	0.25	0.31	1	48.27	-1
1896	2.65	0.24	-0.01	-1	47.76	-1
1900	2.79	0.14	-0.10	-1	53.17	1
1904	2.55	-0.24	-0.38	-1	60.01	1
1908	2.38	-0.17	0.07	-1	54.48	1
1912[b]	1.75	-0.63	-0.46	-1	54.71	-1
1916	1.48	-0.27	0.36	-1	51.68	1
1920	6.95	5.47	5.74	1	36.12	-1
1924	3.43	-3.52	-8.99	-1	58.24	1
1928	3.05	-0.38	3.14	-1	58.82	1
1932	7.96	4.91	5.29	1	40.84	-1
1936	10.13	2.17	-2.74	-1	62.46	1
1940	9.02	-1.11	-3.28	-1	55.00	1
1944	44.93	35.91	35.90	1	53.77	1
1948	12.61	-32.32	-68.23	-1	52.37	1
1952	18.49	5.88	38.20	1	44.60	-1
1956	16.35	-2.14	-8.02	-1	57.76	1
1960	17.85	1.50	3.64	1	49.91	-1
1964	18.50	0.65	-0.85	-1	61.34	1
1968	20.50	2.00	1.35	1	49.60	-1
1972	19.60	-0.90	-2.90	-1	61.79	1
1976	21.40	1.80	2.70	1	48.95	-1
1980	21.60	0.20	-1.60	-1	44.70	-1
1984	22.10	0.50	0.30	1	59.17	1
1988	21.20	-0.90	-1.40	-1	53.90	1
1992	22.20	1.00	1.90	1	46.55	-1
1996	20.30	-1.90	-2.90	-1	54.74	1
2000	18.40	-1.90	0.00	-1	50.27	1
2004*	19.90	1.50	1.50	1		

DATA APPENDIX
(continued)

Notes:

a. For data on Fair's variables, see Fair (2002), available at http://fairmodel.econ.yale.edu.

b. See Table 1 for Fair's calculation of incumbents' vote in 1912. We do not regard it as an incumbent victory in the popular vote.

c. VICTORY refers to the outcome of the two-party vote for president, not to formal election by the Electoral College. Historically, there have been three times when the two results did not match: 1876, 1888, and 2000. All of them, incidentally, favored the Republicans.

* The value of F for 2004 is a projection that assumes no change from the 2003 value.

Sources.

For fiscal data: F as a percent of GNP (through 1960) is calculated from data in B. R. Mitchell, *International Historical Statistics. The Americas, 1750-1988*; F as a percent of GDP (1964-2000) is available in Congressional Budget Office, *The Budget and Economic Outlook, Fiscal Years 2004-2013*, Appendix F, Table 6, "Outlays by Major Spending Category, 1962-2002," available at http://www.cbo.gov/showdoc.cfm?index=1821&sequence=0#table6

For VOTE2, and all variables borrowed from Ray Fair, the source is Ray Fair, "The Effect of Economic Events on Votes for President: 2000 Update,' November 1, 2002, Presidential Vote Equation, Fair Model Site, http://fairmodel.econ.yale.edu/RAYFAIR/PDF/2002DHTM.HTM.