FISCAL POLICY AS AN EXPLANATORY AND FORECASTING FACTOR IN AMERICAN PRESIDENTIAL ELECTIONS

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Abstract

Alone among presidential elections models, the fiscal model includes a measure of federal spending policy as one of its predictor variables. The model, the first version of which was published more than two decades ago (Cuzán and Heggen 1984), made its debut as a tool of real time (i.e., ex ante) forecasting in 2004, its August forecast coming within 0.1% of the actual share of the two-party vote going to the incumbents. That was one of the best showings that year (Campbell, 2005; Cuzán and Bundrick 2004, 2005).

In this paper we do three things. First, we present a theoretical justification for the fiscal model and address three common objections to the reasoning behind it. To avoid interrupting the presentation, however, we place the objections and our replies in Appendix I. Second, we compare the structure and performance of the fiscal model with those of three better known presidential elections forecasting models, to wit: Abramowitz's time-for-change model, Campbell's trial-heat model, and Fair's presidential vote equation. We show that the fiscal model performs as well or better than those three and, furthermore, that fiscal policy appears to be an implicit factor in both Abramowitz's and Campbell's models. Finally, we conclude with a tentative forecast of the Republican share of the two-party vote in the next presidential election.

Prepared for presentation at the 2006 meeting of the American Political Science Association, Philadelphia, September 2.

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In this paper we argue that fiscal policy functions as an important explanatory and forecasting factor in American presidential elections. We begin with a brief review of the very thin literature on the relationship between federal spending and presidential elections. Next, we present the theory and evidence supporting the fiscal model. Then we compare its performance first with Ray Fair's presidential vote equation, from which the fiscal model borrows three variables, and then with Abramowitz's and Campbell's presidential forecasting models, in which fiscal policy appears to be an underlying factor.

Spending and Votes: A Hypothesis

Unless we have missed an earlier publication, it appears that William Niskanen was the first to report a negative relationship between federal spending and presidential elections. He found that between 1896 and 1972, controlling for economic conditions, whether the incumbent was making a bid for another term, and war years, "A ten percent increase in real per capita federal expenditures over the four years between elections appears to reduce the popular vote for the candidate of the incumbent party by around .8 percent" (Niskanen 1975: 631). The relationship was even stronger with revenues. Niskanen concluded that "the marginal value of the aggregate package of federal services appears to be nearly zero" (Niskanen 1979: 111). Consistent with Niskanen's finding, in a study of post-World War II elections Peltzman inferred "that voters are treating the marginal dollar of federal spending as essentially worthless." *Pace* Niskanen, however, he concluded that "the one statistically reliable bad is spending, not taxes" (1992: 338, 340). More recently, Geys and Vermeir (2005) found that "the president is punished for higher spending, whether spending is financed by taxes or deficits. The electorate thus appears to grasp the fact that higher government expenditures entail an increasing burden on the taxpayer, now or in the future" (2006, 12).

These studies on the effect of fiscal policy on incumbent popularity suggest a model of American presidential elections in which other things equal, a retrospective-minded electorate holds the incumbents responsible for increases in taxes and expenditures, the bulk of which are financed out of taxes or borrowing, which commits future taxes, something the electorate recognizes. Viewed in this light, Washington delivers real goods and services, but only at a cost. This cost is measured by the amount or share of the public's money that is spent.[1] Being economy-minded, voters reward

[1] See Appendix I for our response to an objection, frequently made, that expenditures represent not the cost of government but its benefits.

incumbents for keeping this cost down, and punish them when they do not. In the next section, we offer our own version of the spending hypothesis, the fiscal model.

The Fiscal Model: Theory

The fiscal model is built on the assumption that a downward-sloping support function (S) describes the relationship between federal spending, F, measured as a fraction of Gross Domestic Product (GDP), and the percent of the two-party vote going to the party occupying the White House, VOTE2. This is illustrated in Figure 1. There it is assumed that at any one time and given any level of government spending, other things being equal increasing the share f GDP spent by Washington reduces the percent of the two-party vote going to the president or his party's candidate.

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Figure 1 about here
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The intuition takes either of two paths, both ending at the same place. One proceeds by analogy from economics, viewing F as a price or fee which the federal government charges the economy for its goods and services. The higher the federal fee charged, the lower the support which the incumbents draw from the electorate.

The second path is borrowed from F. A. Hayek (1994, 67-68). In *The Road to Serfdom*, he wrote:

> The limits of [the state] are determined by the extent to which the individuals agree on particular ends; and the probability that they will agree on a particular course of action necessarily decreases as the scope of such action extends. There are certain functions of the state on the exercise of which there will be practical unanimity among its citizens; there will be others on which there will be agreement of a substantial majority; and so on, until we come to fields where, although each individual might wish the state to act in some way, there will be almost as many views of what the government should do as there are different people.

Whichever explanation makes the most sense, the conclusion is the same. As F rises, support for the incumbents goes down.

Having laid out what might be viewed as the "demand" side of the fiscal model, we now turn to the "supply" side. It is assumed that the president (who acts as the equivalent of Chairman of the Board and Chief Executive Officer of his political party) wishes to maximize spending relative to reelection. The incumbents have several incentives to spend more. For one thing, inertia exerts considerable force. Any reduction in spending or merely its rate of growth will be resisted by some interest group or section of the bureaucracy, who can rely on their congressional sponsors and like-minded

members of the media to spin the policy change in the worst possible light.[2] Even Renaissance princes appear to have been sensitive to some version of this criticism, since, as we shall see, Machiavelli felt compelled to address it. More positively, a president uses new money to reorder national priorities, to accomplish some great enterprise that will become his legacy, or, in the worst of cases, simply to indulge his whims at taxpayers' expense.

Even as they appreciate the advantages of a growing budget, however, the incumbents also desire to stay in office. This is analogous to Machiavelli's axiom that a prince wishes "to maintain himself in his state" (Machiavelli 1997: 6). Most presidents (and, along with them, members of their team) derive utility from occupying the White House and, what is perhaps just as important, they dread the humiliation of being rejected at the polls. Therefore, yielding to bureaucrats, legislators, interest groups, and his own appetite for spending, every president propels budgetary growth, but only up to a point. That point is the maximum that can be spent compatible with reelection. Put differently, presidents seek to maximize spending subject to a reelection constraint. They aim to manage the biggest budget to which voters will consent.

Given these assumptions, it follows that in a two-party system the budget expands until it approximates F* in Figure 1. That is the point where the support function S intersects the 50 percent plus one of the two-party vote "parallel." F* is the equilibrium level of expenditures. At F*, the size of the federal budget (again, relative to the economy) is equal to that which a bare majority of the voters will support. Put differently, it is the highest fiscal fee that the governing party can charge without its being "fired" by the electorate.[3]

Thus, just as in economic theory the equilibrium price clears the market, solving the problem of how much of a particular commodity to produce, so in the fiscal model F* solves the spending problem. At the equilibrium price, the quantity supplied and the quantity demanded are in balance or at rest. Similarly, at F* the president and a bare majority of the electorate are in agreement on how big the federal budget ought to be. Theoretically, this point is stable. Deviations from F* are self-correcting, with presidents adjusting the size of the budget in response to election returns.

The support function is not static. It may shift forward, toward greater support or tolerance for expenditures on the part of the electorate, or backward, toward greater

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[2] Ron Haskins (2006) of the Brookings Institution recently recounted the terms in which the 1996 Welfare Reform Bill was attacked in congress and in the press. The bill was "harsh," "cruel" and "mean-spirited." It was said that it "'attacked,' 'punished' and 'lashed out at' children," that it was "a 'jihad' against the poor, made 'war on kids' and 'deliberately inflict[ed] harm' on children and the poor." It was predicted that "a million children" would be thrown into poverty, "reduced to 'begging for money, begging for food, and . . . engaging in prostitution'."

[3] It follows that, other things being equal, in an electoral system where only a plurality is required to win office, as in many multi-party systems, F* will be of a larger magnitude than in a two-party system.

resistance to budgetary growth. This is shown in Figure 2. Assume the starting point to be F*1 at period t1. Suppose, further, that in the next period the public becomes more homogeneous in its opinions of what it wants from government or that it backs additional spending to finance a greater quantity or a higher quality of federal goods and services. This is represented by a forward shift in the support function from S1 to S2, where it intersects the 50 percent parallel further to the east.[4] This results in the reelection of the incumbents with, say, 60 percent of the two-party vote. Flushed with what in the United States is a landslide victory, the president promotes budget growth. As spending increases, VOTE2 shrinks back, to 50 percent at F*2.

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Figure 2 about here
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Shifts in the support schedule render F* a fleeting object. This presents two problems. One, a practical one faced by presidents, is that they are never sure just how much more can be spent without losing their lease on 1600 Pennsylvania Avenue. They may surmise, probably correctly, that there may be endogenous as well as exogenous sources of shifts in the support schedule. That is, that there is something they themselves can do to shift it forward. Since they wish to maximize spending subject to a reelection constraint, they will seek to convince the public that additional expenditures are justified. Not being the type to sell themselves short or under-estimate their persuasive abilities, they risk spending too much, which will cost them the next election.

The other problem is an academic one. That F* shifts means that no simple test will demonstrate the fundamental theoretical relationship illustrated in Figure 1. More than likely, the best we will be able to observe, once appropriate controls are introduced, is a relationship between short-term changes in spending and votes. As we show in the next section, the data itself suggest the construction of a variable for measuring just that.

The Fiscal Model: Initial Specification

Figure 3 displays the relationship between F, viewed along the vertical axis, and victory (white dots) or defeat (black dots) in the two-party vote for president (ignoring the Electoral College) across 34 American presidential elections held since 1872. The height of the line connecting the dots, what we call the F-line, tracks the ratio of federal outlays to GDP. As surmised at the end of the previous section, at first glance there appears to be no relationship between this ratio and election outcome. Incumbents are returned to the White House at any value of F (recall Figure 2). However, examining the *turns* of the F-line, a relationship emerges. Most of the time, clockwise turns, generally representing

[4] 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.

decreases or decelerations in spending, 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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Figure 3 about here
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These turns in the F-line are quantified by the variable FISCAL. This is a composite metric derived from the first and second derivatives of F. (For specification of this and other variables used in this paper, see Table 1).[5] FISCAL takes two values, expansionary (+1) or cutback (-1). Theoretically it could take the value of zero, representing a steady-state fiscal policy, but historically this has never happened (see Appendix II).

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Table 1 about here
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In Table 2 we show the bivariate relationship between FISCAL and ELECTION (a simple win or loss for the incumbents in the popular vote for president between 1872 and 2004, ignoring the Electoral College). The relationship is strong and statistically significant, with about 80% of 34 cases behaving as expected.

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Table 2 about here
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FISCAL is also correlated with the percent of the two-party vote going to the incumbents (VOTE2). Regressing VOTE2 on FISCAL over the same period, but excluding the 1912 election, when the Republican Party split,[6] yields the model shown in the second column of Table 3. Note that a shift in fiscal policy from cutback to expansionary costs the incumbents 6% of the two-party vote. (FISCAL takes only two values, -1 and 1, so to estimate its effect on VOTE2 one multiplies the value of its coefficient by two.) The relationship is strong and highly significant ($\rho = 0.004$).

However, as might be expected from a such a simple model, the standard error of the estimate is large. To make the model useful for forecasting, one needs to incorporate additional variables measuring other well-established influences on presidential elections.

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[5] For our justification for using this variable instead of a continuous one, see Appendix I.

[6] The incumbent was William H. Taft. His predecessor, Theodore Roosevelt, also a Republican, broke with the party, running as the candidate of the Progressive or "Bull Moose" Party. As a result, Democrat Woodrow Wilson won the race. Other researchers, (e.g., Fair 1998), have combined the Taft and Roosevelt's totals. This yields a counter-factual incumbent victory. Here we've chosen to omit the election altogether.

In the next section, we specify a complete fiscal model consisting of five variables. Then we compare its performance with Fair's presidential vote equation, from which we have adapted two measures of economic growth and one of time in the White House.

The Fiscal Model and Fair's Presidential Equation Compared

At least as early as Kramer's pioneering article (1971), it's been known that economic growth exerts an important electoral effect. However, judging from the variety of measures incorporated into competing elections models, no consensus has been reached on any single measure or set of measures. (Compare the metrics used by Abramowitz 2004, Campbell 2004, Lewis-Beck and Tien 2004, and Wlezien and Erikson 2004). Conveniently, Fair (2002) includes two growth metrics in his model for which he has posted data going back to 1880. These are the real per capita GDP growth rate in the third quarter of the election year (GROWTH) and the number of quarters during the first 15 quarters of the presidential term when growth exceeded 3.2% (GOODNEWS). We have incorporated both measures into the fiscal model. Be it noted, however, that Fair zeroes out the values of the latter variable during three "war" years (1920, 1944 and 1948). Seeing no reason to do that, we enter the actual values, which Professor Fair kindly e-mailed to us, and label the variable ALLNEWS.

There's also evidence that the number of consecutive terms in the White House (Abramowitz 2004, Fair 2002) and the president's party (Alesina and Rosenthal 1996, Fair 2002) influence the vote. The latter is straightforward, but again, there's more than one way to measure the former. Abramowitz uses TERM, a binary variable that takes the value of 0 in the first term and 1 in all subsequent terms. Fair uses DURATION, a more fine-grained variable that takes the value of 0 in the first term, 1.00 in the second term, and then increments by 0.25 every additional term after that. In testing, we have found that Fair's variable performs better over the entire data series but Abramowitz's does better in the more recent period. Since we borrowed two economic measures from Fair, we opted for DURATION.

Other influences that have been found to affect the vote are inflation (Fair 2002), whether the president is running for re-election (Campbell 2004, Fair 2002, Peltzman 1992), and war (Fair 2002, Niskanen 1975). But as we shall see presently, none of these turn out to be statistically significant when included in the fiscal model described in the following equation:

$$\text{VOTE2} = A + b1\,(\text{FISCAL}) + b2\,(\text{GROWTH}) + b3\,(\text{ALLNEWS}) + b4\,(\text{DURATION}) + b5\,(\text{PARTY}) + E,$$

where all variables are defined and measured as shown in Table 1, A = constant (intercept), b1, . . . , b5 are coefficients, and E is an error term. (Again, see Table 1 for definitions and measurement.)

In Table 3, column 3, this model is estimated over the 1880-2000 period (again, with the 1912 election omitted). The 2004 election is not included because it was forecast

in real time in August of that year and we will be using this estimation to compare the fiscal model's performance with that of Fair's equation. All variables are highly statistically significant and the model accounts for ¾ of the variance in the dependent variable across 30 elections. To the best of our knowledge, this is the longest series estimated with a model of its kind. Most forecasting models are estimated only since 1948 (Abramowitz 2004, Campbell 2004, Lewis-Beck and Tien 2004, Wlezien and Erikson 2004). Only Fair (2004) and Norpoth (2004) reach into the early 20th century. Note that a switch in fiscal policy from cutback to expansionary costs the incumbents about 5 percent of the two-party vote.

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Table 3 about here
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In column 4 several variables included in Fair's presidential vote equation are added to the fiscal model: ALLPRICES (which is the same as Fair's INFLATION, only the actual values for 1920, 1944, and 1948 are included), PERSON, and WAR (again, see Table 1 for variable definitions and measurement). Note that none of these variables is statistically significant and model fit remains the same.

In column 5 the fiscal model is re-estimated over the 1916-2000 period, which is the series over which Fair calibrates his variables. This yields the best-fitting model, the Adj. R-sq. being over 0.90 and the SEE less than 2.0. All variables are highly statistically significant. Again, note that a change in fiscal policy from cutback to expansionary costs the incumbents 5% of the two-party vote.

Finally in Table 3, in column 6 is displayed our own estimation of Fair's presidential vote equation. Note that it fits the data less well than the more compact fiscal model. Combining FISCAL with four of Fair's variables turns out to yield a better model than Fair's seven-variable equation. With FISCAL in the model, there is no need to include PERSON, INFLATION, or WAR, nor to zero out GOODNEWS during "war" years. In short, FISCAL trumps three of Fair's variables.[7]

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Table 4 about here
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In Table 4, the difference between the actual and the out-of-sample forecasts of VOTE2 made with both Fair's presidential vote equation and the fiscal model are compared. (Fair reports only in-sample forecasts.) The forecasts are made with the models shown in Table 3, estimated over two time periods, 1916-2000 and 1916-1960. The 1964-2004 forecasts made with the 1916-1960 data fall well beyond the scope of both models. But since Fair uses forecasts made with the shorter period as a test against model fitting, we report them here for the purpose of comparison. As may be discerned, whether

[7] It may be objected that the relation between FISCAL and VOTE2 is spurious, a function of economic growth or contraction. See Appendix I for our response.

estimated over the 1916-2000 or the1916-1960 period, the fiscal model outperforms Fair=s equation, yielding smaller errors and a higher forecast rate. When estimated over the shorter period, the fiscal model correctly predicts the outcome of the two-party vote in the presidential elections of 1992, 1996, and 2000, whereas Fair's model missed two of the three elections, erroneously predicting victory for the incumbent in 1992 and defeat in 2000.

But perhaps the most striking difference between the two models has to do with their respective real-time forecasts for 2004. Here we compare the penultimate predictions, issued on or about August 1 (about the time that most other forecasts in the Campbell Collection[8] became available). Whereas Fair's prediction overshot the mark by more than six points, the fiscal model nearly hit the bull's eye.

All things considered, it would appear that judging by the criteria of parsimony, goodness of fit, and forecasting performance, the fiscal model is to be preferred to Fair's presidential vote equation. However, given the paucity of observations to date, this conclusion cannot be but provisional, contingent on the comparative performance of the two models on many more elections to come.

Comparing the Fiscal Model with Abramowitz's and Campbell's Models

Alan Abramowitz's time-for-change model and James E. Campbell's trial-heat model rank among the best performers of the Campbell Collection. In this section we compare these models with the fiscal model, and show that fiscal policy appears to be an implicit factor in the other two.

Estimated over the 14 presidential elections held during the 1948-2000 period, Abramowitz's "time-for-change" model consists of three predictor variables. These are the net presidential approval rating in the last Gallup poll taken in June of the election year (JUNEAPP), real GDP growth during the first half of the election year (FHGDP), and TERM. This last variable, a measure of what Norpoth (1996) calls a "fatigue" factor, is scored 0 if the incumbents are in their first term and 1 if they are in their second or later term (Abramowitz 1988, 2004, 2005).

The most recent version of Campbell's "trial-heat" model also consists of three predictors and is estimated over the same period as Abramowitz's. The first two variables are the incumbent party candidate's share of the two-party vote in the Gallup preference poll taken around Labor Day (TRIALHEAT) and the election year second-quarter GDP growth rate estimate issued by the Bureau of Economic Analysis (2^{nd}QTRGDP). The value of the latter variable is cut in half if the president is not seeking reelection. Therefore, an "incumbency" factor functions as a third variable in the model, adjusting credit or blame for the state of the economy to the in-party's candidate according to

[8] Named after James E. Campbell, the editor or co-editor of several forecasting symposia that have appeared in the *American Politics Quarterly* (October 1996) and in *PS: Political Science and Politics* (March 2001, October 2004, and January 2005). See Cuzán and Bundrick (2005).

whether or not he is the sitting president (Campbell 2004, 2005. For earlier versions see Campbell and Wink 1990 and Campbell and Mann 1992.).

Displayed side by side in Table 5 are the fiscal model, estimated over both the 1916-2000 and, for the sake of comparison, a truncated 1948-2000 period, and our estimates of Abramowitz's and Campbell's models. Note that all three models have a comparable fit with the data, the Adjusted R-sq. being around 0.90 and the SEE about 2.0. In terms of out-of-sample forecasting, in all three models the mean absolute error hovers around 1.75%. In terms of parsimony and real or simulated forecasting accuracy, then, all models perform about equally well.

The fiscal model has two advantages over the other two. First, it is estimated over more elections. Second and more important, unlike Abramowitz's or Campbell's, or indeed any other presidential elections forecasting model, it includes a policy variable. To say to incumbents something like "make sure that the president's job approval rating is high half-way through the election year," or "your candidate needs to be outpolling the opposition no later than Labor Day" is not pregnant with practical counsel. Also, the theoretical value of both Abramowitz's and Campbell's models is limited. This is because most of the variance in the incumbents' share of the vote that is accounted for by each model is contributed by a variable constructed from voter responses to a question asked only a few months before the election. The respective Pearson's r correlations between the percent of the two-party vote going to the incumbent party candidate, on the one hand, and on the other JUNEAPP and TRIALHEAT are 0.79 and 0.86. (The correlation between these two variables is r = 0.73). This begs the question regarding the determinants of the incumbents' popularity.

As noted earlier, Geys and Vermeir (2005) found that spending has a negative impact on the president's approval rating. It is meet, then, to inquire whether FISCAL and its fellow variables can account for the behavior of Abramowitz's JUNEAPP and Campbell's TRIALHEAT. In Table 6 we estimate each of these variables with a combination of determinants from the fiscal model. We regress JUNEAPP on FISCAL, ALLNEWS, and PARTY (column 2) and TRIALHEAT on those variables plus DURATION, since Campbell's model does not control for time in office. Note that 60%-70% of the variation in JUNEAPP and TRIALHEAT is accounted for by three or four of the variables in the fiscal model. As with VOTE2, both respond positively to ALLNEWS and negatively to PARTY (Democrats do less well than Republicans) and fiscal expansion. Of particular interest is the impact of FISCAL: a switch in fiscal policy from cutback to expansionary results in a reduction of 7 points in TRIALHEAT and 25 points in JUNEAPP.

Theoretically, the residuals from both models constitute the portion of variability in JUNEAPP and TRIALHEAT that is not already accounted for by FISCAL and its companions. In Table 6, columns 4 and 5, we display the results of adding these respective residuals to the fiscal model. Neither residual achieves statistical significance at the conventional 0.05 confidence level. Furthermore, the fiscal model is hardly disturbed by the introduction of either variable. In sum, this statistical experiment

suggests that once JUNEAPP and TRIALHEAT are purged of the effects of the fiscal model, their contribution to a model of VOTE2 is marginal.

Given the small number of observations, however, these results must be taken with caution. Fortunately, there is a way of checking model validity, at least to some degree, by replicating the experiments with state-level data.[9] Campbell (1992) and Campbell et al. (2005) extended the trial-heat model to the Democratic share of the two-party vote in the states. Controlling for 13 regional and state-level variables, plus the in-party, incumbency, and GDP growth, they found that the coefficient for TRIALHEAT is correlated with VOTE2 in the same direction and at approximately the same strength as in the national vote model. In effect, Campbell et al. graft a modified version of the trial-heat model onto a model of the state vote composed mostly of state-level variables.

Following their lead, we replicated Campbell's state-level model. We obtained the same results they did. The model has a reasonable fit with the data (SEE=4.01, Adj. R-square=0.82, in-sample call ratio=89%). Also, estimating the model over the 1948-1984 period only yields an out-of-sample call ratio for the 1992-2004 segment of 88%. Then we dropped Campbell's trial-heat variables from the state elections model, grafting onto it by turns Abramowitz's variables and the fiscal model variables, respectively. Paralleling the results with the national-level models in Table 5, all three models performed about equally well. However, as in Table 6, separately adding the residuals that remained from JUNEAPP and TRIALHEAT after these variables were purged of the fiscal model effects made a minimal contribution to the state-level version of the fiscal model, although with many more observations the residuals reached statistical significance.

In sum, it appears that JUNEAPP and TRIALHEAT are largely a function of three or four variables included in the fiscal model. Thus, the fiscal model offers an explanation not only of why the incumbents succeed or fail at the ballot box, but also of why these public opinion variables behave as they do. This is not to take anything away from the time-for-change or trial-heat model. They are efficient forecasting tools. It is simply to say that the fiscal model has greater explanatory power.

A Tentative Forecast for 2008

Looking to 2008, Fair writes that "if the economy is moderately good" (GROWTH= 3.0, GOODNEWS=2.0, INFLATION=3.0), his equation, estimated over the 1916-2000 period only, that is, omitting the 2004 outcome, predicts that the election will be "a dead heat," with the incumbents taking 50.1% of the two-party vote (Fair 2004, 9-10).

Assuming the same values for GROWTH and GOODNEWS (ALLNEWS in our model), the forecast with the fiscal model estimated over the same period is contingent on the spending policy of the second Bush administration. At the time of this writing (August 2006), it appears that it will almost certainly be expansionary. If that turns out to be the

[9] Thanks to Professor Campbell, an excel file with the state data is available on Polly's Data Page at politicalforecating.com.

case, the fiscal model forecasts that the Republicans will lose with 48.9% of the two-party vote. If, however, the economic assumptions have been too optimistic, and the spending policy remains expansionary, they will incur an even greater loss.

Conclusion

In this paper we have shown that the fiscal model performs empirically as well as Abramowitz's or Campbell's and better than Fair's. Also, we have argued that theoretically the fiscal model has advantages over the others because it alone includes a policy variable that contributes toward an explanation of presidential popularity and election outcome.

Finally, again unlike the other models, the fiscal model has practical advice to offer to the incumbents. If they wish to extend their tenure in the White House, they need to practice fiscal discipline. Presidents can, and arguably should, increase spending in absolute terms to keep up with population and economic growth. But absent a national emergency, they would do well to abstain from allowing the federal budget to take up an increasing share of GDP.

This conclusion may come as a shock to many contemporary political scientists,[10] but something like it was already known to one of our forerunners. Half a millennium ago, Machiavelli wrote:

> 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 (1997: 59).

[10] Judging from the content and tone of the criticisms leveled at our papers by anonymous journal reviewers, this is all too often the case.

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

VARIABLE	DEFINITION AND MEASUREMENT
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). Also, the 1912 election, during which the Republican Party split, is omitted.
GROWTH	The "growth rate of real per capita GDP in the first three quarters of the election year (annual rate)" (Fair 2002).
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).
ALLPRICES	ALLPRICES=INFLATION, except that no adjustments are made in war years, i.e., the real values are entered in 1920, 1944, and 1948.
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).
ALLNEWS	ALLNEWS=GOODNEWS, except that no adjustments are made in war years, i.e., the real values are entered in 1920, 1944, and 1948.
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).
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, and so on (Fair 2002).

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

VARIABLE	DEFINITION AND MEASUREMENT
PARTY	PARTY=1 if the Democrats occupy the White House, and -1 if the Republicans are the incumbents (Fair 2002).
WAR	"WAR= 1 for the elections of 1920, 1944, and 1948 and 0 otherwise" (Fair 2002).
F	Federal expenditures as a percent of GNP (through 1960) or as a percent of GDP (1964-2000) $F = \frac{\text{Federal Outlays}}{\text{GNP (or GDP)}} \times 100$
F1	Arithmetic change in F between election years: $F1 = F_t - F_{t-1}$, where t=election year and t-1=previous election year
F2	Arithmetic change in F1 between election years: $F2 = F1_t - F1_{t-1}$, where t=election year and t-1=previous election year
FISCAL	Fiscal policy: expansionary (1) or cutback (-1): FISCAL = 1 if F1>0 *and* F2 $\geq$0 FISCAL= -1 if F1<0 *or* F2<0. FISCAL=0 if F1=0 *and* F2=0 (there is no such case in the data).
JUNEAPP	"JUNEAPP is the difference between the president's approval and disapproval ratings in the final Gallup Poll in June" (Abramowitz 2004, 745).
FHGDP	"FHGDP is the annualized growth rate of real GDP during the first two quarters of the year" (Abramowitz 2004, 745).
TERM	"TERM is a dummy variable that takes on the value '0' if the president's party has been in office for one term and '1' if the president's party has been in office for more than one term" (Abramowitz 2004, 745).

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

TRIALHEAT	TRIALHEAT is "the in-party presidential candidate's share of support between the major party candidates in the Gallup Poll's trial-heat (or preference poll question around Labor Day" (Campbell 2004, 763).
2^{ND}QTRGDP	2^{ND}QTRGDP "is the Bureau of Economic Analysis'(BEA) [preliminary] measure of real growth in the Gross Domestic Product (GDP) in the second quarter of the election year (April through June). . . . An in-party presidential candidate who is the incumbent is accorded full responsibility for the economy in the equation and a successor or non-incumbent in-party candidate is accorded half the credit or blame for the growth or decline in the economy" (Campbell 2004, 763).

Table 2. Presidential Election Outcome by Fiscal Policy, 1872-2004

	FISCAL		
ELECTION*	Cutback	Expansionary	Total
Defeat	4	9	13
Victory	18	3	21
Total	22	12	34

* Victory of defeat refers to the popular vote for president, not the Electoral College. Significant at 0.002 level (Fisher's exact test)

Table 3. Fair's Equation and the Fiscal Model Compared, 1916-2000
(Standard errors in parentheses)

	PERIOD[1]				
VARIABLE	1872-2004	1880-2000		1916-2000	
		Fiscal model		Fiscal model	Fair's model
FISCAL	-3.22 (0.95)	-2.91 (0.65)	-2.48 (0.71)	-2.60 (0.53)	
GROWTH		0.56 0.11	0.48 (0.12)	0.66 (0.08)	0.69 (0.10)
DURATION		-2.47 (0.93)	-2.52 (1.33)	-2.43 (0.85)	-3.63 (1.19)
PARTY		-1.99 (0.59)	-2.07 (0.66)	-2.69 (0.46)	-2.71 (0.58)
ALLNEWS		0.65 (0.23)	0.52 (0.25)	0.88 (0.17)	
GOODNEWS					0.84 (0.27)
ALLPRICES			-0.46 (0.31)		
INFLATION					-0.78 (0.29)
PERSON[2]			1.33 (1.52)		3.25 (1.3)
WAR			3.57 (3.59)		3.85 (2.63)
INTERCEPT	51.31 (0.95)	48.63 (1.75)	50.16 (3.08)	47.48 (1.32)	49.61 (2.74)
SEE	5.24	3.19	3.15	1.97	2.37
Adj. R square	0.25	0.74	0.75	0.92	0.89
D.W.	2.3	1.95	1.98	2.0	2.6
1st order auto-corr.	-0.17	-0.09	-0.08	-0.03	-0.34
N	33	30	30	22	22

Notes:

[1] The 1912 election, when the Republican Party split, with former president Teddy Roosevelt running as an independent, is omitted.
[2] Fair (2002) assigns a value of 0 to PERSON in 1904. This is in error, as the incumbent candidate, Theodore Roosevelt, had assumed the presidency three years earlier, following the assassination of President McKinley. We use the correct value. If we didn't, the coefficient and standard error for this variable would be -0.15 and 1.57, respectively.

Table 4. Actual vs. Predicted Vote: Fair=s Equation vs. Fiscal Model
(out-of-sample predictions)

YEAR	VOTE2	1916-2000 Fair's equation	1916-2000 Fiscal model	1916-1960 Fair's equation	1916-1960 Fiscal model
1916	51.68	50.51	51.43	***47.96***	52.34
1920	36.12	47.37	36.96	43.26	38.89
1924	58.24	56.42	59.59	55.47	59.33
1928	58.82	57.07	59.78	55.90	61.62
1932	40.84	34.94	36.55	42.90	38.81
1936	62.46	64.42	63.15	65.08	61.81
1940	55.00	56.05	54.24	57.83	54.97
1944	53.77	51.598	54.96	53.92	52.12
1948	52.37	***49.06***	***49.00***	51.74	50.78
1952	44.60	44.24	43.49	42.66	44.61
1956	57.76	57.07	55.89	57.36	56.08
1960	49.91	***52.11***	49.77	***53.21***	***50.54***
1964	61.34	60.97	59.08	59.52	58.79
1968	49.60	***50.38***	49.14	49.19	49.02
1972	61.79	58.59	59.89	61.59	60.54
1976	48.95	48.96	***51.93***	***51.29***	***51.66***
1980	44.70	46.46	***50.93***	45.82	49.82
1984	59.17	63.17	57.67	63.72	56.94
1988	53.90	50.61	55.79	52.05	56.70
1992	46.55	***55.12***	48.19	***55.15***	48.74
1996	54.74	53.23	52.12	52.96	52.99
2000	50.30	***48.58***	52.52	***47.10***	53.02
2004[a]	51.24	57.49	51.09	58.77	50.85

(a) July 31 2004 forecast in "real time," obtained with the model estimated as shown in Table 3. It is not included in the diagnostic calculations.

Table 4. Actual vs. Predicted Vote: Fair=s Equation vs. Fiscal Model
(out-of-sample predictions)
(continued)

YEAR	1916-2000 Fair's equation	1916-2000 Fiscal model	1916-1960 Fair's equation	1916-1960 Fiscal model
Largest error	+11.25 (1920)	+6.23 (1980)	+8.6 (1992)	+5.12 (1980)
Mean absolute error	2.83	1.77	2.78	1.73
SD of error	2.78	1.44	2.30	1.19
Call rate	77.3%	86.4%	77.3%	91%

Notation:

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.
Call rate: Percent of elections corrected called a win or loss for the incumbents in the two-party vote.

Table 5. Comparing the Time-for-Change, Trial-heat, and Fiscal Models
Dependent variable: Incumbent Share of Two-Party Vote
(Standard errors in parentheses.)

VARIABLE	Time-for-change 1948-2004	Trial-heat 1948-2004	Fiscal Model, 1948-2004	Fiscal Model, 1916-2004
INTERCEPT	50.29 (1.09)	26.92 (3.04)	46.37 (1.97)	47.52 (1.12)
FHGDP	0.81 (0.19)			
2ND QTRGDP		0.61 (0.14)		
JUNEAPP	0.11 (0.02)			
TRIALHEAT		0.47 (0.06)		
TERM	-4.61 (1.17)			
DURATION			-2.49 (0.99)	-2.45 (0.77)
FISCAL			-2.89 (0.65)	-2.59 (0.47)
GROWTH			1.03 (0.23)	0.66 (0.08)
ALLNEWS			0.92 (0.33)	0.87 (0.15)
PARTY			-2.59 (0.73)	-2.68 (0.44)
SEE	2.03	1.86	2.1	1.91
R square	0.89	0.91	0.91	0.94
Adj. R square	0.87	0.89	0.86	0.92
D.W.	1.94	1.79	1.16	2.06
1st order auto-correlation	-0.05	0.05	0.37	-0.03
N	15	15	15	23
V/N ratio	0.2	0.2	0.33	0.22
MAE*	1.75	1.71	2.26	1.73
Median*	1.84	1.45	2.42	1.32
AE>3%*	7%	20%	27%	13%
Call ratio*	73%	93%	73%	87%

*Out-of-sample "forecasts."
AE = absolute error. LAE = largest absolute error. MAE = mean absolute error. V/N ratio: the ratio of variables to the number of observations. Call ratio = percent of elections where the winner was correctly called.

Table 6. Modeling JUNEAPPROVE and TRIALHEAT with Fiscal Model Variables and Adding the Residuals to the Fiscal Model
(Standard errors in parentheses)

VARIABLE	Dependent variable: JUNEAPP	Dependent variable: TRIALHEAT	Dependent variable: VOTE2	Dependent variable: VOTE2
FISCAL	-12.42 (4.69)	-3.62 (1.47)	-3.01 (0.57)	-2.83 (0.61)
GROWTH			0.99 (0.20)	0.86 (0.24)
ALLNEWS	8.42 (2.44)	1.78 (0.71)	0.98 (0.29)	1.02 (0.31)
DURATION		6.75 (2.29)	-2.06 (0.90)	-2.48 (0.93)
PARTY	-19.14 (5.31)	-2.59 (1.63)	-2.74 (0.64)	-2.71 (0.68)
JUNEAPP RESIDUAL			0.06 (0.03)	
TRIALHEAT RESIDUAL				0.22 (0.14)
INTERCEPT	-36.81 (13.58)	46.39 (4.53)	45.84 (1.75)	46.28 (1.83)
SEE	17.03	4.79	1.83	1.94
Adj. R square	0.56	0.70	0.89	0.88
D.W.	1.0	2.23	1.55	1.45
1st order auto-correlation	0.47	-0.12	0.16	0.19
N	15	15	15	15

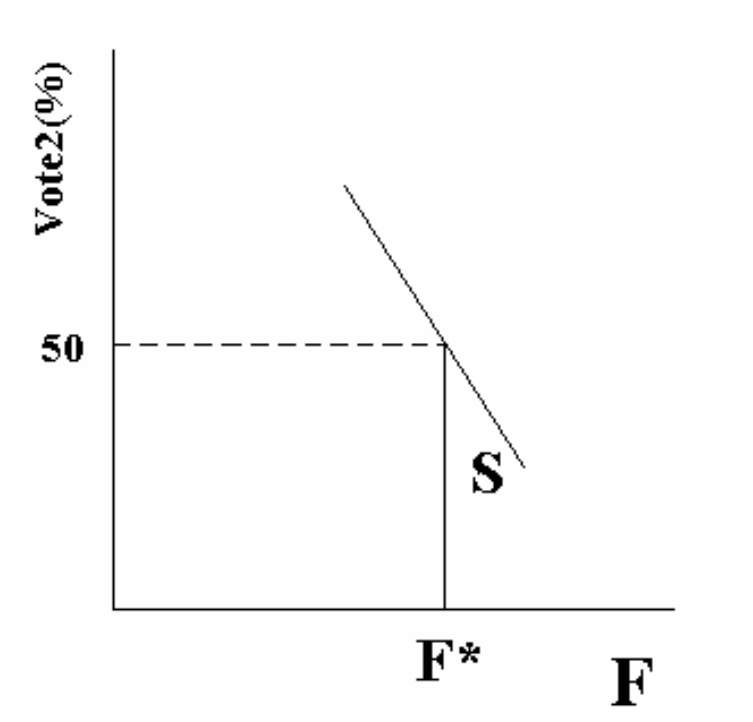

Figure 1. VOTE2 as a function of F

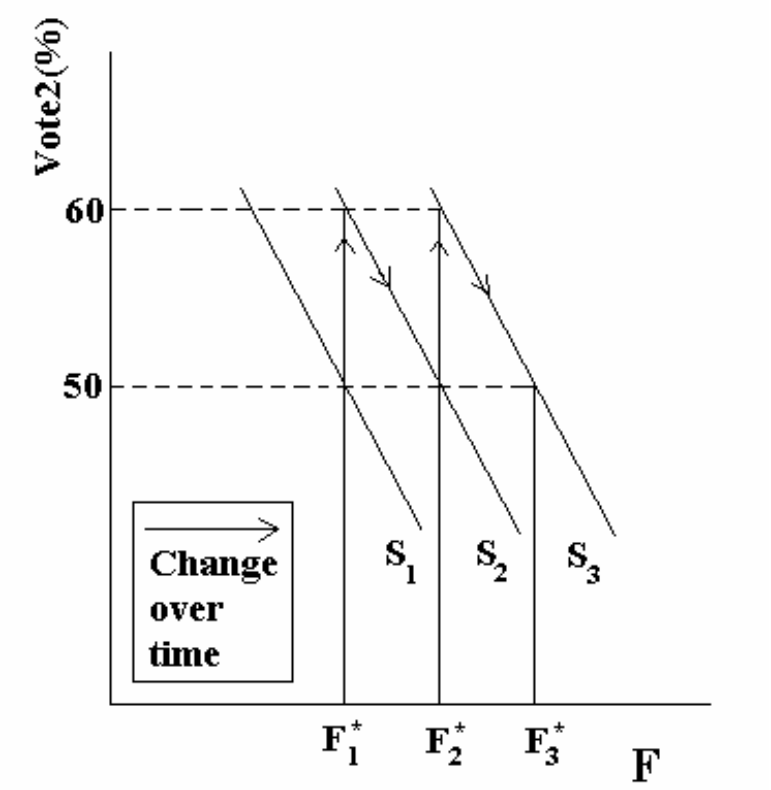

Figure 2. Shifting Support for Federal Spending

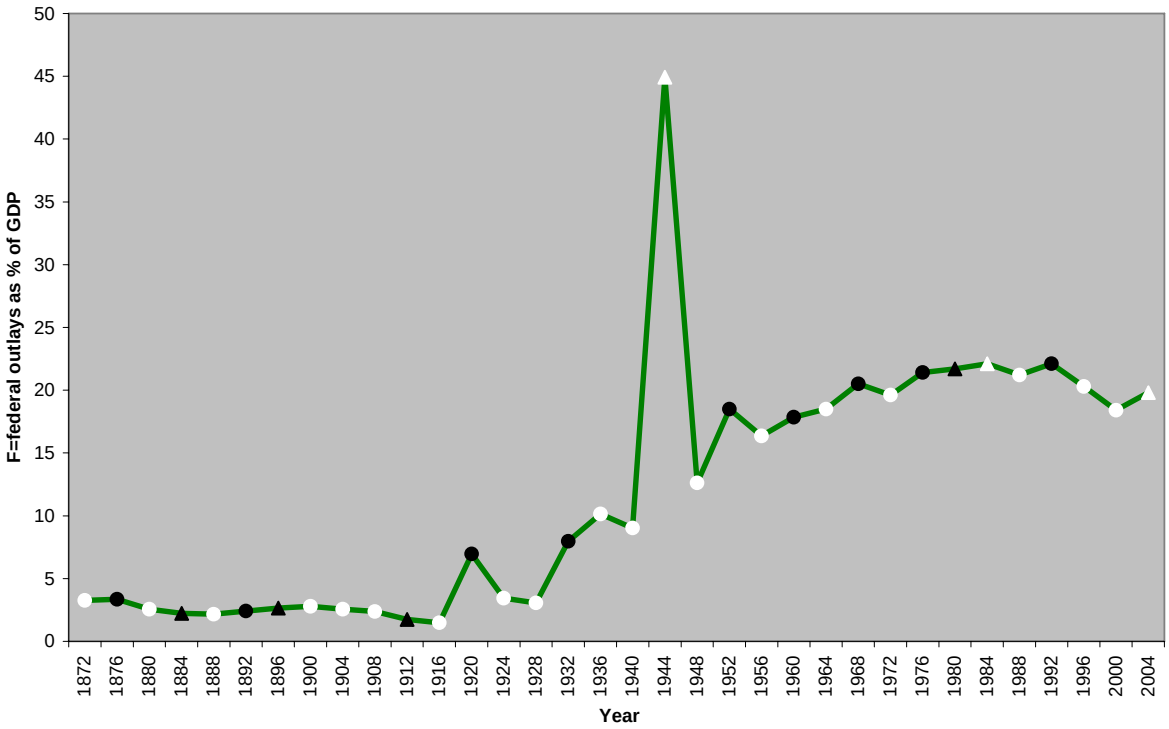

Figure 3. Election Outcome by Fiscal Policy
White Dots = victory in the popular vote
Black Dots = defeat in the popular vote
Triangle = errors

APPENDIX I

In this Appendix we respond to three objections frequently raised against the fiscal model.

Objection #1. Spending does not represent the cost of government, but its benefits.

Reply #1. Expenditures *per se* cannot possibly be construed as a good. Voters do not value federal spending as an end, but as a means of obtaining real goods and services, produced directly by federal employees or procured through purchases and contracts with private vendors. 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, as when government embarks on an unpopular war, restricts their civil liberties, or tyrannizes over them. This is 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.

Less dramatically, government may provide the public with goods and services that though valued are less desirable than other things which government could provide or that citizens could buy for themselves individually or cooperatively. Or, it could simply be that the package provided by government is just what the electorate wants but that government is not producing or providing it efficiently, supplying too little relative to the expense, so that the sacrifice or opportunity cost of enjoying this package is too great.

A household example may clarify the point further. Suppose that someone were in the market for a car, for which he has budgeted a certain percent of the family income. After some searching, he finds a model that fits his needs and likes, spending, say, $20,000 on it. If one were to ask, what is the cost and what is the benefit of the car to the buyer, the answer, of course, would be that the $20,000 represents the cost, and the value the buyer places on the use he expects to make of the car during its lifetime, the benefit. Now suppose that it is not the buyer himself who goes out to purchase a new car but, being too busy to do it himself, disliking haggling with car salesmen or simply not trusting his judgment or his ability to bargain for the best price, he hires someone to do it for him. He gives this middleman a list of specifications for what he wants in a car, the most he is willing to pay for it, and lets her buy it for him. Suppose that, being more savvy with the ways of car dealers, and having a very good idea of what the buyer wants, she is able to purchase the very same car he would have picked himself, for $19,000. To that total she adds a $1,000 fee for her services. So that, in the end, the buyer pays the same amount for the car as he would have paid on his own, only he spent less time on the transaction and saved himself some grief. Again, what is the cost to the buyer and what are the benefits? The answer, of course, is exactly the same as in the previous example. Now, substitute voters for the buyer, the federal bundle of goods and services for the car, and the president for the middle man. What is the cost to the voters of the federal bundle of goods and

services, and what are the benefits? It should be clear that the cost is what Washington, acting on behalf of the public, spent on the goods and services, and the benefit is the value which that same public places on those goods and services. Federal spending, therefore, does not constitute a benefit. It is the *cost* of acquiring goods and services through or from the federal government. (The example may be revised to introduce efficiencies or inefficiencies in the political system, in the communication flow between voters and Washington and in the federal production and purchasing process, relative to the market.)

Objection #2. The relation between FISCAL and VOTE2 is spurious. Since F is the fraction of GDP that is spent by the federal government, when the economy grows so does the denominator, which reduces F, and vice-versa when the economy shrinks. Thus, what appears to be a function of fiscal policy is simply a reflection of growth or contraction in income.

Reply #2. This is not the case. Actually, expenditures, quadrennially measured in per capita terms or as a percent of GDP (F), tend to *increase* as income or GDP grows. This is not hard to explain. As the economy grows, so do revenues, and this is a stimulant to greater spending. Ironically, the relationship between FISCAL and income per capita or the total or percent change thereof, or with GROWTH is either mildly positive or practically zero and never statistically significant. Thus, spending policy measured by FISCAL is autonomous, seemingly a function of political, not economic considerations.

Incidentally, be it noted that only four times since 1872 has GDP (total or per capita) shrunk between presidential elections years (1892-1896, 1904-1908, 1928-1932, and 1944-1948) and in two of those cases the incumbents were returned to the White House (the Republicans in 1908 and the Democrats in 1948). The normal case is for the economy to grow during the presidential term. (See the data in Johnston and Williamson 2006). As the economy grows, so does federal spending, although sometimes at a faster and other times at a slower rate.

Objection #3. Even if spending is negatively associated with VOTE2, one should measure it with a continuous, not a binary variable.

Reply #3. As noted in the literature review section, Niskanen and Peltzman found a negative relation between spending measured on a per capita basis and the incumbent share of the two-party vote. For their part, Geys and Vermeir measured it as a percent of GDP. We, too, have measured spending as a continuous variable but found that it understates the impact of fiscal policy on the vote (Cuzán and Bundrick (2005, 258)). FISCAL is a better measure. It is theoretically grounded, visually discernible in a graph (recall Figure 3), useful for constructing a simple typology of presidents (Cuzán and Heggen 1984, Cuzán and Bundrick 2000), 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, also, that in the natural sciences and engineering[11] it is not unusual to

[11] 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 (2006).

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.[12]

There is yet another feature of FISCAL that is worth noting. An anonymous reviewer once pointed out that the relation 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. To take up two real-case examples vividly illustrated in Figure 3: under President Hoover F nearly tripled, from 3% to 8%, and he was soundly defeated for reelection. In the next term, FDR's first, F also went up, to 10%, yet President Roosevelt was returned to the White House by a record margin. Under President Eisenhower's second term, F went up, from 16.4% to 17.9%, and his party's candidate went down to defeat. In the next term F also increased, but by a smaller increment, to 18.5%; President Lyndon Johnson, like FDR, was reelected by another near-record margin.

The general relationship illustrated by these two pairs of 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. Accordingly, 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. 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.[13]

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[12] 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.

[13] For an interpretation of the American fiscal-electoral system as a stable or self-regulating system, see Cuzán, Heggen, and Bundrick (2006).

APPENDIX II.

YEAR	VOTE2	FISC	GROW	ALL NEWS	DUR	PARTY	TRIAL HEAT	2QTR GDP	JUNE APP	FH GDP	TERM
1916	51.68	-1	2.229	3	0	1					
1920	36.12	1	-11.463	5	1	1					
1924	58.24	-1	-3.872	10	0	-1					
1928	58.82	-1	4.623	7	1	-1					
1932	40.84	1	-14.557	4	1.25	-1					
1936	62.46	-1	11.677	9	0	1					
1940	55	-1	3.611	8	1	1					
1944	53.77	1	4.433	14	1.25	1					
1948	52.37	-1	2.858	5	1.5	1	45.61	3.645	-7	6.9	1
1952	44.6	1	0.84	6	1.75	1	42.11	0.547	-26	2.25	1
1956	57.76	-1	-1.394	5	0	-1	55.91	2.574	55	0.65	0
1960	49.91	1	0.417	5	1	-1	50.54	-0.526	30	3.6	1
1964	61.34	-1	5.109	10	0	1	69.15	3.254	59	7	0
1968	49.6	1	5.07	7	1	1	41.89	3.256	-8	7.75	1
1972	61.79	-1	6.125	4	0	-1	62.89	6.901	24	8.55	0
1976	48.95	1	4.026	4	1	-1	40	4.484	5	6.15	1
1980	44.7	-1	-3.594	5	0	1	48.72	-9.396	-27	-3.25	0
1984	59.17	1	5.568	8	0	-1	60.22	7.424	16	7.6	0
1988	53.9	-1	2.261	4	1	-1	54.44	1.534	8	3.6	1
1992	46.55	1	2.223	2	1.25	-1	41.94	1.42	-17	4.05	1
1996	54.74	-1	2.712	4	0	1	60.83	4.156	10	4.8	0
2000	50.27	-1	1.603	7	1	1	52.13	2.604	15	3.7	1
2004	51.24	1	2.7	2	0	-1	50.52	2.763	-1	3.75	0
Mean	52.34	-0.13	1.44	6	0.65	0.04	51.79	2.31	9.07	4.47	0.53
SD	6.81	1.0	5.61	2.88	0.61	1.0	8.78	3.86	25.67	3.09	0.52