FISCAL POLICY: AN IMPLICIT FACTOR IN THE TRIAL-HEAT AND TIME-FOR-CHANGE MODELS?

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When it comes to forecasting the incumbent share of the two-party vote in American presidential elections (VOTE2), Alan Abramowitz's time-for-change model (henceforth TFC) and James E. Campbell's trial-heat model (TH) rank among the best performers of what we call the Campbell Collection, named after the editor or co-editor of several symposia in which these models, along with others, appeared.[2] In this essay we compare the TFC and TH models with the fiscal model, a newcomer to the forecasting sweepstakes, which took first prize in 2004, its July forecast coming within 0.1% of President Bush's actual share of the two-party vote. With national and state-level presidential elections data, we show that the defining variable in this model, fiscal policy, appears to be an implicit factor in both the time-for-change and trial-heat models.

The original models: specification and performance

Estimated over the 14 presidential elections held during the 1948-2000 period, Abramowitz's model, the first version of which was used to predict the outcome of the1988 election (Abramowitz 1988), consists of three predictor variables, to wit: the net presidential approval rating in the last Gallup poll taken in June of the election year (JUNEAPPROVE), real GDP growth during the first half of the election year (FHGDP), and TERM, a variable

[1] Thanks to our colleague Bill Tankersley of the Division of Administrative Studies at UWF, and to Randall J. Jones Jr., of the University of Central Oklahoma, for their suggestions.

[2] See *American Politics Quarterly*, October 1996 and *PS: Political Science and Politics*, October 2004 and January 2005.

measuring what Norpoth (1996) calls a "fatigue" factor. This variable is scored 0 if the incumbents are in their first term and 1 if they are in their second or later term (Abramowitz 2004, 2005).

Campbell's trial-heat model also dates from the late1980s (Campbell and Wink 1990; Campbell and Mann 1992). The most recent version 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 (TRIAL-HEAT) and the election year second-quarter GDP growth rate estimate issued by the Bureau of Economic Analysis (2ndQTRGDP). 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 whether or not he is the sitting president (Campbell 2004, 2005).

As shown in Table 1, over the last four elections both the TFC and TH models have performed well, correctly picking the popular vote winner ahead of the event, and have done so with an average absolute error of just under 2.0% of the vote. In 2004 their respective forecasts for Bush's share of the two party vote were 53.7% and 52.8%, or 2.5% and 1.6% higher than the actual (Abramowitz 2004, Campbell 2004, Cuzán and Bundrick 2005).

Their proven use in forecasting notwithstanding, Abramowitz's and Campbell's models have limited theoretical value for scholars and offer little or no practical use for those who govern. 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 exactly sage counsel. As to their theoretical limitations, this is because most of the variance in the incumbent 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 JUNEAPPROVE and TRIAL-HEAT are 0.79 and 0.86. (The correlation between these two variables is r = 0.73). This begs the question regarding the determinants of presidential or the incumbent party candidate's popularity, a question to which, as we shall see, the fiscal model offers an answer.

In its original bi-variate form, the fiscal model first saw light as an explanatory model in 1984 to account for 80% of all presidential elections held over the previous century (Cuzán and Hegen 1984). After the 1996 elections, it was shown that in out-of-sample forecasting a multi-variate version of the model performed about as well as Norpoth's "autoregressive" model, the only member of the Campbell Collection that does not incorporate a survey measure (Cuzán and Bundrick 1999).

In its present form the fiscal model made its debut as a real time forecasting model only in 2004, at politicalforecating.com (Cuzán and Bundrick 2004, 2005). It consists of five predictors. Three are borrowed or adapted from Ray Fair's presidential vote equation (Fair 2002, 2004). These are real GDP per capita growth in the third quarter of the election year (GROWTH), which at the time the forecast is issued is only a projection, the projected number of quarters in the presidential term in which GROWTH exceeds 3.2% (ALLNEWS),[3] and DURATION, scored 0 in the first term, 1.25 in the second, 1.5 in the third, and so on for every

[3] Fair's label for this variable is GOODNEWS. However, he zeroes out its value in three so-called "war" years (1920, 1944, and 1948). We do not do that, but retain the real values, so we call the variable ALLNEWS. We thank Professor Fair for e-mailing us the data.

additional consecutive term the same party occupies the White House. Fourth is the PARTY of the incumbents (1 for Democrats, -1 for Republicans) because not only Fair but Alesina and Rosenthal (1995), too, find that historically Republicans have done better than Democrats at the polls. This is purely an empirical control.

Lastly comes FISCAL. This variable, which gives the model its name, is unlike any other used to account for presidential election outcomes. It describes federal fiscal policy during the presidential term. Generally, fiscal policy is expansionary (FISCAL=1) if F, the ratio of federal outlays to GDP, has gone up at the same or higher rate between election years than in the previous presidential term. By contrast, fiscal policy is cutback (FISCAL= -1) if F has decreased or its rate of growth has slowed between election years compared to the previous presidential term. In mathematical terms, FISCAL = 1 if the first or the second derivative of F is positive and neither is negative and FISCAL = -1 if either the first or the second derivative of F is negative. Theoretically, FISCAL could take the value of 0 if both derivatives were equal to zero, but there is not a single such case in the data. (See the Appendix in Cuzán and Bundrick 2005.)

The key hypothesis of the fiscal model is that, *ceteris paribus*, on Election Day fiscal expansion does not pay for the incumbents. It is beyond the scope of this research note to offer more than a summary account of why it is that fiscal policy has this effect on incumbents' electoral fortunes. The theoretical rationale has been presented elsewhere (Cuzán, Heggen, and Bundrick 2003 and Cuzán and Bundrick 2004, 2005). Suffice it here to say that, drawing an analogy from economics, we reason that a switch in fiscal policy from cutback to expansionary is roughly equivalent to an increase in the "price" or "fee" that Washington charges the economy for the federal bundle of goods and services.[4] As this "price" goes up, more voters-cum-

[4] On model-building by analogy, see Ashby (1960), Black (1950), Morris (1970), Pribram

consumers predictably shop around for alternatives. In politics, this takes the form of casting ballots for the opposition party. Thus, FISCAL is expected to have a statistically negative association with VOTE2. Admittedly, this is only the germ of an explanation. For elaboration, including responses to criticisms, and for a justification for using FISCAL instead of a continuous variable for measuring fiscal policy, see the references cited in the third sentence of this paragraph.

Estimated over all presidential elections held since 1916, the same as Fair's presidential vote equation, the model performs better than Fair's and as well or better than the typical member of the Campbell Collection (Cuzán and Bundrick 2005). In 2004, the August 1 forecast issued with the fiscal model came within 0.1% of the actual share of the two-party vote going to President Bush, the best showing of any of the Campbell Collection models that year.

Returning to Table 1, there it is shown that the fiscal model's mean absolute forecasting error in out-of-sample forecasting in the last four elections is a little larger than either Abramowitz's or Campbell's. In two of the four years its error was the largest of the three models. Only in 2004 was its error smaller than that of the other two. In sum, over the last four elections the fiscal model's performance in real time or simulated forecasting has been a little less successful than the other two models. However, this difference disappears when we compare the models on out-of-sample forecasting across all elections over which each model is estimated. In Table 2 our estimates of all three models through the 2004 election are displayed. Also shown are diagnostic statistics and their performance in out-of-sample forecasting. Note that all three models have a comparable fit with the data, the Adjusted R-square being around 0.90 and the SEE about 2.0 or less. In terms of out-of-sample forecasting performance, in all

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(1953), Richardson (1991), Russett (1966), and Sebba (1953).

three models the mean absolute error hovers around 1.75%. Interestingly, the trial-heat model has a higher percent of errors that are greater than 3%, yet it has the best call ratio, whereas the time-for-change model is at the opposite end on both criteria.

In sum, we have three presidential election models that have performed relatively well at out-of-sample or real time forecasting of the incumbent share of the two-party vote. Two of these models, Abramowitz's and Campbell's, consist of three variables each and are estimated over the last 15 elections. This yields a variable to elections ratio of 0.20. The fiscal model contains five variables and is estimated over 23 elections, for a variable to election ratio of 0.22. In terms of parsimony and real or simulated forecasting accuracy, all models perform equally well.

In the remainder of this paper we conduct further statistical experiments to see if we can better differentiate the models. First, in Table 3 we display the results of adding FISCAL to the TFC and TH models and of inserting in the fiscal model, by turns, JUNEAPPROVE and TRIAL-HEAT. Comparing Tables 2 and 3 we observe the following. Adding FISCAL to Abramowitz's model improves model fit somewhat, the R-sq. rising slightly and the SEE falling by almost 20%. In that model, FISCAL is statistically significant. The coefficients of Abramowitz's variables all shrink a little. But when inserted in Campbell's model FISCAL is not statistically significant and, in fact, it hardly disturbs the original coefficients. On the other hand, when JUNEAPPROVE is added to the fiscal model (estimated over the truncated 1948-2004 series), it is statistically significant but neither PARTY nor ALLNEWS is. But when added to the fiscal model TRIAL-HEAT fails to achieve statistical significance, even as it appears to deprive DURATION, ALLNEWS, and PARTY of theirs. In the presence of either JUNEAPPROVE or TRIAL-HEAT the coefficient for FISCAL shrinks by about 25-30%.

These results suggest that both JUNEAPPROVE and TRIAL-HEAT are correlated with FISCAL, ALLNEWS, and PARTY, and TRIAL-HEAT with DURATION, as well. This is hardly surprising since, as we have seen, JUNEAPPROVE and TRIAL-HEAT are both highly correlated with VOTE2, most of the variation of which is accounted for by the fiscal model. Thus, in Table 4 we model JUNEAPPROVE on FISCAL, ALLNEWS, and PARTY (column 2) and regress TRIAL-HEAT on these variables and PARTY. (We exclude GROWTH from both equations and DURATION from that for JUNEAPPROVE, since both the TH and TFC models include a GDP growth variable and the latter includes a time in office variable). Note that 60-70% of the variation in these two variables is accounted for by three or four of the variables in the fiscal model. As with VOTE2, so with these two public opinion variables: 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 TRIAL-HEAT and 25 points in JUNEAPPROVE. (FISCAL takes the value of -1 and 1, so its coefficient has to be multiplied by two).

Theoretically, the residuals from both models constitute the portion of variability in JUNEAPPROVE and TRIAL-HEAT not already accounted for by FISCAL and its companions. In Table 4, 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 .05 confidence level. Furthermore, the fiscal model is hardly disturbed by the introduction of either variable. In sum, this statistical experiment suggests that once JUNEAPPROVE and TRIAL-HEAT are purged of the effects of the fiscal model, their contribution to a model of the VOTE 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 by replicating the experiments with state-level data. Campbell (1992) and Campbell et. al. (forthcoming) 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 party of the incumbents and two interaction terms, GDP growth-presidential incumbency and GDP growth-incumbent party, they find that the coefficient for TRIAL-HEAT 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 TH model onto a model of the state vote composed of state- and regional level variables.

Following their lead, we replicated Campbell's state-level trial-heat 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 TFC variables and the fiscal model variables, respectively. Paralleling the results with the national-level models in Table 2, all three models performed about equally well. Then we added FISCAL to Campbell's trial-heat version of the state elections model and to Abramowitz's time-for-change version, and JUNEAPPROVE and TRIAL-HEAT to the fiscal model's. Again, the results parallel those of Table 3. However, with many more observations, FISCAL is statistically significant in Campbell's version of the state elections model. Similarly, we replicated the experiments shown in Table 4. That is, once JUNEAPPROVE and TRIAL-HEAT were purged of the fiscal model effects, the contribution of the residuals to the fiscal

model variation of the state elections model is minimal, although with many more observations both residuals reach statistical significance.

Summary and Conclusion

The foregoing analysis shows that the public opinion variables in Abramowitz's time-for-change model and Campbell's trial-heat model, respectively the net presidential approval rating in June of the election year (JUNEAPPROVE) and the incumbent share in the early September Gallup preference poll (TRIAL-HEAT), are both largely a function of three or four variables included in the fiscal model for which there are no equivalent variables in either model. What this means is that the fiscal model supplies a theoretical explanation for the success of both the trial-heat and time-for-change models. Controlling for the party of the incumbents, the president's approval rating halfway through the election year is largely a function of how well the economy performed during the entire presidential term (ALLNEWS) and the administration's fiscal policy. The same variables, together with the number of consecutive terms in the White House, mostly account for the president's or, if he is not running, his party's candidate's standing in the polls two months before the election. Thus, the fiscal model offers an explanation not only of why the incumbents succeed or fail at the ballot box, but also of why the public opinion variables in the time-for-change and the trial- heat models operate as efficient predictors of the incumbent vote. This is not to take anything from them as forecasting tools. It is simply to say that the fiscal model offers a greater understanding of voter behavior than Abramowitz's or Campbell's model does.

We already knew about the role which the economy and time in office play in election results. What is intriguing is the effect of fiscal policy. The fiscal model suggests that incumbents are not entirely at the mercy of largely exogenous economic forces. There *is*

something they can do to persuade the electorate to grant them another term in the White House, and that is to practice fiscal frugality. They can increase spending in absolute terms to keep up with population or economic growth, but absent a national emergency they would do well to abstain from implementing a policy of fiscal expansion. This conclusion may come as a surprise to many contemporary political scientists, but something like it was already known to one of our forerunners. In *The Prince,* 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).

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Table 1. Comparing Forecasts of the Incumbents' Share
of the Two-Party Vote in Presidential Elections, 1992-2004[1]

Model	1992	ABE	1996	ABE	2000	AE	2004	ABE	MABE	S.D
Time-for-change	46.2	**0.35**	56.8	**2.06**	53.2	2.9	53.7	*2.46*	1.94	1.1
Trial-heat	47.1	0.55	58.1	*3.36*	52.8	**2.5**	52.8	1.56	1.99	1.2
Fiscal	48.0	*1.45*	52.2	2.54	54.7	*4.4*	51.1	**0.14**	2.13	1.8
AVERAGE	49.2	2.86	55.9	2.07	55.5	5.2	53.9	2.96	2.02	
MEDIAN	47.6	1.00	56.8	2.36	55.0	4.7	53.7	2.46	1.99	

(1) For the TFC and the TH models, these are "real time" or ex-ante forecasts. In the case of the fiscal model, these are out-of-sample predictions made with the model estimated with all prior, but no subsequent elections to the one being "forecast."

Notation: ABE: Absolute error. MABE: Mean absolute error. SD: Standard deviation. Bold: best prediction of the three that year. Italics: worst prediction of the three that year.

Sources for TFC and TH models: October 1996 issue of *American Politics* Quarterly; March 2001, and October 2004, and January 2005 issues of *PS: Political Science and Politics*.

Table 2. Comparing the Time-for-Change, Trial-heat, and Fiscal Models
Dependent variable: Incumbent Share of Two-Party Vote
(Standard error in partentheses.)

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 QTR. GDP		0.61 (0.14)		
JUNEAPP	0.11 (0.02)			
TRIAL-HEAT		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
MABE*	1.75	1.71	2.26	1.73
Median*	1.84	1.45	2.42	1.32
ABE>3%*	7%	20%	27%	13%
Call ratio*	73%	93%	73%	87%

*Out-of-sample "forecasts."
ABE = absolute error. MAE = mean absolute error. Call ratio = percent of elections where the winner was correctly called.

Table 3. Adding FISCAL to the Time-for-Change and Trial-heat Models, and adding JUNEAPPROVE and TRIAL-HEAT to the Fiscal Model.
(standard error in parentheses)

VARIABLE	TFC plus FISCAL	TH plus FISCAL	Fiscal model plus JUNEAPPROVE	Fiscal model plus TRIAL-HEAT
INTERCEPT	49.68 (0.91)	29.17 (3.83)	48.32 (2.01)	35.94 (6.92)
FHGDP	0.91 (0.16)			
2ND QTR. GDP		0.66 (0.15)		
JUNEAPP	0.095 (0.02)		0.064 (0.03)	
TRIAL-HEAT		0.42 (0.08)		0.22 (0.14)
TERM	-4.15 (0.97)			
DURATION			-2.10 (0.90)	-1.00 (1.33)
FISCAL	-1.25 (0.48)	-0.60 (0.62)	-2.19 (0.68)	-1.99 (0.83)
GROWTH			0.99 (0.20)	0.86 (0.24)
ALLNEWS			0.43 (0.39)	0.60 (0.37)
PARTY			-1.49 (0.86)	-2.12 (0.74)
SEE	1.65	1.86	1.83	1.94
R square	0.94	0.91	0.94	0.93
Adj. R square	0.91	0.89	0.89	0.88
D.W.	1.27	1.44	1.53	1.44
1st order auto-correlation	0.36	0.26	0.16	0.19
N	15	15	15	15

Table 4. Modeling JUNEAPPROVE and TRIALHEAT with Fiscal Model Variables and Adding the Residuals to the Fiscal Model
(standard error in parentheses)

VARIABLE	Dependent variable: JUNEAPPROVE	Dependent variable: TRIAL-HEAT	Dependent variable: VOTE2	Dependent variable: VOTE2
INTERCEPT	-36.81 (13.58)	46.39 (4.53)	45.84 (1.75)	46.28 (1.83)
JUNEAPPRES			0.06 (0.03)	
THRES				0.22 (0.14)
DURATION		6.75 (2.29)	-2.06 (0.90)	-2.48 (0.93)
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
PARTY	-19.14 (5.31)	-2.59 (1.63)	-2.74 (0.64)	-2.71 (0.68)
SEE	17.03	4.79	1.83	1.94
R square	0.65	0.79	0.94	0.93
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

DATA APPENDIX

YEAR	VOTE2	FISC	GROW	NEWS	DUR	PARTY	TRIAL HEAT	2QTR GDP	JUNE APPRV	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