FORECASTING U.S. PRESIDENTIAL ELECTIONS
A BRIEF REVIEW

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KEY POINTS

• Regression modeling is an important tool in forecasting presidential elections. Most models have consistently identified the election winners, even though their forecasts have been off by a few points.

• By identifying causes, the regression models have contributed to our understanding of reasons for election outcomes in ways that go beyond forecasting. We know, for example, that the state of the economy significantly affects election results, with voters usually holding the incumbent party responsible.

• In addition, the accuracy of models that incorporate public opinion variables suggests that the public's assessment of political figures likely has an independent effect on election outcomes.

PREVIEW

With the November 2008 U.S. presidential election looming, Randall and Alfred describe the enduring forecasting models that have been created by economists and political scientists for predicting the results of this quadrennial ritual. The most stable models since 1996 have consistently forecast the election winner, with an average error of less than 3%. While not all of the players have issued their forecasts for this year's final vote, the models suggest that the outlook for the Republican Party is negative.

INTRODUCTION

Over the last three decades, economists and political scientists have developed a variety of regression models to forecast presidential elections. Some of these models have dropped by the wayside, others have been substantially modified, and a few have barely been tinkered with since their inception. In tracing this 30-year process, we show how later efforts have built upon earlier work and assess the accuracy of the regression models currently in use that have stayed relatively unchanged in structure. We also offer some thoughts on what the models tell us for the final 2008 vote.

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EVOLUTION OF THE MODELS

Most of the current models to predict presidential elections have descended from two that appeared in 1978. One model was created by economist Ray Fair, the other by political scientist Edward Tufte, both at Yale.

After some experimentation, Fair settled on a model whose key explanatory variables included measures of growth and inflation, the incumbency of the president and his party, and a trend indicator. With this model, he forecast ahead to the 1980 election, correctly predicting Ronald Reagan's victory over incumbent Jimmy Carter. Tufte, like Fair, took economic growth and party incumbency into account, but he also added a measure of the public's attitude toward the presidential candidates, based on the net number of positive and negative mentions of them in the American National Election Studies. Because the opinion data were not available until after the election, Tufte's model was more of a prototype, incapable of forecasting ahead. However, his insight that public opinion should be taken into account was soon incorporated into models that were structured for forecasting, as we will see.

By including economic growth indicators, Fair and Tufte at least implicitly assumed that a presidential election is essentially a referendum on the president's handling of the economy. According to this view, if the economy is performing well, voters will support the president or other nominee of the incumbent's party. If the economy is doing poorly, voters likely will put the opposition party's candidate in the White House. It seems not to matter that the president's influence over the economy is usually quite limited; voters nevertheless appear to hold the president and the president's party responsible, for good or ill. As Mario Cuomo, former governor of New York, told the *Financial Times* in a recent interview,

No president creates economic prosperity.... Roosevelt didn't end the Depression with his "alphabet program." The war ended the Depression. The almost inevitable irony is that if you are a president or for that matter a governor, you get credit for whatever happens while you're there and you get blamed for whatever happens while you're there (Freeland, 2008).

In addition to his 1980 forecast, Fair also correctly predicted the presidential winners for 1984 and 1988. Then, in 1992, Fair's forecast fell wide of the mark, wrongly predicting easy reelection for President George H. W. Bush (Fair, 1996b). Subsequently, Fair revised his model, adding a second growth indicator, a measure of the incumbent party's time in office, and an adjustment for wartime, while dropping the time trend (Fair, 1996a). Using this revised equation, Fair has forecast the winners of the last three elections.

Fair's work has spawned several other models, devised mostly by other economists who have used his model as a point of departure, then added such variables as stock market performance (Gleisner, 1992; Haynes & Stone, 1994), size of the armed forces and military deaths (Haynes & Stone, 1994; Hibbs, 2000), and federal spending (Cuzán & Bundrick, 2005). Table 1 summarizes the explanatory variables represented in the various models.

In contrast to these economic models, most election models designed by the political scientists who followed in Tufte's footsteps have emphasized public opinion variables alone or in combination with economic variables, as summarized in Table 2.

Table 1. Explanatory Variables in Economists' Models

	Fair (1978)	Gleisner (1992)	Haynes & Stone (1994)	Fair (1996a)	Cuzán & Bundrick (2005)	Hibbs (2000)
Economic Growth	X	X	X	X	X	X
Inflation	X	X	X	X		
Incumbent Party	X		X	X	X	X
Incumbent President	X	X		X		
Time Trend	X					
Stock Market		X	X			
Military Size			X			
War Occurring/ Military Deaths					X	X
Federal Spending					X	
Terms in Office					X	X

Presidential approval ratings were introduced by Sigelman in 1979 in a single-variable regression (Sigelman, 1979; Brody & Sigelman, 1983). Lewis-Beck and Rice then expanded Sigelman's approach by pairing presidential approval ratings with economic growth in a two-variable equation for the 1984 election (1984). In 1988, Abramowitz added to the Lewis-Beck and Rice model a "time for a change" variable that captured the cyclical tendency of voters to alternate parties in the White House every eight years. A modification of the original 1978 Tufte model appeared in 1990 when Campbell and Wink paired campaign polls with economic growth (following an approach earlier suggested by Lewis-Beck, 1985). Then, in 1992, Lewis-Beck and Rice added two variables to their 1984 model: the incumbent party's performance

Table 2. Explanatory Variables in Political Scientists' Models

	Tufte (1978)	Sigelman (1979)	Lewis-Beck & Rice (1984)	Abramowitz (1988)	Campbell & Wink (1990)	Lewis-Beck & Rice (1992)	Norpoth (1995)	Wlezien & Erikson (1996)
Economic Growth	X		X	X	X	X		X
Presidential Approval		X	X	X		X		X
Candidate Preference (polls/surveys)	X				X			
2-term Penalty Cycles				X			X	
Incumbent Party Results, House Elections						X		
Incumbent Share of Primary Vote						X		

in the previous midterm elections and the strength of that party's candidate in the presidential primaries.

Since 1996, a group of political scientists led by James Campbell has presented election forecasts at well-attended sessions held during the annual meeting of the American Political Science Association (APSA), just before Labor Day. By the 2004 APSA meeting, the original Abramowitz and Campbell forecasting models included the same variables, with slight refinements. However, the model used by Lewis-Beck (collaborating with Charles Tien) had been revised twice. Most forecasters who are part of the group have brought some new variables to the effort, which have been used with various combinations of indicators mentioned previously. New variables, and the years they were first reported, include:

- election cycles as an autoregressive process (Norpoth, 1995)
- Index of Leading Economic Indicators, calculated

as an exponential decay over the president's term (Wlezien & Erikson, 1996)
- inflation (Norpoth, 1996)
- the public's assessment of their personal financial situation or of the economy (Holbrook, 1996; Lockerbie, 2000; Lewis-Beck & Tien, 2001)
- likelihood of war, given a Democratic or Republican president (Lewis-Beck & Tien, 1996)
- growth in employment (Lewis-Beck & Tien, 2004)

FORECASTING ACCURACY

The accuracy of regression models in forecasting the outcome of elections is, naturally, of primary interest. The structure of four models has been relatively stable since 1996, having included essentially the same variables during this period. Thus, as shown in Table 3, we can meaningfully compare the performance of these models over time.

It's clear that this group of models has an excellent record for picking the winner. Every forecast correctly

Table 3. Comparing Forecasts of the Incumbent's Percent Share of the Two-Party Vote in Presidential Elections, 1996-2004

Author	1996	Abs. Error	2000	Abs. Error	2004	Abs. Error	Mean Abs. Error 1990-2004
Abramovitz	56.8	2.3	53.2	2.9	53.7	2.5	2.5
Campbell	58.1	3.6	52.8	2.5	52.8	1.6	2.5
Wlezien & Erikson	56.0	1.5	55.2	4.9	52.8[a]	1.6	2.6
Fair	51.2	3.3	50.8	0.5	57.5	6.3	2.8
Actual Vote	54.5		50.3		51.2		

Notes:

[a] This forecast was made by Wlezien and Erikson in June using their original model. In August they introduced a second model that added a third variable (campaign polls) yielding an even more accurate forecast, 51.7% for Bush, for an error of less than half a point (Wlezien & Erikson, 2004).

Data for forecasts in the first three models above were available by the end of July in the respective years, except for Labor Day campaign polls used by Campbell. Resulting forecasts were presented at the annual meetings of the American Political Science Association, near September 1. Forecasts from the fourth model, by Fair, were based on projections of economic data through the third quarter of each election year. Fair's forecasts reported here were made in late July of the election years and posted on his Web site.

Sources:

Election forecasting symposia in the October 1996 issue of *American Politics Quarterly,* 24 (4); March 2001 and October 2004 issues of *PS: Political Science and Politics*, 34 (1) and 37 (4), respectively. Fair 1998, 2002, 2006.

identified the victor in each election from 1996 through 2004. The mean absolute error across all three elections ranged between 2.5% and 2.8%. The strong performance of Fair's model has been achieved without a direct measure of the electorate's evaluation of any political figure, whether the incumbent president or the current candidates. This outcome supports Fair's assumption that presidential elections are driven largely by economic conditions. On the other hand, the more accurate performance of models that incorporate public opinion suggests that the public's assessment of political figures likely has an independent effect on election outcomes.

LEAD TIMES AND THE OUTLOOK FOR 2008

As is typical of models in economics, Fair's methodology makes use of predictions of its independent variables, available from the Fairmodel of the U. S. economy. As a result, the model is able to incorporate third-quarter data and still make forecasts having a long lead time. In fact, Fair's periodic election predictions normally begin two years ahead. By contrast, most political science models use data that are available by midsummer of the election year or later. No effort is made to project those values, and so the lead time is about two to three months.

For the 2008 election, Fair's first forecast was made on November 1, 2006, a two-year lead. His model predicted a loss by the Republican candidate, who was estimated to garner only 46.5% of the two-party vote. At 48%, his January 31, 2008 forecast was somewhat more optimistic, yet still projected a Republican loss.

Election forecasts are not yet available for the three remaining models of long standing, listed in Table 3. However, the outlook for their key indicators suggests that the Republicans' prospects in 2008 do not appear favorable in these models, either:

- Economic forecasts project the growth rate and other economic indicators to be low in the second quarter and in the entire first half.

- President Bush's unusually low approval rating, which has been languishing at about 30% for months, shows no sign of becoming more favorable.
- Given that the Republicans are nearing the end of two consecutive terms in the White House, the historical two-term cyclical pattern is tilted against the Republican candidate.

Campaign polls, an important indicator in Campbell's model, may be an exception to this negative pattern for the Republicans. Among the four long-standing models, only this indicator assesses the relative strength of the incumbent party candidate in the polls. John McCain, the presumptive nominee of his party, has for much of the spring been in a statistical dead heat with his two Democratic rivals. If this pattern continues, McCain could be ahead in the post-Labor Day poll used by Campbell, although it should be noted that there is a tendency for incumbent party candidates to decline in polls as the campaign progresses (Campbell & Wink, 1990).

CONCLUSION

After 30 years, regression modeling continues to be an important tool in forecasting presidential elections. Most models have consistently identified the election winners, even though their forecasts may have been off a few points. And what of the November 2008 vote? Among the models that have maintained a constant structure since 1996, one is projecting a four-point Republican loss. Although forecasts have not yet been made from the other models, if the current pattern among indicators continues, their outlook for the Republicans likely will be mostly negative, as well.

By identifying causes, the regression models have contributed to our understanding of reasons for election outcomes in ways that go beyond forecasting. We know, for example, that – for better or worse – the state of the economy significantly affects election results, with voters usually holding the incumbent party responsible for the country's current economic health. We also

have learned that parties tend to alternate in the White House, following an identifiable cyclical pattern. On balance, regression models that forecast presidential elections provide reasonably accurate forecasts, tend to be well grounded in theory, and have yielded reliable results across time.

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