

The Trial-Heat and Seats-in-Trouble Forecasts of the 2016 Presidential and Congressional Elections

James E. Campbell, *University at Buffalo, SUNY*

In general, election forecasting has become easier in recent years. The increased polarization of the public and the hyper-competitively realigned parties has narrowed the range of plausible election outcomes. As mentioned in the introduction, over the last 30 years, neither party has received more than 54.7% of the two-party national popular vote (Bill Clinton in 1996) or less than 45.3% (Bob Dole in the same election). Three of the seven presidential elections since 1984 have been won with less than 52% of the two-party vote. A tight range of the vote is exactly what one would expect from a pair of highly competitive parties with adherents to each tightly dug into their ideological trenches. If we stick to this range and if its foundation is based on polarized partisanship, then forecasts cannot go as wrong as they could in the good old days when swing voters were (relatively) plentiful and landslides with over 60% of the vote were a real possibility. Presidential election forecasting, in general, ought to be easier (Campbell 2014a).

But forecasting the 2016 election is not forecasting in general. In many respects, 2016 does not look anything like a typical presidential election. The candidates of a typical presidential elections are not bombastic celebrity real estate tycoons opposing a former First Lady, Senator, Secretary of State, and defeated presidential nomination hopeful. Then there are the scandals and the significant internal party divisions, on both sides. Both candidates have sky-high unfavorables, perhaps indicating more late-deciding voters than usual. This election seems more out of a 1960s Allen Drury novel (*Gen-Xers* and *Millennials* may substitute *House of Cards*) than political reality. If ever there were a need for the forecasts' systematic and objective bearings on an election, 2016 is it.

My entry in the forecast symposium offers four models. Two presidential models are examined: the trial-heat and economy model and the convention bump and economy model. Two congressional models are presented as well. These are the seats-in-trouble models for both House and Senate elections. The presidential models predict the percentage of the two-party national popular vote for the in-party candidate, Democrat Hillary Clinton. The congressional models predict the net aggregate seat change for the Democrats.

THE PRESIDENTIAL ELECTION FORECAST MODELS

First, some background on the presidential election forecast models. In evaluating how well preference polls at different

points in the election year predicted the vote, Ken Wink and I in 1990 developed the trial-heat and economy forecasting model (Campbell and Wink 1990). It built on Michael Lewis-Beck's earlier explorations of preference polls as vote predictors (Lewis-Beck 1985, 58). The model consists of two predictive variables: the in-party candidate's two-party share of support on Gallup's trial-heat (preference poll) at Labor Day and the growth rate in the real GDP (initially GNP, until the Bureau of Economic Analysis shifted their featured statistic to GDP before the 1992 election). This model has been modified slightly over the years, primarily to reflect the partial credit or blame going to successor candidates rather than incumbent presidents.¹ In its first use in 1992, it predicted that President George H.W. Bush would receive 47.1% of the two-party vote. He actually received 46.5%, just six-tenths of a percentage point less than predicted (Morin 1992). With the exception of the 2008 election involving the unprecedented and wholly unexpected Wall Street meltdown in the midst of the Fall campaign (Campbell 2010a), the mean absolute error of this model in the five other elections in which it has actually been used is less than two percentage points.² In 2012, this model predicted the 52.0% Obama voter percentage to the first decimal place (Campbell 2012).

With the political parties staging their conventions later in the summer and even into September in the 2004, 2008, and 2012 cycles (the conventions were moved back into July this year) and thereby possible biasing early September poll readings, I developed a companion convention bump and economy model (Campbell 2004). Beyond accommodating later conventions, when taken together with the original model, this companion model provides further independent information on which to base a forecast. In the three elections in which both models have been used, their predictions have never differed by more than a single percentage point of the vote.

Like the trial-heat model, the convention bump model also uses preference polls and the economy to obtain what might be regarded as a more sophisticated reading of the polls, placing them in their current context (the economy) and their historical context (estimating their relationship to the vote in previous elections). The convention bump and economy model includes three predictors: the in-party candidate's two-party share of the pre-convention polls, the net change in the in-party candidate's support after both conventions

are completed, and the second quarter growth rate in the economy (GDP growth adjusted for incumbency as in the trial-heat model). Setting aside the Wall Street meltdown election of 2008, the convention bump and economy has been quite accurate, missing the actual in-party vote percentages by less than two percentage points in both 2004 and 2012.³

The Polls and the Economy

Both presidential models are grounded in “the theory of the predictable campaign” presented in *The American Campaign* (Campbell 2000). The theory proposes that presidential

Like the trial-heat model, the convention bump model also uses preference polls and the economy to obtain what might be regarded as a more sophisticated reading of the polls, placing them in their current context (the economy) and their historical context (estimating their relationship to the vote in previous elections).

elections can be forecast with a good deal of accuracy because many of the effects of presidential campaigns are themselves systematic and predictable. Many campaign effects are predictable because they are shaped by the context in which the campaign takes place. The array of factors establishing that context (principally pre-campaign public opinion, incumbency, and the economy), otherwise known as “the fundamentals,” are known before the fall campaign begins and are available and useful as predictors of the vote in forecasting models.

One of the key predictors of the vote in the trial-heat and economy model are the pre-campaign preference polls. The association between the early September preference polls and the November vote for in-party candidates in 17 presidential elections from 1948 to 2012 is displayed in figure 1. Both the polls and the votes are percentage shares of a two-party division. The diagonal line indicates what one would expect if the polls were naively read as unadjusted precursors of the vote. The flatter sloped dashed line indicates expectations of a bivariate regression. Roughly speaking, the campaign generally cuts apparent leads and deficits in half. This is what one would expect of highly competitive campaigns, a “hidden hand” fundamental. The close proximity of elections to the regression line indicates the strength of these discounted (for competition) polls. Only two elections, Harry Truman’s comeback of 1948 and the Wall Street meltdown of 2008, fall into the discordant upper left and lower right quadrants.

A second fundamental useful for the forecasts is the state of the economy, more specifically measured as the second quarter growth rate in the real GDP. This is plotted in figure 2 against the vote for the 17 elections since 1948. The solid points in the figure are elections with incumbents running. The ringed points are the six open seat elections in this period (1952, 1960, 1968, 1988, 2000, and 2008). The growth of the economy during the second quarter of elections years matters, whether or not the large leverage 1980 election is

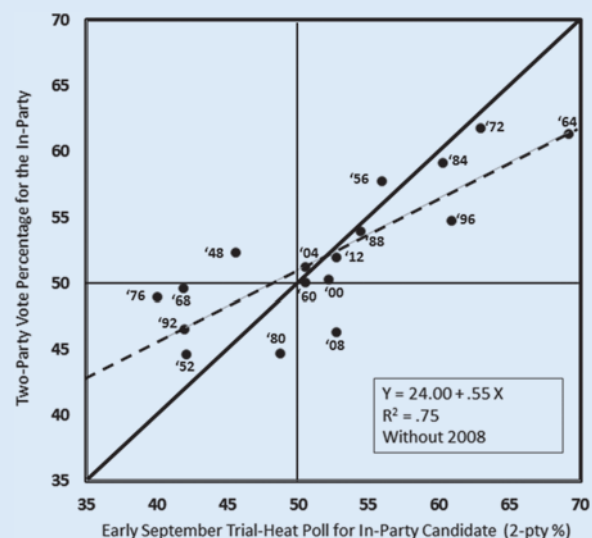
included,⁴ but it is clearly the junior partner in the models. Economic growth before the election year’s second quarter matters and, more importantly, a wide range of non-economic considerations are also important to the vote.

The Presidential Forecast Equations

These two fundamental predictors are combined in the trial-heat and economy model’s regression equation in Table 1. The equation is estimated over the 16 elections from 1948 to 2012, with 2008 excluded. The 2008 election is excluded because the forecasting assumption that no major independent and

unanticipated cataclysmic event intercedes between the time of the forecast and the vote was violated in that election (Campbell 2009; 2010). The adjusted R^2 of the equation is an impressive .90 and the median out-of-sample error is only one percentage point of the vote. The equation indicates that we should expect the in-party candidate to receive about one additional percentage point of the vote for every two percentage points he or she is ahead in the early September poll. The in-party candidate should also be expected to receive about eight-tenths of a percentage point of the vote for every additional percentage point of real GDP growth in the election year’s second quarter.

Figure 1
Early September Trial-Heat Polls and the Two-Party Vote for the In-Party, 1948–2012



Source: Various Gallup Polls.

For in-party candidates who are successor candidates, as Hillary Clinton is in this election, we should expect these economy-based gains or losses to be halved.

Table 1 also presents the convention bump and economy model's regression equation. The adjusted R^2 in this model is just slightly lower and the median out-of-sample error is just a bit higher than those of the trial-heat and economy equation. The pre-convention and economic growth variables make roughly the same contribution to the vote prediction as they did in the first model. The convention bump predictor in this model indicates that about one-quarter of the net convention

presidential vote margin (or prior margin), presidential approval ratings, current seats held, and other structural and historical factors (e.g., realignments). These yielded fairly accurate forecasts, but they failed to take into account how widely national conditions filtered down to local contests and that filtering had changed substantially over time with changing incumbency advantages and party polarization.

To take the aggregate of these local conditions into account adequately required a district by district accounting and one with a long enough history to estimate its relationship with election results. Fortunately, Charlie Cook of the Cook

These yielded fairly accurate forecasts, but they failed to take into account how widely national conditions filtered down to local contests and that filtering had changed substantially over time with changing incumbency advantages and party polarization.

bump survives to affect the eventual vote (Campbell, Cherry, and Wink 1992; Campbell 2000). The net convention bump is the difference in preference polls from before the first convention to after the second convention. In the past, the forecasts of the two models have corresponded quite closely. Their out-of-sample simulated forecasts are very strongly correlated with one another ($r = .93$).

THE CONGRESSIONAL SEAT CHANGE MODELS

My initial attempts to forecast congressional elections were based on the revised theory of surge and decline (Campbell 1986; 1997). Seat change was predicted as a function of the

Political Report had made and published pre-election race-by-race assessments of both House and Senate elections since the mid 1980s and he very generously shared these data with me (Cook 2016). Cook and his associates rate each congressional race in categories of solid, likely, or leaning toward a party or as a toss up.

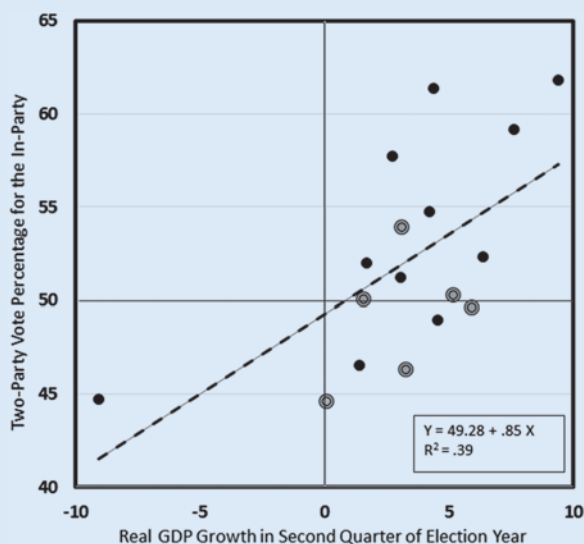
Based upon an examination of seat changes within each of these categories, I devised a seats-in-trouble index for both House and Senate elections. The seats-in-trouble index might be regarded as an extension of Oppenheimer, Stimson, and Waterman's exposure model (1986). Rather than the number of seats nominally in jeopardy, the seats-in-trouble index ventures a count of those actually in danger of being lost. For House elections, the seats-in-trouble index is the difference between the number of current Democratic seats that are rated as only leaning Democratic or worse and the number of current Republican seats in similar jeopardy. For Senate elections, the index is slightly more stringent. It is the net number of a party's seats (Democrats minus Republicans) rated as toss-ups or worse. The indices use ratings available in late August of the election year. The House index has been used in predicting seat change since the 2010 midterm election (Campbell 2010). The Senate index was first used in 2014 (Campbell 2014b).

In 2010 and 2012 with other predictors and in the 2014 midterm by itself, the seats-in-trouble index was quite successful in predicting seat change. No forecast was more accurate in predicting the unprecedented (for modern times) wave election of 2010. It predicted that Republicans would gain over 50 seats and they wound up gaining over 60. The House forecast error in 2012 was six seats and in 2014 only three seats. In its first use in Senate elections in 2014, it predicted Republicans to gain eight seats while they actually gained nine.

Table 2 presents the seats-in-trouble forecast equations for the House and the Senate. The House model indicates that a party can be expected to lose about five seats for every four more that are rated in trouble. In the Senate, seat change is predicted to be about equal to a party's net number of

Figure 2

Second Quarter Real GDP Growth and the Two-Party Vote for the In-Party, 1948–2012



Source: Bureau of Economic Analysis (contemporary measures).

Table 1

Trial-Heat and Convention Bump Forecasting Models for the 2016 Presidential Election, 1948–2016

Predicted variable: The two-party popular vote for the in-party's presidential candidate

| Predictor variables | Trial-Heat and Economy Model | Convention Bump and Economy Model |
|--|------------------------------|-----------------------------------|
| Early September In-Party Preference Poll (2016: 51.2) | .44* (.06) | – |
| Pre-Convention In-Party Preference Poll (2016: 52.2) | – | .41* (.06) |
| Net Convention Bump for the In-Party (2016: .4) | – | .23* (.09) |
| 2 nd qtr. real GDP growth (annualized) – 2.5 with half-credit for successor candidates (2016: -0.7) | .83* (.16) | .93* (.17) |
| Constant | 28.90 (2.83) | 30.28 (2.96) |
| Adjusted R ² | .90 | .88 |
| Standard error of estimate | 1.67 | 1.84 |
| Median out-of-sample absolute error | .97 | 1.28 |
| Durbin-Watson | 2.28 | 2.37 |
| 2016 Forecast for the In-Party | 50.7 | 51.2 |
| Certainty of Predicted Plurality | .69 | .75 |

Note: N = 16. *p<.01, one-tailed. Standard errors are in parentheses. The 2008 case was not included in the estimation or in the out-of-sample error calculations since the catastrophic and unanticipated financial meltdown intervened between the forecast and the election. With 2008 included, the adjusted R² drops to .82 in the trial-heat model and .80 in the convention bump model. The coefficients change by .02 or less with the inclusion of 2008. The decline in real GDP in 1980 was capped at -3.5%.

Table 2

The Seats in Trouble Forecasting Equations for the 2016 US House and the US Senate Elections, 1984–2014

Predicted variable: Net aggregate seat change from the preceding election for the Democratic Party

| Predictor variables | House Seats in Trouble Model | Senate Seats in Trouble Model |
|--|------------------------------|-------------------------------|
| Net Democratic Seats in Trouble (2016: -26 in the House, -7 in the Senate) | -1.25* (.12) | -1.01* (.17) |
| Constant | -.32 (2.29) | .09 (.77) |
| Adjusted R ² | .90 | .76 |
| Standard error of estimate | 8.28 | 2.71 |
| Median out-of-sample absolute error | 5.30 | 2.15 |
| Durbin-Watson | 1.90 | 1.77 |
| 2016 Congressional Forecast | +32D | +7D |
| Certainty of Predicted Party Majority | 61% | 88% |

N=14 for House, 13 for Senate. *p<.01, one-tailed. Standard errors are in parentheses. The equations are estimated using data from 1988 and the eleven national elections from 1992 to 2012. Data availability permitted the inclusion of 1984 in the House forecast, but not in the Senate. The seats in trouble index counts a party's seats as vulnerable if they are rated by the Cook Political Report in early August (when available) as leaning or worse for the party currently holding the seat in House races and toss-ups or worse for the current party in Senate races. The Senate certainty assumes a Democratic president and a 50–50 split in the Senate. The likelihood of a Democratic Senate majority with a Republican president (51D to 49R) is 73%.

vulnerable seats. The median out-of-sample seat loss errors has been about five or six seats in House elections and about two seats in Senate elections.

THE 2016 PRESIDENTIAL AND CONGRESSIONAL FORECASTS

So what do the presidential and congressional forecasts indicate we should expect the electorate to do this November?

The 2016 presidential election presents an unexpected problem for the two presidential election models. The forecasts of both models depend on presidential trial-heat or preference polls. More specifically, they have depended on and have been estimated using Gallup preference poll data. Since 1936, Gallup has conducted surveys measuring presidential preferences from early in the election year (usually June or even earlier) to Election Day. This year they have not. In the absence of Gallup data, I have used the median of the seven national polls reported in the Real Clear Politics listing of polls around the target date set for the Gallup poll.

The forecasts of the two presidential election models are as follows. Based on the August report by BEA of the second quarter GDP growth rate of 1.1%, Hillary Clinton's 52.2% of two-party support in the preconvention polls, and a net convention bump for Clinton of 0.4%, the convention bump and economy model forecasts that in-party candidate Hillary Clinton should be expected to receive 51.2% of the national two-party presidential vote. Based on the out-of-sample errors of this forecast model, we should be 75% certain that Clinton will win the plurality of the national popular vote. Based on the same measure of second quarter GDP growth and Hillary Clinton's 51.2% of two-party support in the early September trial-heat polls, the trial-heat and economy model predicts that Hillary Clinton should be

expected to receive 50.7% of the national two-party presidential vote. This model's out-of-sample errors indicate that we should be 69% certain that Clinton will win the plurality of the national popular vote.

The convention bump and economy forecast was made on August 26, 74 days before the election, and the trial-heat and economy forecast was made on September 9, 60 days before the election.

Turning to the congressional elections, the 2016 the seats-in-trouble forecasts indicate that Democrats are likely to gain about 32 seats in the House and seven seats in the Senate. A gain of 32 for Democrats in the House would bring their numbers to 220 members. The forecasts are based on the Cook Report's House ratings of August 18, 2016 that indicated that seven Democratic seats and 33 Republican seats were vulnerable, a net of 26 favoring the Democrats. The Senate ratings of August 19 indicate one Democratic seats and eight Republican seats were in trouble, giving Democrats a net advantage of seven seats. Based on past errors in the forecasting equations, there is 61% chance of Democrats gaining control of the House as a result of the 2016 election. Democratic prospects of being in the majority in the Senate after the election are roughly 88% with a Democratic president and about 73% with a Republican president. The House and Senate forecasts were made on August 19, 81 days before the election. ■

NOTES

1. The successor versus incumbent adjustment involves first centering the GDP around an expected level of 2.5 percentage points. This was determined by an examination of the historical relationship of the second-quarter economy to the vote (Campbell 2004). This is the value of the variable when an incumbent is in the race. When a successor candidate (non-incumbent) is running as the in-party candidate, this centered value is halved. The successor, in effect, is awarded half the credit or half the blame that would have been given to an incumbent.
2. The history of in-party forecasts, votes, and absolute vote errors for the Trial-heat and Economy model is as follows: 1992, forecast 47.1, vote 46.5, error 0.6; 1996, forecast 58.1, vote 54.7, error 3.4; 2000, forecast 52.8, vote 50.3, error 2.5; 2004, forecast 53.8, vote 51.2, error 2.6; 2008, forecast 52.7, vote 46.3, error 6.4; and 2012, forecast 52.0, vote 52.0, error 0.0.
3. The history of in-party forecasts, votes, and absolute vote errors for the Convention Bump and Economy model is as follows: 2004, forecast 52.8, vote 51.2, error 1.6; 2008, forecast 52.2, vote 46.3, error 5.9; and 2012, forecast 51.3, vote 52.0, error 0.7.
4. Excluding the high leverage 1980 case with its deep economic downturn would increase the estimated impact of the second quarter growth rate on forecasts. As one would expect, diminishing negative returns set in well before reaching the nine percentage point rate of decline in GDP experienced in the second quarter under President Carter in the 1980 election. To correct for this, the decline in real GDP in the second quarter

of 1980 was capped at -3.5%, rather than the -9.1% reported at the time or the -7.9% indicated in the BEA's current series. This is still more than 3.5 points lower growth than in any other election.

REFERENCES

- Campbell, James E. 1986. "Forecasting the 1986 Midterm Elections to the House of Representatives." *PS: Political Science & Politics* 19 (1): 83-7.
- . 1997. *The Presidential Pulse of Congressional Elections*, 2nd edition, Lexington, KY: The University Press of Kentucky, 1997.
- . 2000. *The American Campaign: US Presidential Campaigns and the National Vote*, College Station: Texas A&M University Press. Second edition published in 2008.
- . 2004. "Forecasting the Presidential Vote in 2004: Placing Preference Polls in Context." *PS: Political Science & Politics* 37 (4): 763-67.
- . 2009. "The 2008 Campaign and the Forecasts Derailed." *PS: Political Science & Politics* 42 (1): 19-20.
- . 2010a. "The Exceptional Election of 2008: Performance, Values, and Crisis" *Presidential Studies Quarterly* 40 (2): 225-46.
- . 2010b. "The Seats in Trouble Forecast of the 2010 Elections to the US House." *PS: Political Science & Politics* 43 (4): 627-30.
- . 2012. "Forecasting the Presidential and Congressional Elections of 2012: The Trial-Heat and the Seats-in-Trouble Models," *PS: Political Science & Politics* 45 (4): 630-34.
- . 2014a. "Issues in Presidential Election Forecasting: Election Margins, Incumbency, and Model Credibility," *PS: Political Science & Politics* 47 (2): 301-3.
- . 2014b. "The Seats-in-Trouble Forecast of the 2014 Midterm Congressional Elections." *PS: Political Science & Politics* 47 (4): 779-81.
- Campbell, James E., Lynna L. Cherry and Kenneth A. Wink. 1992. "The Convention Bump," *American Politics Quarterly* 20 (3): 287-307.
- Campbell, James E. and Kenneth A. Wink. 1990. "Trial-Heat Forecasts of the Presidential Vote," *American Politics Quarterly* 18 (3): 251-69.
- Cook, Charlie. 2016. The Cook Political Report, <http://www.cookpolitical.com/>.
- Lewis-Beck, Michael S. 1985. "Election Forecasts in 1984: How Accurate Were They?" *PS: Political Science & Politics* 18 (1): 53-62.
- Morin, Rich. 1992. "Pollsters' 'nutty' calculations added up on day that counted: In academia, however, one well-known political crystal ball lies shattered," *The Washington Post*, (November 5), p.A37.
- Oppenheimer, Bruce I., James A. Stimson, and Richard W Waterman. 1986. "Interpreting U.S. Congressional Elections: The Exposure Thesis." *Legislative Studies Quarterly* 11: 227-47.