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Abstract

Ideally, presidential elections should be decided based on how the candidates would handle issues facing the country. If so, knowledge about the voters' perception of the candidates should help to forecast election outcomes. Our model, named *PollyIssues*, provides a forecast of the winner of the popular vote in U.S. Presidential Elections based on the voters' overall perception of which candidate will do the best job in handle the issues facing the country. The PollyIssues correctly picked the winner for the last ten elections from 1972 to 2008 and provided an idea of the margin of victory. In predicting the two-party vote percentages for the last three elections from 2000 to 2008, its out-of-sample forecasts outperformed those derived from well-established econometric models.

Introduction

For three decades now, economists and political scientists have used regression models to forecast the outcome of U.S. Presidential Elections. The majority of approaches focus on economic indicators (like growth or inflation), often accompanied by a measure of public opinion. In analyzing forecasts from four well-established models for the last three elections from 1996 to 2004, Jones and Cuzán (2008) report that models that incorporate public opinion in addition to economic conditions appear to be more accurate than models that focus solely on economic variables. To include public opinion, those models use aggregated indicators like presidential approval or trial-heat polls. That said, none of the models incorporate the voters' perception of how the candidates would handle the issues.

Issues play a fundamental role in election campaigns. They are discussed in the media which often makes voters aware of what the candidates stand for. In recent years, an increasing number of polls have been directed at exploring voters' perceptions about the issues and the internet has made this information more readily available. This enables voters to select the candidate they believe can most effectively handle the issues of concern to them. Acting rationally, voters should select the candidate whose positions on issues appear most beneficial. If so, knowledge of the relationship between voters' perceptions and candidates' positions should be useful in forecasting the outcomes of elections. In addition, such knowledge can help candidates to develop their campaign strategies in explaining how they would handle the issues. Also, it advises candidates to communicating information that demonstrates their ability to deal with certain issues.

We applied the index method to predict election outcomes from voters' perceptions of how the candidates would handle the issues facing the country.

The Index Method

Subjective indexes, or "experience tables", have long been used for forecasting and can be traced back to Benjamin Franklin's "prudential algebra".[1] Analysts prepare a list of key variables and determine whether they are favorable (+1), unfavorable (-1), or indeterminate (0) in their influence on a certain outcome. Alternatively, the scoring could be 1 for a positive position and zero otherwise. Then, they simply add the scores and use the total to calculate the forecast.

The index method has been used for various types of forecasting problems. For example, Burgess (1939) describes its use in predicting the success of paroling individuals from prison. Based on a

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[1] See http://homepage3.nifty.com/hiway/dm/franklin.htm

list of 25 factors, which were rated either "favorable" (+1) or "unfavorable" (0), an index score was calculated for each individual. Then, one examined available data and determined the rate of successful parolees for each score. This approach was questioned since Burgess (1939) did not assess the relative importance of different variables; all variables were assigned a unit weight of "1". Also, no consideration was given to the magnitude (i.e. *how* favorable the ratings were). In response, Glueck and Glueck (1959, pp.23) suggested using only a small number of variables and assigning different weights to each variable by using regression models. However, in addressing this issue, Gough (1962) did not find evidence that supported the use of regression models over index scores or unit weighting, respectively.

Analyzing four data sets, Dawes and Corrigan (1974) concluded that unit weighting is superior to regression if (a) each variable has a monotone relationship with the outcome, (b) measurement errors are present, and (c) deviations from optimal weights do not make much practical difference.

Einhorn and Hogarth (1975) showed analytically that, in prediction, simple unit weighting is often superior and only rarely inferior to regression. They concluded that the predictive ability of regression is poor if sample size is small and the number of predictor variables high.

Armstrong's (1985, p.230) review of the literature led to similar conclusions. Regression was slightly more accurate in three studies (for academic performance, personnel selection, and medicine) but less accurate in five (three on academic performance, and one each on personnel selection and psychology).

Numerous rules of thumb exist for the necessary ratio of observations to predictors. For *fitting data to a model*, 15 to 20 observations per predictor are seen as necessary for regression to do better than unit weights. For *prediction*, Dana and Dawes (2004) are more conservative in suggesting that regression should not be used unless sample size is larger than 100 observations per predictor. They conclude that "regression coefficients should almost never be used for social science predictions" (Dana and Dawes 2004: 328, p. 328). In sum, while regression is useful for fitting a model to existing data, unit weighting should be used when the number of observations is small and explanatory variables high, measurement errors are present, and there are correlations among the variables. These are the conditions encountered in election forecasting.

Using unit weights, sample size is unimportant since weights do not have to be estimated from the data and, therefore, there is no need to initially fit the model to the data. Thus, variables do not have to remain constant over time and one can include as many variables in the model as

necessary. This is an important advantage of the index method since having all relevant variables in the model is more important than their weighting; in particular, as specific weights become less important with an increasing number of predictors. In sum, indexes based on unit weighting can provide useful forecasts in situations involving many causal variables, good knowledge about the variables, and limited data. In addition, they are easier to use and to understand than regression models.

The Index Method in Election Forecasting

For forecasting U.S. presidential elections, data for the majority of regression models is limited to about only 25 elections. In fact, most models use no more than 15 observations and include from two to sometimes as many as seven explanatory variables (Jones and Cuzán 2008). The number of potential variables is large and the number of observations small. Forecasting of U.S. Presidential elections lends itself to the use of index models.

Lichtman (2008) was the first to use the index model to forecast U.S. presidential elections. His model has provided the correct forecast retrospectively in 31 elections and prospectively for 7 elections. No regression model has matched this level of accuracy in picking the winner.

Armstrong and Cuzán (2006) transformed Lichtman's model into a quantitative model and compared the derived forecasts against forecasts from three traditional regression models for six US presidential elections from 1984 to 2004. Lichtman's "Keys" performed well, leading to forecast errors almost as low as those of the best regression models. In 2008, the "Keys" forecast was more accurate than the forecasts derived from the same three models. This forecast was provided in August 2007, more than one year before Election Day. This was achieved even though the variables were held constant over time and the model was based only on the judgments of a single rater: Lichtman.

In a recent study, Cuzán and Bundrick (2008) applied an equal weighting approach to three traditional regression models: Fair's equation (Fair 1978) and two variations of the fiscal model (Cuzán and Heggen 1984). Over 23 elections from 1916 to 2004, they showed that when making out-of-sample predictions, the equal weighting scheme outperformed two of the three regression models – and did equally well as the third. When they used data from the 32 elections from 1880 to 2004, Cuzán and Bundrick (2008) found equal weighting yielded a lower mean absolute error compared to all three regression models.

PollyIssues

Petrocik (1996), in his content analysis of news reports and voter reports of important problems, found that, retrospectively, election outcomes follow the problem concerns of voters. Accordingly, PollyIssues is based on the assumption that voters select the candidate they believe will perform best in handling the issues. In particular, we assume that for the voter it is important *whether* candidates will be able to handle the issues.

We analyzed data from polls that asked voters which candidate would be more successful in solving a problem. For example: *"Now I'm going to mention a few issues and for each one, please tell me if you think Barack Obama or John McCain would better handle that issue if they were elected president: terrorism, the economy, illegal immigration, etc."* (cf. CNN/Opinion Research Corporation Poll. July 27-29, 2008). Thus, identifying the issues for the respective election year depended on whether an issue was raised in a poll. While some polls clearly referred to common issues (like 'economy', the 'war in Iraq', 'health care', 'education', etc.), others were phrased more vaguely. In such cases, we followed the *Oxford Dictionary's* definition of 'issue' and included a variable if it referred to "an important topic or problem for debate or discussion". For example, we included 'solving the country's problems', 'getting things done in Washington', or 'crisis management' as issues. On the other hand, we excluded polls that asked people's opinion about the candidates' characteristics (like 'honesty,' 'trustworthiness,' 'qualified to be president', 'better leader,' etc.) or did not relate to problems (like 'increasing hope,' or 'making people proud to be Americans'). Inevitably, the selection of issues was subject to some subjectivity. But, again, it is one of the main advantages of the index method that one does not have to exactly determine the reasons for why to include a variable. Important is only that one can assess how the variable affects the outcome. We expected additional issues to increase forecasting accuracy rather than harm it.

For each issue, we derived the voters' support for the candidates. (Early in the campaign, when the candidates were still unknown, these polls asked about voters' support for the Parties). In cases where different polls obtained information on the same issue, we averaged the poll results to calculate the voters' support for the candidates. In case of repeated polls by the same polling institute, we first averaged the poll results for each polling institute. Then, for each issue, we generated index scores for the candidates; assigning "1" to the candidate receiving the higher voter support and "0" to the opponent. In case candidates achieved equal voter support, we assigned "0" to both candidates. Finally, we summed the index scores to determine the election winner. We show the calculation of a two-issue index in Table 1 as an example of how we derived our indexes from poll data.

Table 1: Example calculation of simple 2-issue index scores

ISSUE	Poll	Voter support		Index scores	
		McCain	Obama	McCain	Obama
Health care	ABC News/Washington Post Poll. June 12-15, 2008	33	53		
	Diageo/Hotline Poll. June 5-8, 2008	24	54	0	1
Mean		28.5	53.5		
Terrorism / Homeland Security	ABC News/Washington Post Poll. July 10-13, 2008	49	43		
	Time Poll. June 18-25, 2008	53	33	1	0
Mean		51	38		
			Sum of index scores	1	1

Performance of PollyIssues for the ten elections from 1972 to 2008

We calculated forecasts for the ten US Presidential Elections from 1972 to 2008. We obtained polling data by searching the *iPOLL Databank* of the Roper Center for Public Opinion Research for the time frame starting exactly one year before the respective election days. For the elections from 1972 to 1984, we manually searched all available polls. For the elections from 1980 to 2008, we used the search string "better job OR best job" to manage the vast amount of available polls. For 2008, we also obtained data from www.pollingreport.com. Altogether, we identified a total of 395 relevant polls for the 10 elections.[2] As shown in Table 2, the amount of available information (polls and issues) varied substantially over the nine elections and, in general, the information has grown rapidly. For the five elections from 1972 to 1988, few polls were available, which led to a smaller number of issues, in particular for the elections in 1976 and 1980. From 1992 on, we were able to access a large number of polls. Accordingly, the number of issues was higher, too.

Table 2: PollyIssues: Forecasting the winner for 1972 to 2008

Election year	No. of Polls	No. of Issues	Index scores for (incumbent grey)		Incumbent's (%)	
			Republican candidate	Democratic candidate	PollyIssues score (PI)	Popular two-party vote
1972	2	20	14	6	70.0	61.8
1976	2	9	4	5	44.4	48.9
1980	5	11	6	5	45.5	44.7
1984	3	14	10	4	71.4	59.2
1988	6	23	13	10	56.5	53.9
1992	62	41	9	32	22.0	46.5
1996	71	29	6	23	79.3	54.7
2000	67	43	20	23	53.5	50.3
2004	97	35	18	17	51.4	51.2
2008	80	54	16	38	29.6	46.6

[1] based on the popular, rather than electoral college, vote

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[2] A complete list of the issue-based used in this study can be found at
http://spreadsheets.google.com/pub?key=pr1ZdfEZ874lK4sMT6HXqXQ

Forecasting the Election Winner

As we show in Table 2, the incumbent's PollyIssues score (PI) correctly predicted the winner of
the popular (not electoral college[3]) vote for all 10 elections. The incumbent's PI is the percentage
of the issues that favor a given candidate. If the incumbent's PI was higher than 50.0%, he would
be predicted as the winner. The aggregated polling data for each election is provided in
Appendices 1 to 9.

Forecasting the Vote Percentage

We tested how well PollyIssues forecasts the candidates' actual percentage of the two-party vote
for the past ten elections.

We used the incumbent's PI as the explanatory variable. The dependent variable was the actual
two-party vote share received by the candidate of the incumbent party (V). Using the number of
polls per election year as weights, we performed a linear regression by relating V to PI for the
period from 1972 to 2008. We derived the following vote equation: $V = 0.425 + 0.159 * PI$
(standard error: 0.08). Thus, the model predicts that an incumbent would start with 42.5% of the
vote, plus a share depending on the PI. If the percentage of issues favoring the incumbent went up
by 10%, the incumbent's vote share would go up by 1.59%.

Table 3: PollyIssues' in-sample forecasts and actual votes for the incumbents (1972 to 2008)

Election	Two-party vote	PollyIssues: Predicted vote	Absolute error in %
1972	61.8	53.6	8.2
1976	48.9	49.5	0.6
1980	44.7	49.7	5.0
1984	59.2	53.8	5.4
1988	53.9	51.5	2.4
1992	46.5	46.0	0.5
1996	54.7	55.1	0.4
2000	50.3	51.0	0.3
2004	51.2	50.6	0.6
2008	46.6	47.2	0.6
		MAE (1972-2008)	2.5
		MAE (1992-2008)	0.6

Table 3 shows the results for each year, reported as ex post, in-sample forecasts of the
incumbents' popular two-party vote. Again, the model predicted the winners correctly for all 10

elections. The model fits the data fairly well, showing an overall MAE of 2.4%. Except for 1976, errors were large for early elections for which only a limited number of polls (and issues) were available. For the five most recent elections from 1992 to 2008, errors were small, with a MAE of 0.5%.

However, the critical test is how well the model forecasts prospectively. We generated out-of-sample forecasts for the last three elections from 2000 to 2008 by successive updating. That is, we used data from historical elections prior to the respective election year (i.e. we created forecasts for years not included in the estimation sample). Again, the number of available polls per year was used as weights. The results are shown in Table 4, compared to out-of-sample forecasts from four well-established models. Although drawing on a small number of elections, PollyIssues outperformed all four models. It was second most accurate for 2000 and most accurate for 2004 and 2008 (along with Abramowitz (2008)). Overall, its MAE was 0.8 percentage points, less than half the MAE of the two second best models. In addition, PollyIssues was more accurate than the combined forecasts of all five models for each election as well as over all three elections.

Table 4: PollyIssues vs. traditional regression models:
Out-of-sample forecasts of the incumbent's percent share of the two-party vote for 2000 to 2008

Model	2000	AE	2004	AE	2008	AE	MAE
Actual vote	50.3	-	51.2	-	46.6	-	**-**
1. PollyIssues	51.2	0.9	50.6	0.6	47.5	0.9	**0.8**
2. Abramowitz (2008)	53.2	2.9	53.7	2.5	45.7	0.9	**2.1**
3. Campbell (2008)	52.8	2.5	52.8	1.6	48.9[4]	2.3	**2.1**
4. Fair (1978)	50.8	0.5	57.5	6.3	48.1	1.5	**2.8**
5. Erikson and Wlezien (2008)	55.2	4.9	52.7	1.5	47.8	1.2	**2.5**
Combined (2,3,4 & 5)	53.0	2.7	54.2	3.0	47.6	1.0	**1.9**

Discussion

PollyIssues forecasts can be made as soon as the first "issues" poll appears. In 2008, the first poll was published on March 2, asking voter's about their opinion on the candidates' performance on eight issues. At that time, PollyIssues forecasted McCain to achieve 46.9% of the popular two-party vote (vs. Obama 53.1%). Figure 1 shows how the PollyIssues percentage forecast

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[3] To predict the Electoral College vote, which is the mechanism by which US presidents are ultimately elected, it would first be necessary to derive forecasts for each state. In practice, the popular vote and the Electoral College vote have favored the same candidate in 52 out of 55 elections.
[4] Jim Campbell revised his original forecast of 52.7% for the Republicans by incorporating the economic growth rate of the second quarter and the October Gallup tracking poll.

developed over time as the candidates reveal information about how they can handle the issues. At the same time, the voters learn about the candidates' plans and their abilities. Over time, the forecast remained quite stable, ranging between 46.4% and 49.7% for McCain. Thus, at any time, PollyIssues correctly predicted Obama as the election winner. From mid-June, with an increasing number of issues, the forecast ranged in the narrow band from 47.3% to 48.1%. The final forecast of 47.5% did not change from October 12.

Figure 1: Predicted two-party vote share for John McCain
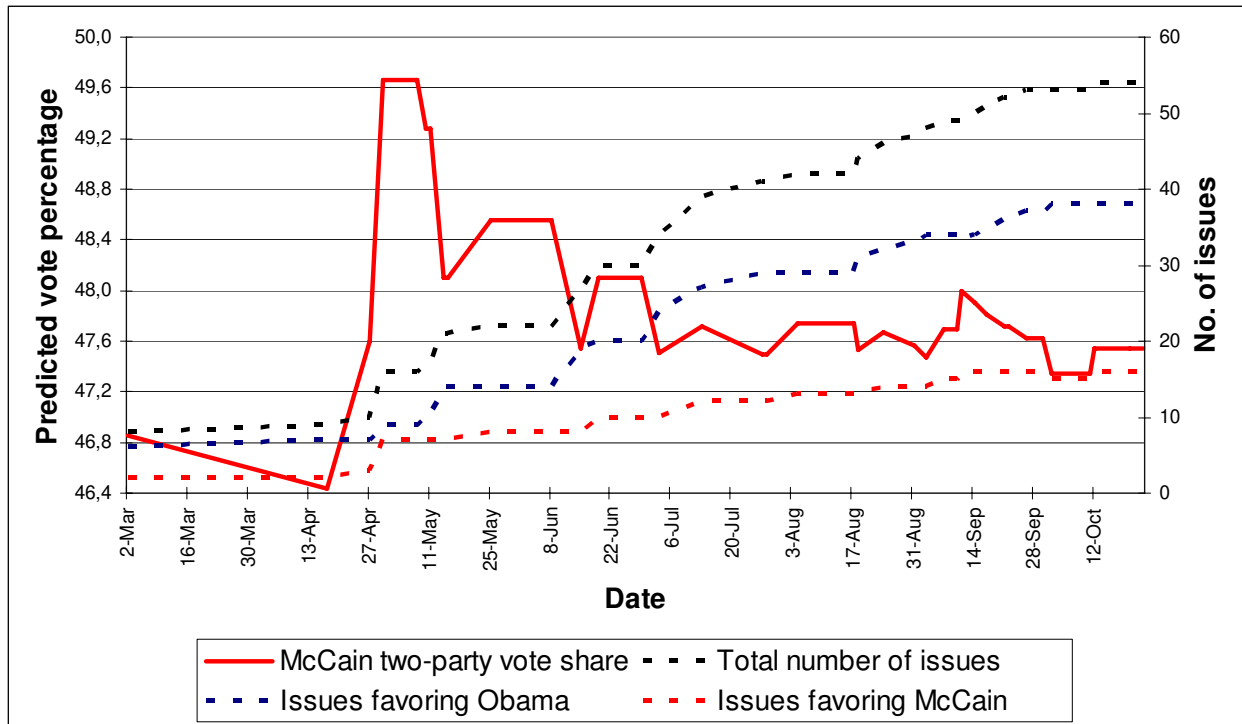
A candidate's issue handling reputation is influenced by issue ownership of the candidate's party (Petrocik 1996). Figure 2 shows how voters perceived the candidates' issue handling competence for the elections from 1972 to 2008.[5] Consistently, Democrats were seen better to deal with welfare issues. Except for 1996 and 2000, voters favored the Republican candidate on foreign affairs and defense issues. Perceptions for economic and social issues were mixed.

Note that, as the number of issues increases for more recent elections, differences between the candidates become clearer. In the last two elections, Democrats were favored for economic and welfare issues. The Republicans gained back and enhanced their advantage for foreign policy and

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defense in a post 9/11 world. Voter support on social issues and others switched from Republicans to Democrats.

Apparently, candidates can influence their issue handling reputation by effective campaigning. If issue handling reputation for a certain problem is about equal for both candidates, a candidate could increase his marketing effort to gain ownership of this issue. Also, as shown by Petrocik (1996, p.830), for the voter "almost any problem is important". Thus, candidates could raise and promote issues that favor them but which have not received attention in the public yet. Finally, candidates could adopt new or revised positions and diverge from traditional party views. By emphasizing such changes, a candidate might be able to change his issue handling reputation as perceived by voters.

Figure 2: Perceived issue handling competence of candidates (1972-2008)
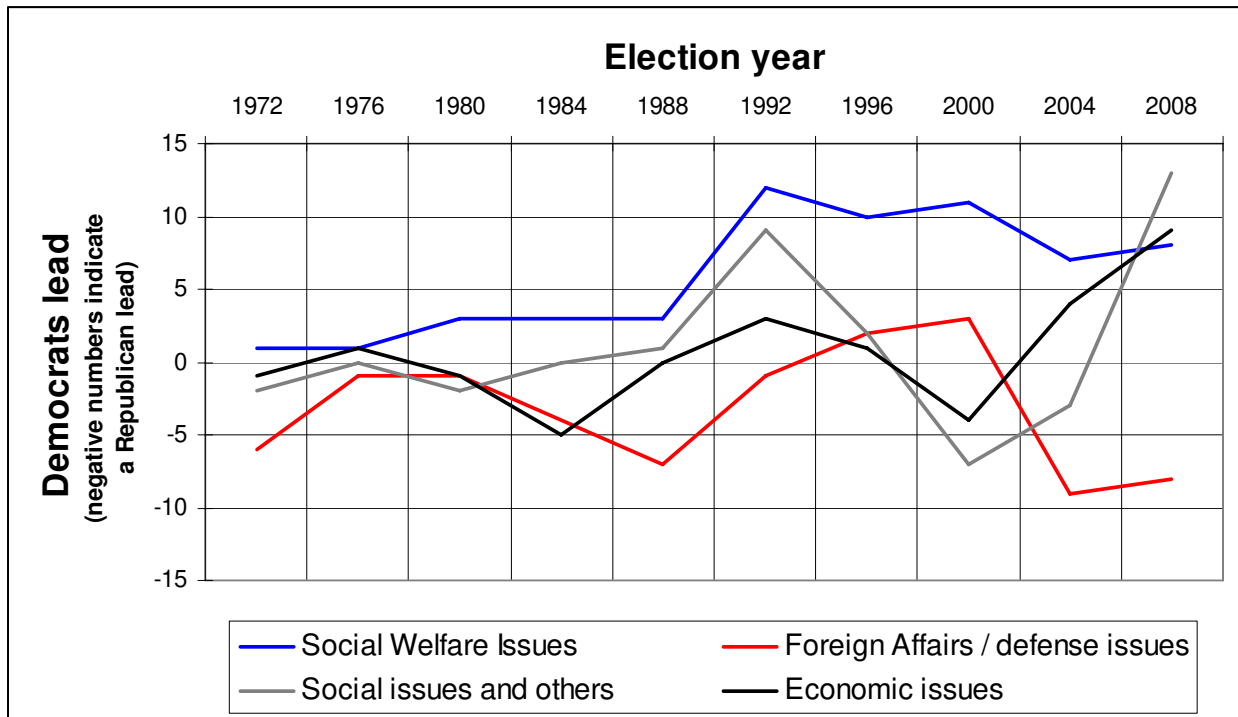
In our model, we obtained voter opinion as the average of all available polls during the campaign. This accounts for rapid and short-term shifts in issue reputation and makes the forecast more stable. For each issue, the candidates' issue handling reputation remained stable, except for one: the nomination of the candidate running for vice-president. Barack Obama chose Joe Biden who has been in the Senate for 35 years. John McCain chose Sarah Palin, a female Governor of

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[5] See Appendices 1 to 10 for the respective data.

Alaska that has been in office for less than two years. McCain's decision of choosing the virtually unknown Sarah Palin has received immense media attention until Election Day.

Figure 3 shows how voters support for VP choice has changed over time. The first poll came out on August 31, shortly after the nomination of both running mates. Initially, voters favored Obama's choice of the well-experienced and well-known Biden. However, starting with her convention speech on September 3 and increasing media coverage, Sarah Palin's popularity increased. In response, on September 11, voters support for VP choice changed to McCain's favor. From then on, no new poll on that issue was released until the vice presidential debate on October 2, at which Senator Biden was perceived as the winner. In addition, Sarah Palin's popularity decreased due to negative media coverage. With new polls released at the beginning of October, again Obama was favored on this issue.

Figure 3: Issue handling reputation for vice-president choice
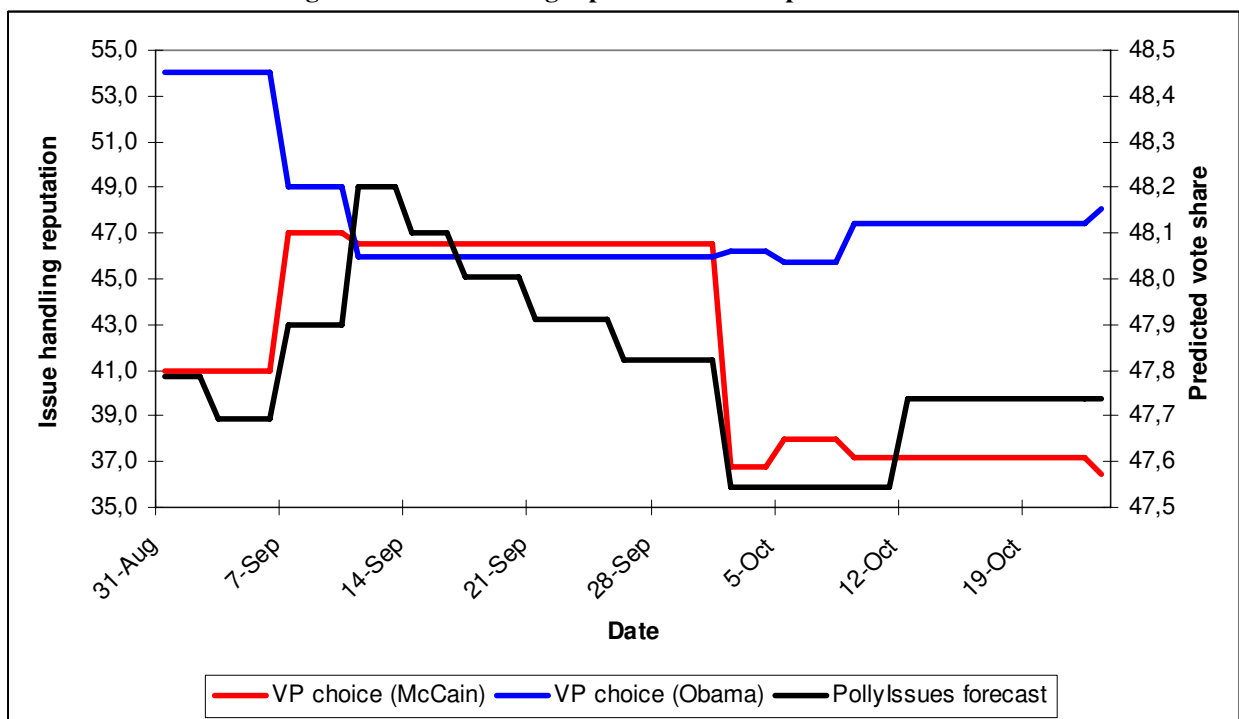
The PollyIssues model can help candidates in identifying issues to focus on in their campaign. It is simple to use and easy to understand. Also, it provides a forecast about the chances of candidates to win the election. The beauty of the model is that it can incorporate a vast amount of information from polls by including as many variables as necessary.

Unfortunately, the simplicity of the index model may be the method's biggest drawback. Summarizing evidence from the literature, Hogarth (2006) showed that people exhibit a general

resistance to simple solutions. Although there is evidence that simple models can outperform more complicated ones, there is a belief that complex methods are necessary to solve complex problems.

Conclusion

We applied the index method to the ten US Presidential Elections from 1972 to 2008 and provided a forecast based on voters' perceptions on how the candidates will handle the *issues*. For all ten elections, PollyIssues correctly picked the winner. Moreover, the approach provided accurate out-of-sample forecasts for the last three elections from 2000 to 2008, outperforming four well-established regression models.

We believe our approach will make a useful contribution to forecasting election winners. In addition, PollyIssues can help candidates in developing and communicating their strategies of how to handle the issues facing the country.

The index method draws on different information and uses a different method. Furthermore, it is simple to use and easy to understand.

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Appendix

Appendix 1: Polling data and index scores for issues (1972)

Issue	No. of polls	Voter support for		Index scores for	
		Richard Nixon (Rep)	George McGovern (Dem)	Richard Nixon (Rep)	George McGovern (Dem)
Social welfare issues					
Welfare		44.3	30.7	1	0
Helping poor people	2	27.0	48.0	0	1
Helping minorities	2	28.5	45.5	0	1
Foreign affairs / defense issues					
Russia and China	2	71.0	11.5	1	0
Keeping America strong	2	69.5	15.0	1	0
Israel	1	48.0	15.0	1	0
Defense spending	2	61.5	38.5	1	0
Vietnam	2	50.0	37.5	1	0
Keeping America out of war	2	55.5	44.5	1	0
Economic issues					
Protect big-business interests	1	70.0	10.0	1	0
Keep prices down	2	42.0	26.0	1	0
Jobs	3	37.3	33.7	1	0
Taxes	3	32.7	44.7	0	1
Federal budget	1	33.0	35.0	0	1
Social issues					
Unifying the country	1	46.0	27.0	1	0
Moral values	1	44.0	24.0	1	0
Young people	1	33.0	45.0	0	1
Women	1	26.0	35.0	0	1
Other					
Law and order	2	52.5	29.0	1	0
Corruption	1	31.0	25.0	1	0
Overall index scores				**14**	**6**

Appendix 2: Polling data and index scores for issues (1976)

Issue	No. polls	Voter support for		Index scores for	
		Gerald Ford (Rep)	Jimmy Carter (Dem)	Gerald Ford (Rep)	Jimmy Carter (Dem)
Social welfare issues					
Helping people like yourself	2	24.5	45.0	0	1
Foreign affairs / defense issue					
International crisis	1	38.0	30.0	1	0
Economic issues					
Economy	2	40.0	38.5	1	0
Taxes	1	45.0	37.0	1	0
Federal budget	1	24.0	38.0	0	1
Inflation	1	28.0	37.0	0	1
Jobs	1	24.0	46.0	0	1
Other					
Solving the countries problems	1	44.0	41.0	1	0
Reform government	1	36.0	47.0	0	1
Overall index scores				**4**	**5**

Appendix 3: Polling data and index scores for issues (1980)

Issue	No. polls	Voter support for		Index scores for	
		Ronald Reagan (Rep)	Jimmy Carter (Dem)	Ronald Reagan (Rep)	Jimmy Carter (Dem)
Social welfare issues					
Helping people like yourself	2	34.0	50.0	0	1
Healthcare	2	14.5	23.5	0	1
Helping the elderly	1	20.0	26.0	0	1
Foreign affairs / defense issues					
Defense policy	2	28.5	20.0	1	0
Foreign policy	2	24.0	23.5	1	0
Iran hostage crisis	1	27.0	43.0	0	1
Economic issues					
Inflation	2	24.0	18.0	1	0
Jobs	2	21.0	18.5	1	0
Energy	1	22.0	23.0	0	1
Other					
Getting things done in Washington	1	42.0	41.0	1	0
Solving the countries problems	2	26.5	25.5	1	0
Overall index scores				**6**	**5**

Appendix 4: Polling data and index scores for issues (1984)

Issue	No. polls	Voter support for		Index scores for	
		Ronald Reagan (Rep)	Walter Mondale (Dem)	Ronald Reagan (Rep)	Walter Mondale (Dem)
Social welfare issues					
Social Security	3	32.0	52.0	0	1
Helping the middle class	2	36.0	50.5	0	1
Being fair to all people	3	37.0	43.7	0	1
Foreign affairs / defence issues					
Keeping America strong	3	60.0	26.0	1	0
International crisis	3	55.0	28.7	1	0
Foreign Policy	3	51.0	33.0	1	0
Keeping America out of war	3	43.3	39.7	1	0
Economic issues					
Inflation	3	53.3	31.3	1	0
Economy	3	52.0	34.0	1	0
Jobs	3	49.0	38.3	1	0
Taxes	1	47.0	41.0	1	0
Budget deficit	1	41.0	39.0	1	0
Social issues					
Vice President choice	1	66.0	25.0	1	0
Women	3	25.7	53.7	0	1
Overall index scores				**10**	**4**

Appendix 5: Polling data and index scores for issues (1988)

Issue	No. polls	Voter support for		Index scores for	
		George Bush (Rep)	Michael Dukakis (Dem)	George Bush (Rep)	Michael Dukakis (Dem)
Social welfare issues					
Health care	1	22.0	70.0	0	1
Helping poor people	3	21.7	62.3	0	1
Education	1	33.0	56.0	0	1
Foreign affairs / defence issues					
Military	1	70.0	20.0	1	0
Foreign Policy	1	70.0	22.0	1	0
Defence	1	61.0	30.0	1	0
Soviet Union	3	53.0	30.0	1	0
Arms control agreements	1	49.0	38.0	1	0
Terrorism	1	47.0	36.0	1	0
Keeping country out of war	3	42.7	38.7	1	0
Economic issues					
Inflation	1	53.0	31.0	1	0
Taxes	1	50.0	41.0	1	0
Economy	5	45.9	39.3	1	0
Jobs	1	38.0	54.0	0	1
Trade	1	41.0	46.0	0	1
Budget Deficit	3	38.3	41.0	0	1
Social issues and others					
Familiy values	1	48.0	7.0	1	0
Crime	2	44.0	36.0	1	0
Drugs	3	37.0	35.0	1	0
Civil rights	1	26.0	49.0	0	1
Corruption	2	28.0	42.0	0	1
Ethics in government	1	34.0	38.0	0	1
Lobbyism	1	41.0	42.0	0	1
Overall index scores				**13**	**10**

Appendix 6: Polling data and index scores for issues (1992)

Issues	No. Polls	Voter support for		Index scores for	
		George Bush	Bill Clinton	George Bush	Bill Clinton
Social welfare issues					
Health care	13	21.6	54.8	0	1
Housing	2	20.0	51.0	0	1
Health care costs	2	18.5	48.5	0	1
Poverty	5	19.6	49.0	0	1
Helping working parents and their children	1	24.0	52.0	0	1
Helping the poor	1	13.0	40.0	0	1
Helping the middle class	3	27.7	50.0	0	1
Getting people off welfare	1	24.0	46.0	0	1
Education	11	28.9	44.6	0	1
Helping minorities	1	21.0	36.0	0	1
Helping people like yourself	4	29.2	43.2	0	1
Social security	1	26.0	29.0	0	1
Foreigh Affairs / defense issues					
International crisis	4	61.7	20.7	1	0
Foreign policy	20	61.5	22.0	1	0
Keeping America out of war	2	33.0	38.5	0	1
Economic issues					
Trade	4	40.7	31.0	1	0
Jobs	9	20.3	41.9	0	1
Economy	49	28.4	40.3	0	1
Budget deficit	10	25.3	34.4	0	1
Taxes	21	36.2	36.2	0	1
Social issues and others					
Crisis management	3	56.8	27.3	1	0
Upholding traditional American values	2	38.0	20.5	1	0
Moral values	1	48.0	33.0	1	0
Supreme Court appointments	1	36.0	28.0	1	0
Family values	14	40.6	35.8	1	0
Law enforcement	2	34.5	34.0	1	0
Women rights	3	22.5	55.0	0	1
Reform government	2	18.5	45.0	0	1
Bringing necessary changes	10	25.6	49.2	0	1
Gay rights	1	19.0	40.0	0	1
Environment	12	24.9	45.6	0	1
Vice President choice	1	32.0	50.0	0	1
Getting programs through Congress	4	27.8	42.7	0	1
Race relations	10	26.8	40.4	0	1
Abortion	10	29.9	39.8	0	1
Problems of inner cities	5	26.3	35.5	0	1
AIDS	1	34.0	41.0	0	1
Domestic crisis	1	33.0	40.0	0	1
Drugs	1	35.0	39.0	0	1
Crime	10	30.4	32.7	0	1
Presidential debate	1	28.0	29.0	0	1
Overall index scores				**9**	**32**

Appendix 7: Polling data and index scores for issues (1996)

Issue	No. Polls	Voter support for		Index scores for	
		Bob Dole	**Bill Clinton**	**Bob Dole**	**Bill Clinton**
Social welfare issues					
Helping minorities	1	24.0	61.0	0	1
Helping the poor	3	27.0	62.3	0	1
Education	15	31.6	56.1	0	1
Poverty	1	32.0	53.0	0	1
Health care	13	31.0	51.4	0	1
Medicare	20	32.9	52.0	0	1
Helping the middle class	6	35.9	52.6	0	1
Looking out for people like yourself	3	35.0	49.7	0	1
Social security	3	41.3	51.0	0	1
Reforming the welfare system	5	37.4	44.0	0	1
Foreigh Affairs / defense issues					
Maintaining military strength	3	50.3	40.7	1	0
International crisis	1	38.0	49.0	0	1
Foreign policy	48	40.7	44.9	0	1
Iraq	1	35.0	38.0	0	1
Economic issues					
Budget deficit	16	41.4	36.8	1	0
Taxes	16	40.1	39.6	1	0
Jobs	6	31.8	49.8	0	1
Economy	53	36.3	45.7	0	1
Trade	2	36.5	37.5	0	1
Social issues					
Immigration	4	38.0	33.3	1	0
Moral values	11	40.8	36.6	1	0
Insuring honesty in government	3	39.7	39.0	1	0
Drugs	13	37.3	40.9	0	1
Dealing with main problems	1	42.0	44.0	0	1
Crime	16	38.1	44.1	0	1
Family values	6	37.8	47.1	0	1
Abortion	8	32.0	47.2	0	1
Reform government	3	38.8	47.8	0	1
Environment	11	22.4	61.0	0	1
Overall index scores				**6**	**23**

Appendix 8: Polling data and index scores for issues (2000)

Issue	No. Polls	Voter support for George W. Bush (Rep)	Voter support for Al Gore (Dem)	Index scores for George W. Bush (Rep)	Index scores for Al Gore (Dem)
Social welfare issues					
Helping minorities	2	28.0	53.5	0	1
Reducing gap between rich and poor	2	31.0	49.0	0	1
Helping poor and needy people	2	33.0	47.0	0	1
Health care	40	35.4	48.4	0	1
Prescription drugs	23	35.3	48.2	0	1
Helping the middle class	7	39.5	50.6	0	1
Protecting patients' rights in the health care system	3	37.5	47.5	0	1
Medicare	10	40.1	47.1	0	1
Social Security	43	39.6	46.2	0	1
School vouchers	9	40.0	44.8	0	1
Education	33	40.9	44.3	0	1
Foreigh Affairs / defense issues					
Defense	26	51.2	34.4	1	0
Spread of weapons of mass destruction	1	31.0	43.0	0	1
Middle east	4	39.5	42.5	0	1
Foreign policy	21	41.0	43.0	0	1
International crisis	5	42.4	42.6	0	1
Economic issues					
Promoting new business formation	1	53.0	29.0	1	0
Keep the stock market rising	1	42.0	35.0	1	0
Gas prices	11	38.9	34.6	1	0
Taxes	35	44.0	40.1	1	0
Jobs	2	41.5	40.5	1	0
Federal budget	8	44.6	44.3	1	0
Economy	43	41.1	44.0	0	1
Protect people from corporate power	1	39.0	41.0	0	1
Social issues and others					
Holding down the size of government	3	53.0	34.5	1	0
Death penalty	5	44.5	31.8	1	0
Crime	9	47.7	35.1	1	0
Drugs	1	43.0	34.0	1	0
Reducing partisanship in Washington	5	38.2	31.0	1	0
Limit lobbyism	2	43.0	37.5	1	0
Improving politics and government in Washington	3	42.7	37.3	1	0
Moral values	15	44.0	39.9	1	0
Supreme court appointments	6	41.9	38.1	1	0
Privacy on the internet	1	40.0	39.0	1	0
Guns	16	39.9	38.9	1	0
Solving problems	3	41.7	41.0	1	0
Campaign Finance Reform	7	37.1	37.0	1	0
Environment	10	27.9	58.8	0	1
Addressing women's issues	2	31.0	54.0	0	1
Gay rights	3	25.3	47.3	0	1
School violence	2	33.5	39.5	0	1
Abortion	18	36.2	41.5	0	1
Family values	7	38.5	40.3	0	1
Overall index scores				**20**	**23**

Appendix 9: Polling data and index scores for issues (2004)

Issue	No. polls	Voter support for		Index scores for	
		George W. Bush (Rep)	John Kerry (Dem)	George W. Bush (Rep)	John Kerry (Dem)
Social Welfare Issues					
Prescription drugs	16	34.4	49.3	0	1
Health care	59	35.2	49.9	0	1
Medicare	5	36.0	49.2	0	1
Social Security	12	37.2	49.0	0	1
Helping the middle class	4	40.2	51.3	0	1
Education	39	39.6	48.0	0	1
Funding scientific and medical research	1	38.0	43.0	0	1
Foreign Affairs / defense issues					
Terrorism and Homeland Security	71	51.7	37.6	1	0
Wartime president	1	50.0	38.0	1	0
North Korea and Iran	2	47.0	38.5	1	0
Israel and Palestinians	1	46.0	39.0	1	0
Iraq	72	48.3	42.4	1	0
Controlling the spread of nuclear weapons	1	47.0	43.0	1	0
Relations with other contries	4	47.0	45.3	1	0
US intelligence operations	2	44.0	42.5	1	0
Foreign Policy	13	45.1	44.3	1	0
Economic issues					
Taxes	26	45.9	43.8	1	0
Jobs	42	38.8	49.5	0	1
Budget deficit	9	39.8	48.6	0	1
Economy	70	41.3	48.2	0	1
Gas prices	3	37.8	40.0	0	1
Trade	3	38.5	39.3	0	1
Social issues and others					
Crisis management	1	48.0	35.0	1	0
Guns	1	43.0	35.0	1	0
Supreme Court appointments	7	47.2	40.8	1	0
Moral values	7	45.3	39.5	1	0
Working with both parties in congress	1	43.0	40.0	1	0
Family values	3	43.3	41.0	1	0
Abortion	6	42.0	40.2	1	0
Same-sex marriage	12	40.2	38.7	1	0
Environment	6	33.1	54.5	0	1
Stem cell research	7	34.7	48.4	0	1
Coping with main problems	4	38.0	50.3	0	1
Immigration	8	37.4	40.6	0	1
HIV / AIDS	2	36.5	38.0	0	1
Hispanic community *	1	37.0	37.0	0	0
Protecting Americans' constitutional rights and freedoms *	1	45.0	45.0	0	0
Overall index scores				**18**	**17**

* The last two issues were not considered in our analysis since voter support did not differ between candidates.

Appendix 10: Polling data and index scores for issues (2008)

Issue	No. Polls	Voter support for		Index scores for	
		John McCain (Rep)	Barack Obama (Dem)	John McCain (Rep)	Barack Obama (Dem)
Social welfare issues					
Closing gap between white and black students	1	18.0	59.0	0	1
Education	4	25.8	55.3	0	1
Health care	28	29.4	54.7	0	1
Helping the middle class	4	34.0	58.5	0	1
Helping people like yourself	14	34.2	49.4	0	1
Social security	4	38.5	50.5	0	1
Developing new curriculum courses and new educational assessment methods	1	32.0	43.0	0	1
Promoting parental choice	1	32.0	43.0	0	1
Foreigh Affairs / defense issues					
Commander-in-chief of the military	1	69.0	24.0	1	0
Russia	1	55.0	27.0	1	0
Terrorism and Homeland Security	40	53.4	34.6	1	0
Send U.S. troops into combat	1	53.0	40.0	1	0
Afghanistan	1	53.0	43.0	1	0
International crisis	4	52.3	43.3	1	0
Middle East	1	52.0	45.0	1	0
Foreign policy	8	47.3	42.2	1	0
Send U.S. troops into Iran	1	48.0	43.0	1	0
Iraq	48	46.1	43.3	1	0
Iran	2	48.0	45.5	1	0
Israel and Palestinians	1	44.0	42.0	1	0
Jobs	8	31.1	57.1	0	1
Restore America's image in the world	1	33.0	52.0	0	1
Relations with other countries	1	37.0	52.0	0	1
Dealing with foreign leaders	1	39.0	47.0	0	1
Economic issues					
Trade	1	48.0	38.0	1	0
Cost of living	1	15.0	66.0	0	1
Gas prices	19	34.9	48.1	0	1
Mortgage and housing crisis	6	31.5	44.7	0	1
Economy	44	37.0	48.2	0	1
Energy	17	37.6	48.4	0	1
Budget deficit	4	35.8	46.3	0	1
Wall Street financial crisis	14	37.0	46.3	0	1
Taxes	28	40.4	46.4	0	1
Making America independent from foreign oil	2	42.5	46.5	0	1
Economic crisis	1	45.0	48.0	0	1
Social issues and others					
Gun policy	1	50.0	38.0	1	0
Illegal immigration	10	42.5	34.8	1	0
Crisis management	4	49.8	42.5	1	0
Crime	1	22.0	55.0	0	1
Women	1	26.0	58.0	0	1
Global warming	2	25.5	55.0	0	1
Environment	2	30.0	55.0	0	1

Debate performance	16	25.5	47.4	0	1
Unifying the country	4	34.3	53.5	0	1
Solving the country's problems	8	34.0	47.9	0	1
Lobbyism	12	35.4	47.1	0	1
Vice president choice	9	36.4	48.1	0	1
Immigration	7	34.7	45.4	0	1
Ethics in Government	2	37.0	47.0	0	1
Bringing necessary changes	17	38.3	46.8	0	1
Getting things done in Wahsington	3	38.7	46.0	0	1
Moral values	21	39.5	45.1	0	1
Bi-partisanship	2	41.0	46.5	0	1
Supreme Court Appointments	2	42.0	45.5	0	1
Overall				**16**	**38**