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# Forecasting with Mixed Economic Signals: A Cautionary Tale

In every respect, the 2000 election defied what had become the conventional wisdom about American presidential elections—that the electorate rewards the incumbent administration for good economic times and punishes it for bad economic times. Occurring at a time when the incumbent president enjoyed fairly high levels of approval and the nation enjoyed relative economic prosperity, it seemed the 2000 election had all the markings of an election in which voters would support the status quo and vote to return a Democrat to the White House. Indeed, a group of election forecasters gathered at the 2000 Annual Meeting of the American Political Science Association and offered predictions that Gore would win a plurality of the two-party popular vote that ranged from 52.8% to 60.3%.<sup>1</sup> Of course, we

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now know that although Gore did manage to win the popular vote by the slimmest of margins, he lost the electoral vote by an equally slim margin, and

George W. Bush was elected president.

Needless to say, the election outcome left a bit of egg on the faces of the academic forecasters (especially those of us who projected Gore would receive 60.3% of the two-party vote). But more important than that, the degree of error in the forecasts calls out for explanation. Why did the vote come out essentially 50–50, when Gore should have won it quite handily? I attempt to answer this question by focusing on my own model.

## The Forecasting Model

I developed my forecasting model prior to the 1996 election. It is essentially a referendum model (Holbrook 1996b) that employs a measure of presidential popularity, an aggregate measure of satisfaction with personal finances,<sup>2</sup> and a dummy variable coded 1 for years in which the incumbent party had held the White House for at least

two consecutive terms and 0 for all other years. The first two variables are intended to capture the political and economic performance of the incumbent administration, while the latter variable (borrowed from Abramowitz [1988]) represents the assumption that it is easier to convince voters that it is “time for a change” if the incumbent party has held the White House for at least two consecutive terms.

The parameter estimates for the model, based on data from the elections held between 1948 and 1996 inclusive, are presented in the first column of estimates in Table 1. Prior to the 2000 election the model fit the data points quite well, with an adjusted  $R^2$  of .94 and a mean absolute out-of-sample error of 1.37 percentage points. In 2000, however, plugging the independent variables (approval = 58.3%; personal finances = 138; tenure = 1) into the model yielded a predicted Gore vote share of 60.3%. Given that Gore actually garnered 50.2% of the two-party vote, meaning my absolute forecasting error was 10.1 percentage points. What’s more, when the data from the 2000 election are included (second column of estimates in Table 1), the overall accuracy of the model plummets.

## An Explanation

So, what happened? One possibility is that the values of the independent variables changed so much between the time of measurement (late spring) and Election Day that they did not serve as good predictors of the outcome. This does not appear to have been the case: satisfaction with personal finances changed little between May (index = 138) and October (index = 129) and presidential approval was almost as high in October as it was in the second quarter of the year (57% and 58%, respectively).

Instead, I think the answer is that the electorate did not assign as much weight to economic considerations as they had in the past, or at least voters did not give Gore the kind of credit for a strong

**TABLE 1**  
Parameter Estimates for the Forecasting Model

	1948-96	1948-2000
	b (s.e)	b (s.e)
Constant	17.61*	28.67*
Aggregate Personal Finances (May)	.296*	.193*
Presidential Approval (2nd quarter)	.10*	.11
Tenure	-4.00*	-5.37*
Standard Error	1.54	2.85
Adj. R <sup>2</sup>	.937	.76
Mean Absolute Error (out-of-sample)	1.37	2.76
N	13	14

Note: Presidential approval is the percent of respondents approving of the way the president is handling his job in the second quarter of the election year in Gallup opinion surveys. Aggregate personal finances is measured as 100 plus the difference between the percent saying they are better off financially and the percent saying they are worse off financially (100+[percent better - percent worse]) in May of the election year in surveys conducted by the Surveys of Consumers (University of Michigan). Tenure is a dichotomous variable scored 1 when the incumbent party has held White House for two terms or more, and 0 if the party has been in power for less than two terms.

\* $p < .05$ .

economy as they had given previous incumbent-party candidates. Why single out economic considerations? Why not assume that voters didn't assign as much weight to presidential approval as they had in the past? Primarily because the 2000 election outcome is less unusual if a prediction is based just on presidential approval than if it is based on satisfaction with personal finances. The data in Figure 1 illustrate this point quite nicely. In the top panel of Figure 1, Gore's vote share is plotted against presidential approval, showing he could have been expected to receive 55% of the votes if voters only considered the job the sitting president of the same party was doing.<sup>3</sup> Indeed, the relationship between presidential approval and election outcomes is hardly affected by the inclusion of the 2000 outcome. In fact, the correlation between approval and election outcome is .79 without the 2000 outcome included and .76 with it. But the second panel in Figure 1 shows that using just the level of satisfaction with personal finances to predict the outcome yields a much more off-the-mark prediction of 64% of the popular two-party vote for Gore. This point is reinforced by the fact that the correlation between aggregate personal finances and election outcomes is .67 when the 2000 election is included and .86 when it is excluded. So it would appear that Gore did not receive the credit for a strong economy that one might have expected based on previous

elections. Otherwise, he would have won by a wide margin.

Of course, this simply begs the question, why didn't voters assign as much weight to economic considerations as they had in the past? The answer to this question, I believe, lies in the nature of the information about the economy that voters received during the campaign. Simply put, voters were not exposed to the type of information that could have been expected to have reinforced their generally positive outlook on the economy and were, therefore, less likely to emphasize economic considerations when casting their ballots. Although it is difficult to assign full shares of blame for this, two suspects are easy to identify. First, despite continuing signs of economic vitality, Al Gore refused to run on the administration's economic record. This is particularly important because one of the assumptions that underlies the forecasting model is that the two major-party candidates will both run

effective and relatively balanced campaigns. In regard to claims about the economy, this means that the incumbent-party candidate runs on and takes credit for good economic times, and the challenging-party candidate casts blame on the incumbent party and its representative during bad economic times.

The 2000 campaign did not follow this pattern. In an apparent effort to distance himself from President Clinton, who enjoyed an average job approval rating of 58%, Gore appeared to run from rather than on the administration's economic record, at least until the last few weeks of the campaign. This is not to say that Gore

**TABLE 2**  
Original and Revised Forecasting Models, 1956-2000

	Original Model	Economic News	Weighted Personal Finances
Constant	22.91*	35.84*	38.66*
Approval	.04	.18*	.12*
Personal Finances	.27*	—	—
Economic News	—	.12*	—
Weighted Personal Finances	—	—	.10*
Tenure	-5.92*	-5.04	-5.00
2000 Forecast	55.4%	50.3%	51.1%
Standard Error	2.70	2.16	1.92
Adj. R <sup>2</sup>	.78	.86	.89
Avg. Abs. Out-of-Sample Error	3.13	2.06	2.03
N	12	12	12

\* $p < .05$ .

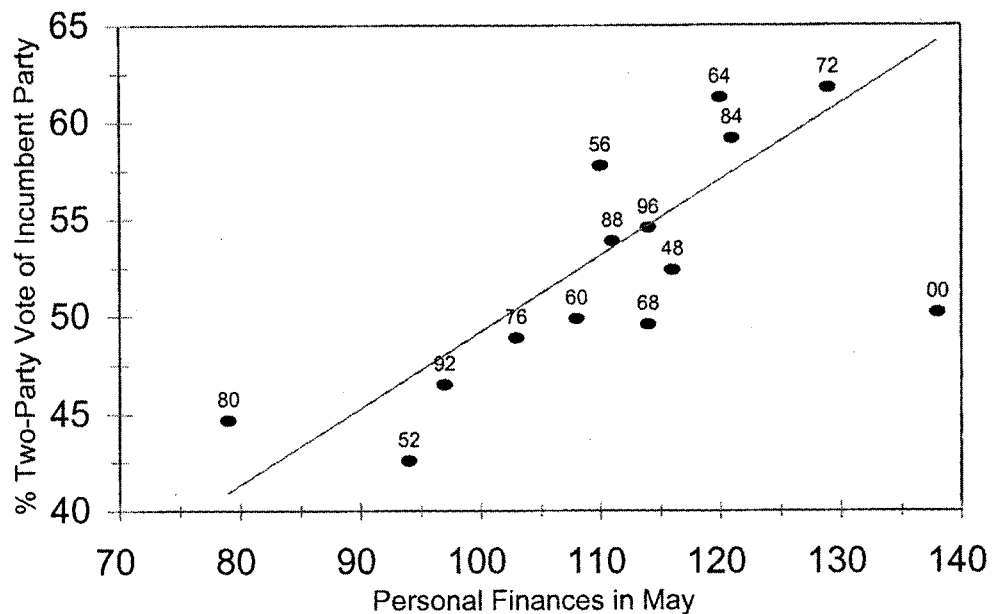
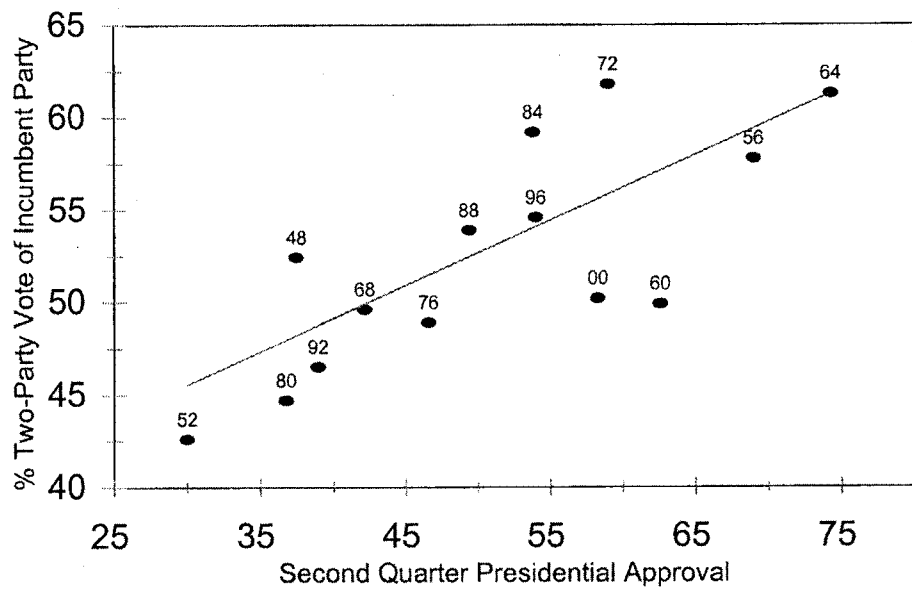
didn't discuss the economy, but he certainly emphasized it less than guaranteeing prescription drug benefits, enacting tax cuts, and creating various "lock boxes." In pursuing this strategy, Gore missed a golden opportunity to use the campaign to remind voters of the good economic times and to prime them to base their votes of their perceptions of the economy.<sup>4</sup> Recent research by Shah et al. (1999) reinforces the importance of this point. Shah and his colleagues studied the impact of media coverage of campaign-generated information about the economy on candidate support and found that candidate statements about the economy provide a strong cue to the electorate and are also closely tied to changes in public opinion during the campaign (see also Hetherington 1996).

Compounding Gore's strategic error, the news media, despite relatively strong overall numbers (unemployment was at about 4%, and during second quarter of 2000 the GDP grew at an annual rate of 5.6%), focused increasingly on the few signs of economic problems as the election drew closer. News of the anemic performance of the stock market and rising gasoline prices dominated newspapers and television.<sup>5</sup> As a result, voters received much more negative news about the economy than would normally be expected given the broader economic picture. And, again, this was probably exacerbated by Gore's aversion to running on the economic record of the Clinton administration.

A sense of the tone of information about the economy can be gotten by utilizing data from the Surveys of Consumers, a national public opinion survey conducted on a monthly basis by the Survey Research Center at the University of Michigan (see <[www.isr.edu/src/projects.html](http://www.isr.edu/src/projects.html)>). Each month, respondents are asked, "During the last few months, have you heard of any favorable or unfavorable changes in business conditions?" and "What have you

heard?" Responses to these questions are used to create an index (100 + [percent favorable news – percent unfavorable news]) that summarizes the overall tone of economic news respondents reported hearing. Normally, one would expect the tone of economic news would be relatively positive for a year like 2000, when the general indicators were strong. However, Figure 2, which presents the relationship between aggregate personal finances in May (the economic variable used in the forecasting model) and news about the economy in the fall of each election year,<sup>6</sup> shows that this was clearly not the case in 2000. In most years, strong

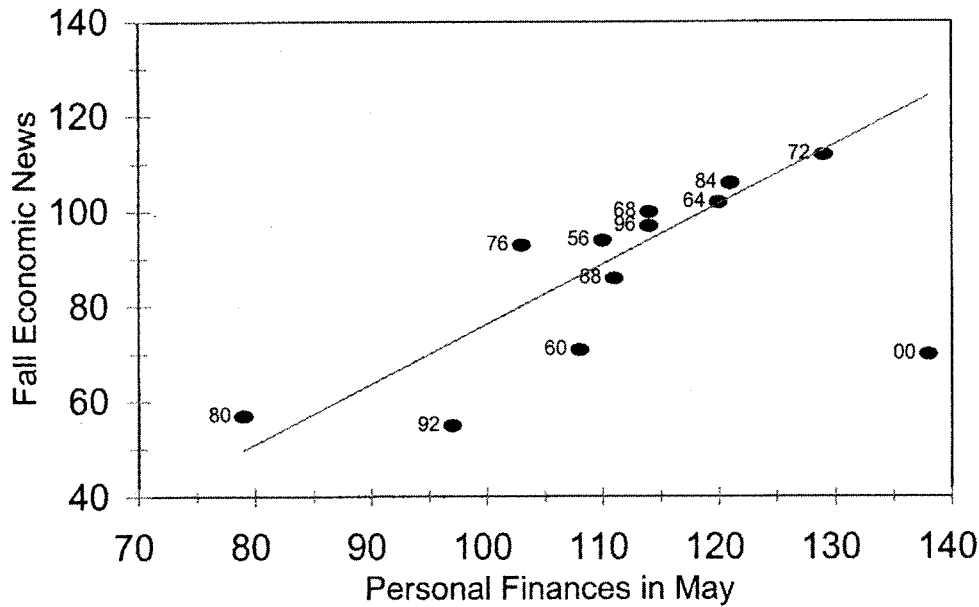
**Figure 1**  
**Presidential Approval, Aggregate Personal Finances,**  
**and Elections Outcomes, 1948–2000**



economic conditions in the spring translated into good economic news in the fall. The starkest exception to this pattern is 2000. The tone of what people reported

incumbent party was thrown out of the White House.<sup>7</sup> It is interesting to note that 1992 is another year in which the tone of economic news was harsher than one might have expected. This would seem to support the elder Bush's claim, as well as Goidel and Langley's (1995) finding, that the media's portrayal of the economy in 1992 was more negative than it should have been.

**Figure 2**  
**Personal Finances and Fall Economic News**

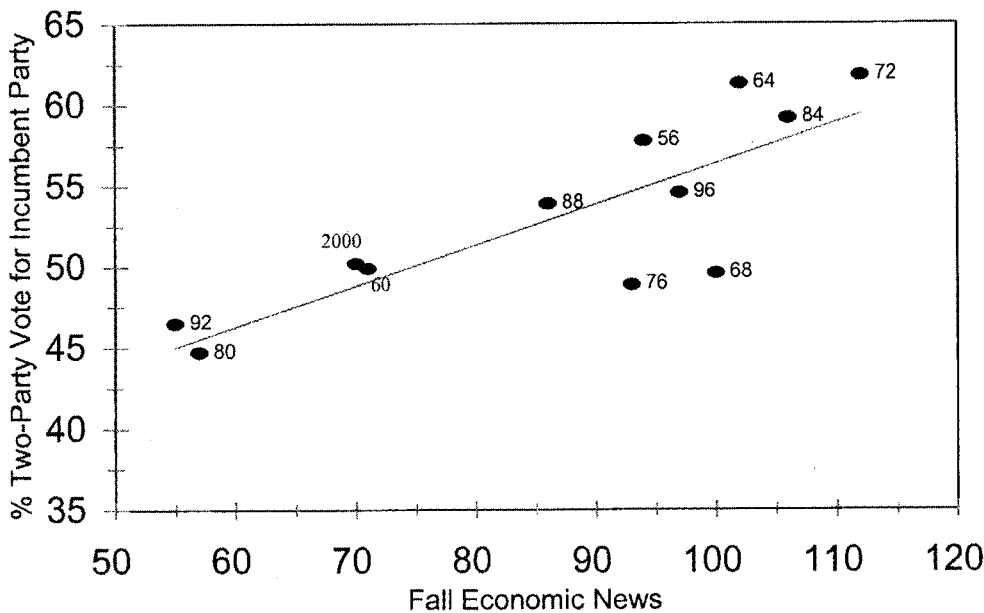


hearing about the economy was virtually the same as that reported in 1960 and not appreciably better than that reported in 1980 and 1992, all years in which the

Determining the cause of the gap between general economic attitudes and the tone of what people were hearing about the economy is less important than noting its effect. Figure 3 displays the relationship between economic news about the economy in the fall and the incumbent party's share of the two-party vote for all presidential elections from 1956 to 2000. Two things are apparent from this figure.

First, there is a strong positive relationship between the tone of what people report hearing about the economy and the electoral fortunes of the incumbent presidential party. The only slight deviations from this pattern are 1968 and 1976, both years in which the incumbent party barely lost the elections.

**Figure 3**  
**Fall Economic News and Election Outcomes, 1956-2000**



Second, the outcome of the 2000 election was not at all aberrant, at least when one considers the tone of the economic news people reported hearing in the fall. According to the results shown in Figure 3, the 2000 election outcome followed a very predictable pattern. In fact, using fall economic news as the principal predictor of the two-party vote yields a predicted Gore vote share of 48.8%.<sup>8</sup>

**Revised Forecasting Models**

So, how can this information be used to provide more accurate forecasts of election outcomes? One possibility is to replace the personal finance variable in the forecasting model with the measure of the tone of the news people report hearing about the economy.

Another, somewhat more complex possibility is to weight the personal finances variable by the tone of economic news. This seems appropriate, given that my argument is that Gore didn't get the credit he "should have" for a good economy because the tone of the information people received during the campaign was so negative.

The weighting scheme used here is (economic news/100) • aggregate personal finances. The tone of economic news is divided by 100 so that years in which there was more negative news reported than positive news will have a score less than one and years in which there was more positive news will have a score greater than one. Consider the following example. In May 2000, the personal finance measure stood at 138 and the economic news measure was at 79 (which means that the percent of people citing negative news was 21 percentage points greater than those who reported hearing good news). So, the weighted personal finance variable would have a value of 109.2 ( $0.79 \cdot 138$ ) for 2000, compared to the unweighted value of 138. What this means is that the public could be expected to reward the incumbent administration as if the personal finance measure stood at a very tepid 109.2, rather than at a very robust 138.

Table 2 presents revised forecasting models that incorporate the tone of economic news both as an additive term and as a weight for personal finances. The original forecasting model is also included for the purpose of comparison. Due to limited availability of the economic news variable, the estimates in Table 2 are based on data from 1956 to 2000 instead of 1948 to 2000, as was the case with the original model. Also, in an effort to further improve accuracy, all variables are averaged over the summer months (June, July, and August) rather than in the spring, as was the case with the original model.<sup>9</sup>

This table contains several interesting findings. First, focusing on the original model, measuring popularity and personal finances in the summer rather than the spring results in a somewhat better estimate of the 2000 outcome. But the forecast for 2000 is still off the mark by 5.3 percentage points, and the model represents very little real improvement over the original spring model, in terms of overall error.<sup>10</sup> Second, both the economic news model and the weighted personal finance model offer vast improvements over the original model. They both have substantially larger  $R^2$  values, and smaller standard errors and out-of-sample errors than the original model. In fact, for both of these models, the 2000 outcome was not at all anomalous: The point estimate for the economic news model was almost right on the money and the point estimate for the weighted personal finances model was off by less than a percentage point (these are both out-of-sample estimates). Finally, although the economic news model provides a slightly more accurate estimate of the

2000 outcome, the weighted personal finance model does a better job overall, with a smaller standard error and out-of-sample error, and a larger adjusted  $R^2$ . Also, the economic news model "missed" the 1960, 1976, and 1988 outcomes, whereas the weighted personal finances model erred only in estimating the 1960 and 1976 outcomes. But, otherwise, the differences between the two models are not very large.

## Conclusion

My forecasting model had a strong statistical track record going into the 2000 election and made sense in terms of what political scientists thought we knew about elections. But the 2000 contest was different from previous elections in one very important way. Despite continuing strong numbers from many of the broad economic indicators, and continued perceptions that the economy was doing well, voters were being exposed to relatively negative information about the economy. When asked in national public opinion surveys about the news they had been hearing about the economy, respondents gave responses that were more reminiscent of the dour economic times of 1980 and 1992 than the relative boom time of 2000. In retrospect, this is not surprising, considering the attention given to specific economic indicators such as the declining stock market and rising gas prices, and given the vice president's reticence to claim credit for the strength of the economy. Because they received more negative economic information than warranted, voters discounted their own perceptions of the economy and cast votes in a way that suggests they blamed Gore more for overseeing a relatively tepid economy than crediting him for helping engineer one that grew at an annual rate of 5.6% in the second quarter.

Of course, one of the less momentous consequences of all of this was that the model I used to forecast the 2000 election led me to greatly overpredict Gore's two-party vote share. However, when the model is altered to include a measure of the tone of economic news people reported hearing during the summer before the election, its overall accuracy improves significantly and the forecasts for 2000 come within a percentage point of the actual outcome. This is not to say that other real-world events, such as the violence in the Middle East or the attack on the U.S.S. Cole had no impact on voters. And it certainly is not to say that the campaigns didn't matter.<sup>11</sup> In fact, the crux of the argument I am making is that the 2000 outcome was less predictable, in part, because Gore followed an unpredictable strategy during his campaign.

What this analysis really teaches is that forecasting models "work" as long as voters and candidates behave as they have in previous elections. When that assumption is violated, then all bets are off.

## Notes

1. The forecasts were as follows: Alan Abramowitz, 53.2%; James Campbell, 52.8%; Thomas Holbrook, 60.3%; Michael Lewis-Beck and Charles Tien, 55.4%; Brad Lockerbie, 60.3% (revised after the APSA roundtable); Helmut Norpoth, 55.0%; Christopher Wlezien and Robert Erikson, 55.2%. All forecasts are for the incumbent party candidate's percent of the two-party vote.

2. I choose aggregate personal finances because, in aggregate, people tend to report positive changes in their personal finances during good economic times and negative changes in their personal finances during bad economic times. In addition, this variable is one of the few perception-based measures that is available as far back as 1948.

3. All regression lines in Figures 1 and 2 are estimated without data from 2000.

4. Voters still felt very optimistic about the economy well into the fall campaign. In an early October Gallup poll 73% rated the economy as "good" or "excellent," 54% said the economy was improving, compared to 34% who thought it was getting worse, and 55% said their personal finances were improving, compared to 22% who said they were getting worse. (Source: <[www.gallup.com/poll/releases/pr001019.asp](http://www.gallup.com/poll/releases/pr001019.asp)>).

5. Data on GDP and unemployment are from White House

Economic Statistics Briefing Room (<[www.whitehouse.gov/fsbr/esbr.html](http://www.whitehouse.gov/fsbr/esbr.html)>).

6. Prior to 1980, the fall statistic is from November, except for 1964 when the questions were not asked after May. From 1980 to 2000, the fall statistic is from the October surveys. Unfortunately, data for this question are only available as far back as 1956.

7. The correlation between aggregate personal finances and fall economic news is .88 without data from 2000 and .56 with data from 2000.

8. Despite the strength of this relationship, using the fall economic news is not very practical for forecasting elections, since the data on economic news in October are generally not known until after the election.

9. The summer measures of the economic variables are based on values for August prior to 1980, and June, July, and August from 1980 to 2000. The one exception to this is 1964, when the data were only available for May.

10. The parameter estimates are altered very little when the sample is changed from 1948 to 2000 to 1956 to 2000.

11. I would recommend a book on this topic (Holbrook 1996a), but I don't want to appear to be too self-promoting

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