



## Predicting the Results of the 2010 Midterm Elections: Judgment, Econometrics, and Prediction Markets

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**PREVIEW.** *Alfred Cuzán offers his postmortem on forecasts made for the midterm elections for the U.S. House of Representatives. His evaluation compares the judgment of three experts, six statistical models, and one (betting) prediction market. It seems like the best political forecasts emerge when forecasters place their bets. However, this issue of Foresight contains a related article on corporate prediction markets (p. 35), where the challenges of implementation are arguably greater than those in election markets.*



### Introduction

In “The Comparative Accuracy of Judgmental and Model Forecasts of American Football Games,” ChiUng Song and colleagues (2007) compared the predictions of two consecutive seasons of American football games on the part of 70 experts and 32 statistical models and found that neither method could beat the betting line. The line is the spread in points by which one team is expected to win. It is set in Las Vegas six to seven days ahead of the game.

Here I compare forecasts of the number of House of Representative seats that incumbent Democrats would lose in this year’s midterm elections. The Democrats emerged with a total of 193 seats, a historic 64 fewer seats than they took in 2008. I look at how closely three renowned experts, six statistical models from political scientists, and the Intrade prediction market came to predicting this outcome.

The three experts I chose for this study are Charlie Cook, Stuart Rothenberg, and Larry Sabato, all of whom have solid reputations as political analysts and election prognosticators. Indeed, the final forecast of each, issued just a few days before the election, missed the actual count only by between four seats (Rothenberg) and nine seats (Cook and Sabato).

Their projections are built from the ground up, so to speak, with a district-by-district analysis that is then supplemented with observations of national trends, such as presidential approval ratings and the generic congressional ballot. For specifics on how I reconstructed their forecasts, see Note 1 at the end.

I also examined six forecasts by political scientists to represent the econometric or statistical method. These are shown in Table 1. Half of the models are purely structural, based exclusively on predictor variables such

**Table 1. Forecasting the Democratic Party Seat Losses, 2010 Elections for the United States House of Representatives**

Author and Variables (in parentheses)	Forecast (Actual=64)
<b>Hybrid Models</b>	
Abramowitz (lagged seats, generic ballot, presidential approval, midterm)	43
Bafumi, Erikson and Wlezien (adjusted generic poll, president's party)	51
Campbell (Cook's "seats in trouble" and lagged seats or presidential approval)	51
Average	<b>48</b>
<b>Pure Structural Models</b>	
Cuzán (lagged seats, annual GDP per capita growth, inflation)	29
Hibbs (lagged seats, percent of the vote the president won two years prior, weighted change in quarterly real per capita disposable income)	45
Lewis-Beck and Tien (annual change in real per capita disposable income, presidential approval, midterm)	22
Average	<b>32</b>
Average, all models	<b>40</b>

as the state of the economy, while the other half are hybrids, a mix of predictor variables and polls. See Note 2 for details on the timing of these forecasts.

The prediction market is represented by the contracts traded at Intrade on the number of seats gained by the Republicans. The contracts come in increments of five seats, e.g., "Republicans to gain 60 or more seats." In this type of prediction market, a winning bet earns \$100, a losing bet zero. The price paid to play (e.g., \$60) reflects the bettor's perception that the chance of winning is worth the price.

As with Cook and Rothenberg, whose predictions also consist of a range within which the actual would fall, I represented

each 5-seat increment by the median of this contract.

### A Comparison of Predictive Accuracy

Figure 1 displays the evolution of the election forecasts made from 168 to just 3 days prior to the election. Note that on September 22, the date the statistical models made their forecasts, or 41 days before Election Day, the statistical forecasts incurred a smaller error than Rothenberg and tied with Sabato. Although Sabato quickly left the models behind, it took Rothenberg almost another month to do so.

Starting in mid-October, the real race was between the experts' judgment and Intrade. Again, Figure 1 shows that, most of the time, gamblers at Intrade had the "best" forecast. The one exception was a month-long period between June 10 and July 11, when Cook did better. During the entire period, Intrade raised its forecast six times and lowered it once, albeit only for a few days before restoring it to the previous value (from 47 to 42 and back again), but at no time did any expert lower his forecast. Observe that while three times the gamblers raised their forecasts before any of the experts did, each expert beat them to the punch at least once: Sabato in May and then again in September, Cook in June, and Rothenberg in the last week before Election Day.

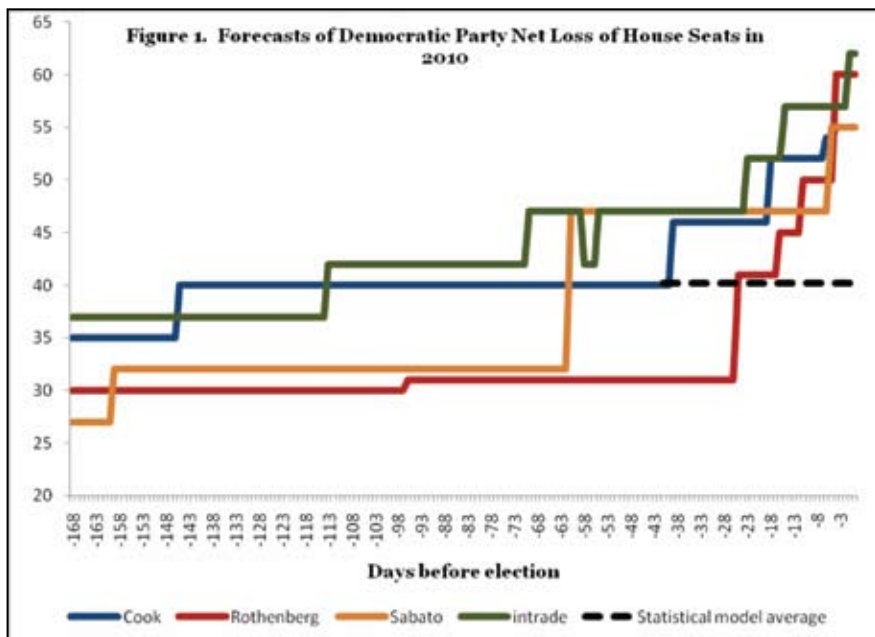


Table 2 shows the forecast error incurred with all three methods across the entire forecasting period examined, from mid-May through Election Day, and also the day when each expert and author of a statistical model posted his last forecast. Over the complete forecasting period, the Mean Absolute Error (MAE) was lowest with the prediction market, although its margin over one representative of the judgment method (Cook) was a mere three seats. Note that, on September 22, the hybrid models had the best forecast, and even the purely structural models did a little better than Rothenberg. Comparing the experts' final forecasts with Intrade, the gamblers bested Sabato and Cook by only two seats, and lost to Rothenberg, who came from behind to finish first among the experts by three seats.

### Perspective on the Winning Approach

Research on predicting sports events showed that gamblers made better predictions than either experts or statistical models. Yet the results of the midterm election forecasts do not favor the Intrade prediction market in all respects. The experts, and even the models, scored some points. Across the period studied, from mid-May through the last five days leading up to Election Day, Intrade did incur the smallest MAE, although the difference between it and that of a representative of the judgment method (Cook) amounted to only two seats. More than likely, this very modest victory was due to the fact that the bettors on the prediction market made more adjustments throughout the period.

The hybrid models edged out the gamblers in September, albeit by one seat. Moreover, when Rothenberg posted his last prediction—on October 29, only four days before the election—the market incurred a larger error than he did.

It is doubtful that Intrade participants make their calculations independently of what

**Table 2. Absolute Error of Forecasts: Intrade vs. Experts vs. Models**  
**Number of revisions in parentheses. Winner in red.**

Time period	Market		Judgment		Statistical Models	
	Intrade	Cook	Rothenberg	Sabato	Purely Structural	Hybrid
Average						
5/18 – 11/1	19 (7)	22 (5)	31 (5)	26 (3)		
9/22*	17	24	33	17	32	16
10/28**	6			8		
10/29***	6	8	3			
<b>Notes:</b>						
*This was the date that Hibbs posted his forecast. The remaining authors had submitted their final forecasts to the publication by this date. **Date of Sabato's final forecast.						
***Date of Cook's and Rothenberg's final forecasts.						

the experts or the statistical models are projecting. It would be far more reasonable to assume that they gather information from all sources, including, or especially, the experts. That they improve on the experts' predictions by so little suggests that almost all of what there is to know about these contests has already been absorbed and distilled into the experts' judgments. That said, however, the fact is that, even though there was no knockout, the market did win. As with the outcome of football matches, it appears that gamblers can beat election experts at their own game.

Perhaps the most prescient forecaster was retired academic Douglas Hibbs (<http://www.douglas-hibbs.com/>): “The best forecasts in 2010, as in earlier elections, will almost surely be turned in by thick markets betting odds data like those generated at Intrade.”

#### Note 1

I reconstructed their data from [cookpolitical.com](http://cookpolitical.com), [rothenbergpoliticalreport.com](http://rothenbergpoliticalreport.com), and [centerforpolitics.org/crystalball](http://centerforpolitics.org/crystalball), respectively, and asked each of them to let me know if I had made any errors in the process. None responded that corrections were indicated. It bears noting that these forecasts are not exactly comparable, so no ranking in accuracy is possible within the group, for

three reasons. First, only Sabato's forecast consists of a precise number, whereas Cook and Rothenberg both estimate a 10-seat range within which the actual would fall. In their cases, the median was used. Secondly, only Sabato predicts every contest, whereas Cook and Rothenberg rate each race along a continuum from "safe" or "solid," to "lean" or "likely," "tilt" or "lean," and "toss-up." Finally, they do not all revise their forecasts with the same frequency. Cook and Rothenberg did so five times, and Sabato three times.

### Note 2

All but one model (Hibbs') were presented at the meeting of the American Political Science Association, held over the Labor Day weekend, and subsequently published in *PS: Political Science and Politics* (October 2010). The journal's deadline for submission was July 15, although authors were given a chance to send in a revised forecast no later than the first week of September. Accordingly, there are small variations in the forecasts between what was published in the journal in October and what was presented

at the APSA or in later revisions by the authors. I used the published versions here. Finally, Hibbs posted his model's forecast on September 22, so for the sake of comparison with the other methods I picked that as the date of the statistical model forecasts.

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