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LESSON 6

CAN ELECTION FUTURES MARKETS BE MORE ACCURATE THAN POLLS?

Lesson 6
Can Election Futures Markets Be More Accurate Than Polls?

INTRODUCTION

Public opinion polls are an important part of American political life. Polling informs and influences political debate, the state of the economy, social trends, and more. Political scientists and polling companies have developed sophisticated techniques to make polling more accurate. Now, however, there is another approach to predicting election outcomes, and it may prove to be even more accurate than polling. This approach uses futures markets—in which people risk some of their own money— to predict the outcome of such things as presidential elections.

LESSON DESCRIPTION

The students examine results from opinion polls conducted near the end of the 2004 presidential campaign. They compare results from several national polls to those of the Iowa Electronic Markets (hereafter, the IEM), an online futures market, to predict the outcome of the 2004 race. They read and discuss a handout which allows them to compare the performance of opinion polls and the IEM in predicting election outcomes. Finally, the students learn how well the IEM performed in the presidential campaign of 2008.

CONCEPTS

- Futures markets
- Incentives
- Public opinion polls

OBJECTIVES

Students will be able to:

1. Explain how public opinion polls and futures markets are used to predict election outcomes.
2. Compare and contrast the market-based approach to the polling approach for predicting outcomes of presidential elections.

CONTENT STANDARDS

Economics (CEE Standards)

- People respond predictably to positive and negative incentives. (Standard 4)
- Voluntary exchange occurs only when all participating parties expect to gain. This is true for trade among individuals or organizations within a nation, and among individuals or organizations in different nations. (Standard 5)
- Markets exist when buyers and sellers interact. This interaction determines market prices and thereby allocates scarce goods and services. (Standard 7)

Civics and Government (NSCG Standards, Grades 9-12)

- Personal responsibilities. (Standard V.C.1)

TIME REQUIRED

30 minutes

MATERIALS

- A transparency of Visuals 6.1, 6.2, and 6.3
- A copy for each student of Activity 6.1

Note: You may wish to visit www.biz.uiowa.edu/iem/ to learn more about the IEM, a key element of this lesson. This site might also be a helpful tool for classroom use.

PROCEDURE

1. Set the stage: Explain that U.S. presidential elections are tremendously important to Americans and to others throughout the world. Because the elections are so important, many people work hard to try to predict their outcomes.
2. Tell the class that the purpose of this lesson is to compare two approaches for predicting the outcomes of presidential

elections. The first is to use the traditional and highly sophisticated opinion polls conducted by such well-known organizations as Gallup and Harris. The second is to use the Iowa Electronic Markets (IEM), an online futures market where contract payoffs are linked to election outcomes. Can a relatively simple market-based system outperform sophisticated opinion polls?

3. Display Visual 6.1, which summarizes 10 predictions made about the 2004 presidential race. Ask the students to compare the predictions of the nine national polls to the prediction of the IEM. *(The IEM outperformed seven of the nine national polls. Two polls, Harris Online and Fox News, having named Senator Kerry as the winner, were very far off. The IEM either tied or had the same percentage of difference as the CBS News N.Y. Times and CNN/USA Today polls.)* The IEM performed very well without identifying a random sample of likely voters or making one telephone call. How did the IEM do it?

4. Distribute Activity 6.1. Introduce it as a source of information about the two approaches to predicting election outcomes. Ask the students to read it. After they have completed the reading, ask:

   - What are two challenges that polling companies face in their efforts to get accurate results?

   (Pollsters face many challenges. They must carefully identify random samples of people who best represent the opinions of the relevant population. They must make telephone calls at times when the people they want to talk to are likely to be at home. They must develop unbiased questions. And sometimes they must deal with evasion and dishonesty; the people they reach might not be truthful in their replies.)

   - How does the IEM work to predict the outcomes of presidential elections?

   (The IEM enables individuals to buy and sell contracts reflecting their predictions. For example, the IEM operates a "winner-takes-all" market where contracts for the presidential candidate with the largest share of the popular vote pay one dollar [$1], while contracts for the losing candidate pay nothing. Each contract therefore has a maximum value of $1, and trading accounts can be opened for $5 to $500.)

   - What is a futures market (such as the futures markets overseen by the CME Group)? How is a futures market like the IEM?

   (The CME Group is an entity formed by the merger of the Chicago Board of Trade [CBOT] and the Chicago Mercantile Exchange [CME]. It is a futures exchange where people buy and sell contracts for the future delivery of commodities and various financial instruments: corn, wheat, and soy beans as well as stock indexes, interest rates, and foreign exchange. The IEM provides a political futures market where people speculate on future election results, using relatively small amounts of money.)

   - Why might the IEM produce better results than traditional opinion polls?

   (The IEM has two big advantages over traditional polls. First, people who buy candidate contracts through the IEM put their own money at risk. Buyers who put their money at risk have an incentive to be careful—to search for relevant information and try to make the right choice. Second, people who buy contracts through the IEM participate voluntarily. They have no incentive for misrepresenting their views.)

5. Display Visual 6.2. Review the final results of the 2008 presidential race. The IEM market appears again to have predicted the final outcome better than traditional polls.

6. Display Visual 6.3. Note that the IEM had shown Barack Obama with a consistent

lead throughout the election cycle, from the primaries to the general election.

7. If you wish to extend the lesson, go to the IEM website at www.biz.uiowa.edu/iem/ and examine the races that are currently being followed at the site.

CLOSURE

In closing, review the lesson by posing the following questions:

- What are some of the challenges facing the firms that conduct national polls?

(Pollsters must carefully identify random samples likely to represent the opinions of the relevant population, make telephone calls at times when the people they want to talk to may be home, and develop unbiased questions. Sometimes they must deal with interviewees who are not truthful in their replies.)

- What is the IEM?

(The IEM is a set of real-money futures markets where contracts on the outcomes of political and economic events are traded. The IEM allows individuals to buy and sell contracts reflecting their predictions. For example, the IEM operates a "winner-takes-all" market where contracts for the presidential candidates are bought and sold.)

- What are the advantages of the IEM over traditional polling?

(Unlike traditional opinion polls, the IEM does not work with randomly selected groups of people. It depends on informed individuals who have an incentive to make an accurate prediction: They can make money if they purchase the contract of the winning candidate. In the IEM, there are no problems of sampling, posing unbiased questions, or calling people at the wrong time of day. The IEM does none of these things. The individuals who buy contracts using the IEM also have no incentive to misrepresent their views.)

- What happens to the value of a presidential candidate's futures contract when the candidate experiences favorable news about the likelihood of winning the election?

(Favorable news about the likelihood of success for a presidential candidate will increase demand for the contract and will therefore increase the contract price. In this way, the IEM market is similar to other markets in which prices are determined by forces of supply and demand.)

ASSESSMENT

Multiple-Choice Questions

1. Which of the following are challenges facing firms that conduct opinion polls?

   A. Identifying non-random samples, interviewing a sufficient number of people, asking unbiased questions, reaching the correct people in an unbiased way.

   B. Identifying random samples, interviewing a sufficient number of people, asking unbiased questions, reaching the correct people in an unbiased way.

   C. Identifying random samples, conducting a sufficiently large number of interviews in shopping malls, asking biased questions, reaching the correct people in an unbiased way.

   D. Identifying random samples, finding the right number of interviewees in the telephone book, asking biased questions, reaching the correct people in an unbiased way.

2. Which approach is used by the IEM to predict the outcomes of presidential elections?

   A. The IEM is well known for the Nelson, Neumann, and Forsythe (NNF) poll, which operates much like the Gallup and Harris polls.

   B. The IEM allows traders to use an open auction of presidential candidate contracts who meet face-to-face in trading pits.

C. The IEM allows individuals to buy and sell candidate contracts on-line, reflecting their predictions about presidential races.

D. The IEM is well known for its regression analysis that has successfully predicted the outcomes of several presidential races.

Constructed-Response Questions

1. Compare traditional opinion polling to the IEM, noting advantages and disadvantages of each. In your discussion of the two methods, make use of information from the 2004 presidential election.

   (Traditional opinion polls have several advantages. They use carefully designed methodologies that often [not always] produce accurate predictions. For example, six out of nine national polls predicted the correct outcome in the 2004 presidential race. But polling also has many disadvantages. It is difficult to identify random samples, make telephone calls at the right times, and develop unbiased questions. Moreover, people reached by pollsters might not be completely truthful in their replies.

   The IEM has several advantages. Because it is not a poll, it avoids all the problems associated with conducting polls. In addition, the IEM provides an incentive for anonymous individuals to search for information on their own and choose the best candidate. In 2004, the IEM outperformed seven of the nine national polls. Markets like the IEM, if allowed to charge fees, could easily pay for themselves and thus be far more efficient than traditional polling. A disadvantage of the IEM might be that some people are skeptical of unregulated markets.)

2. The IEM is gaining a reputation for forecasting election results with great accuracy. Can you imagine other uses for this approach?

   (The IEM approach can be used to make predictions in a variety of cases for which there will ultimately be a clearly defined answer. For example, the IEM offers a futures contract on Federal Reserve monetary policy, in which the future value of a federal funds rate futures contract is traded. The IEM has also experimented with contracts predicting the value of economic announcements, the reported quarterly profits of publicly traded firms, and even box-office earnings from newly released motion pictures. There are many policy variables to which this approach could be applied.)

VISUAL 6.1
COMPARING POLLS AND MARKETS

Final Pre-Election Predictions for the 2004 Presidential Election: Nine National Polls and the IEM*

Firm	When Conducted	Bush	Kerry	Nader	Other	Bush Lead
Election Result		50.7	48.3	0.3	0.7	2.4
Harris (Online)	10/29-11/1	47	50	1	2	-3.0
Fox News	10/30-10/31	46	48	1	5	-2.0
Gallup	10/31-11/1	49	49	1	1	0.0
Zogby	11/2	49.4	49.1	1	0.5	0.3
Harris (Telephone)	10/29-11/1	49	48	2	1	1.0
NBC News/ *Wall Street Journal*	10/29-10/31	48	47	1	4	1.0
ABC News *Washington Post*	10/28-10/31	49	48	1	3	1.0
CBS News *N.Y. Times*	10/29-10/31	49	47	1	3	2.0
CNN/*USA Today*	10/29-10/31	49	47	NA	4	2.0
Iowa Electronic Market (IEM)	11/1	51.4	48.6	NA	NA	2.8

* The polling results in this table were selected from a table prepared by Michael W. Traugott, "The Accuracy of the National Pre-Election Polls in the 2004 Presidential Election," *Public Opinion Quarterly*, *69* (5), 2005. "NA" is not available. The Election Result row represents actual percentage of popular vote. All polling rows represent projected percentage of popular vote (with rounding in most cases). The IEM row is the implied probability of victory for each candidate from the IEM winner-takes-all market. The IEM vote share contracts on 11/1/2004 closed at Bush = 50.4 and Kerrey = 49.5.

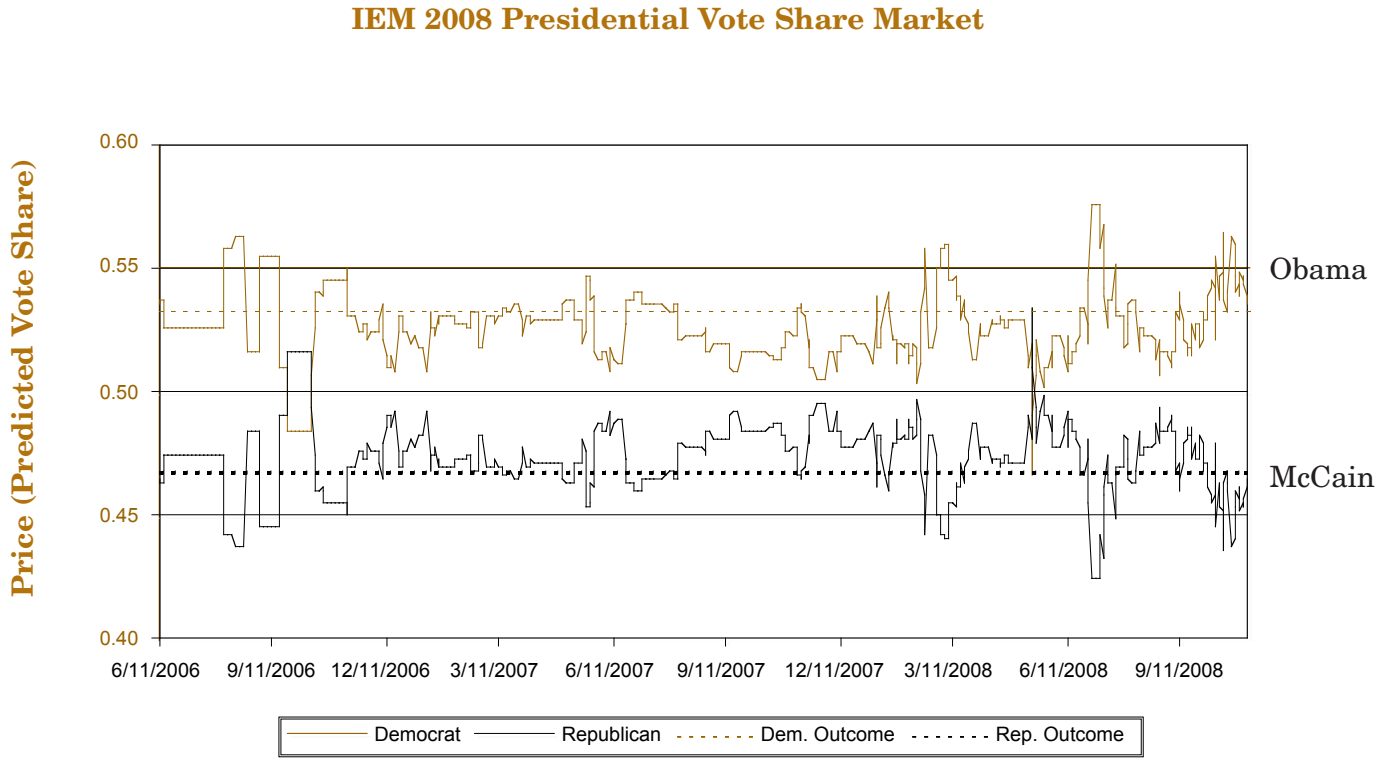
VISUAL 6.2
RESULTS OF THE 2008 PRESIDENTIAL ELECTION

- The Iowa Electronic Markets predicted the final vote count in the 2008 presidential election to within a half percentage point.
- Prices on the IEM's Vote Share Market predicted that Barack Obama would receive 53.55 percent of the two-party presidential popular vote, and John McCain would receive 46.45.
- After the ballots were counted, Obama received 53.2 percent of the vote, and McCain received 46.8 percent, leaving an average error per contract of .3 percent.
- The average absolute error by public opinion polls, meanwhile, was 1.2 percent.

VISUAL 6.3

RESULTS FOR THE PRESIDENTIAL ELECTION: JUNE 2006-NOVEMBER 2008

- Through all the twists and turns of the primary campaign and the final campaign, the Iowa Electronic Markets consistently picked Barack Obama as the leader.
- As illustrated in the figure below, from June 2006 until November 2008, Barack Obama led by margins similar to the final election outcome.



Source: The Iowa Electronic Markets, Tippie College of Business, University of Iowa. Used with permission.

ACTIVITY 6.1
HOW ARE OPINION POLLS AND OPINION MARKETS DIFFERENT?

Directions: Read the following information. Then answer the Questions for Discussion.

Predicting Results by Conducting Public-Opinion Polls

Public opinion polls are a staple of American life. They are used to obtain information about a wide variety of questions, from what people want for breakfast to which candidate they support for president. Polls used to measure voter preferences have become very sophisticated, making use of several techniques developed by social scientists. National polling companies use these techniques to make their polls more accurate and unbiased. Here is an overview of some of the techniques.

Sampling

One major challenge for pollsters is to identify a random sample of voters. This cannot be done by talking to people in a shopping mall or asking people to call in to a television station. Probability sampling is the basis for all scientific survey research. The basic idea is that a small, randomly selected sample of a population can represent the opinions of all of the people in the population. The goal is to obtain the same results that would have been obtained had every member of the population been included in the survey.

Sample Size

Random selection of a sample is one issue polling companies face; sample size is another. For every poll, pollsters must determine how many interviews to conduct to insure that an adequate cross-section of randomly selected people will be included. It is not always necessary to work with a large number of people. A relatively small sample can represent a larger population adequately, provided that the sample meets other criteria for representativeness. In fact, a typical sample used in many national polls is 1,000.

Telephone Surveys

Pollsters use sophisticated computer programs to identify telephone numbers for the people to be included in a sample. Survey callers usually try to reach an adult living in the households identified by these numbers. Here, a certain sort of bias can be a problem. When there is no answer or the number is busy, the number typically is kept on file and called again later in the survey period. Pollsters use this re-dial procedure to correct for errors that could otherwise affect poll results, depending on who is at home at certain times. For example, older adults are more likely than others to be home at night. Younger single adults are less likely to be at home in the evening. Without the re-dial procedure, responses from younger voters might be underrepresented in the survey data.

Writing Good Questions

Writing good questions is hard. It requires a great deal of skill and experience. It also requires a determination to avoid introducing bias. The order in which questions are asked and the manner in which they are stated can affect the responses given. For example, in calls regarding a presidential race, it makes a difference whether the caller does or does not mention the party affiliation of the presidential candidates. Failure to mention party affiliation might bias the response. In some polls, like those commissioned by interest groups, people influenced by the wording of questions may guess at the expected answer and provide it.

ACTIVITY 6.1, CONTINUED

HOW ARE OPINION POLLS AND OPINION MARKETS DIFFERENT?

Lying, Voter Turnout, and Dollars

Pollsters face other problems as well. Some respondents lie to pollsters who call them, thus introducing error in the survey results. And while pollsters strive to obtain random samples of likely voters, it is extremely hard to predict who will in fact show up at the polls. For example, in the 2004 election, it was expected that more young people would vote than actually did. This expectation may have caused some polls to err by picking Senator Kerry over President Bush. Finally, it is expensive to conduct polls properly. It costs thousands of dollars to take all the steps needed to try to get things right. What if someone could get results of equal quality—or better results—without all the hassle and expense?

Predicting Results by Using Future Markets

There is an alternative to polling—a completely different approach to predicting elections. It involves using a political futures market. Trading in political futures involves none of the problems—statistical sampling, question design, and telephone contacts—that arise in opinion polling. Instead, futures markets allow interested individuals to make their own predictions regarding the outcomes of elections.

The Iowa Electronic Markets (IEM)

One example of a political futures market is the Iowa Electronic Markets (IEM). The IEM was developed in 1988 by three professors (Forrest Nelson, George Neumann, and Robert Forsythe) at the University of Iowa. It is a real-money, small-scale futures exchange. It allows individuals to buy and sell contracts reflecting their predictions about all sorts of events, including presidential races.

The IEM has various uses. It enables researchers to study market-based approaches to predicting outcomes. It also serves as an educational tool. It operates as part of a not-for-profit organization. No commissions or transaction fees are charged. Although the IEM is under the regulatory purview of the Commodity Futures Trading Commission (CFTC), it is not regulated by the CFTC or any other regulatory authority.

A futures contract is a legally binding agreement to buy or sell a commodity or financial instrument at a set future date. The price of the contract is determined by the bids of buyers and sellers in the market. The IEM operates something like the CME Group, a large futures contract exchange headquartered in Chicago. The CME Group enables people to buy and sell commodities like corn, wheat, and soy beans at a particular future date. It also permits the buying and selling of futures in certain financial instruments, including U.S. Treasury bonds and U.S. Treasury notes. Unlike the CME Group, however, the IEM is a *political* futures market where people can speculate on election results, using small amounts of money.

How does the IEM work? Let's imagine that it is the summer of 2012. The election of the U.S. president will take place on November 6, 2012. The IEM has just opened its "winner-takes-all" market where contracts for the presidential candidate with the largest share of the popular vote pay one dollar ($1), while contracts for the losing candidate pay nothing. You wish to buy a contract because you think you can predict who will win the contest between Candidate A and Candidate B.

ACTIVITY 6.1, CONTINUED

HOW ARE OPINION POLLS AND OPINION MARKETS DIFFERENT?

You contact the IEM website (www.biz.uiowa.edu/iem/) and open an account. (The most you can spend at IEM is $500.) The latest price for a futures contract on Candidate A is 62 cents. The price usually fluctuates, sometimes quite a lot, up until election day. With a Candidate A contract priced at 62 cents, Candidate A is considered to have a 62 percent probability of winning the election. If you buy a Candidate A contract and Candidate A does indeed win the election, the contract will pay you one dollar ($1) after the election. If Candidate B wins, you get nothing.

Let's say that you buy 500 Candidate A contracts at 62 cents each, for a total cost of $310. If Candidate A wins, your contracts will be worth $1 each, for a total of $500, giving you a gain of $190 on the $310 you spent. Of course, if Candidate B wins, you will lose the $310.

The presidential race in 2004 can help us understand how the IEM functioned when President George W. Bush ran against Massachusetts Senator John Kerry. In that year, the IEM's winner-takes-all market predicted a close race. On November 1, traders gave President Bush a 51.4 percent chance of winning, compared to a 48.6 percent chance for Senator Kerry. Throughout the summer, the IEM had shown a fairly close race. After the Republican Convention, the IEM showed Bush's probability of winning the election at 70 percent. That lead, however, dropped after the three presidential debates and continued to drop up until election eve. President Bush won with 50.7 percent of the popular vote; Senator Kerry lost with 48.3 percent. The winner-takes-all IEM market paid out $1 for each President Bush contract, and nothing for Senator Kerry contracts.

QUESTIONS FOR DISCUSSION

1. What are two challenges that public opinion companies face in their efforts to get accurate results? Explain your answer.

2. As a means for predicting the outcomes of presidential elections, how does the IEM work?

3. What is a futures market (such as the futures markets overseen by the CME group)? How is a futures market like the IEM?

4. Why might the IEM produce better results than traditional public opinion polls?