# Polling and the Ballot: The Venezuelan Referendum 

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## 1. Was the Referendum Too Close to Call?

On August 15, a national referendum took place in Venezuela. Voters were to decide whether or not to recall their twice-elected President Hugo Chávez. Several polls in the run-up to the referendum showed Chavez to be the likely winner; the most recent (August 4-8) and comprehensive was the poll by Evans/McDonough Company, Inc., with Varianzas Opinion. With a nationwide sample of 2000 and a margin of error of 2.2 percent, it showed Chavez ahead by 50 to 38 percentage points among registered voters (up from 49-41 in July). If we assume that the undecided split along similar lines, this turns out to be very close to the actual result, and within the poll's margin of error.

But most news reports said the election was "too close to call." ${ }^{2}$
President Chávez won with 58 percent of the vote-a result confirmed by the Carter Center and the Organization for American States as accurate and without evidence of fraud. ${ }^{3}$ This leads to a statistical question: how likely is it that a random sample of the electorate polled before the election would find the result "too close to call?"

According to the National Electoral Council (CNE), 4,991,483 votes (or $58.26 \%$ of the total) were cast in to reconfirm Chávez, while $3,576,517$ votes (or $41.74 \%$ ) were cast to recall him ${ }^{4}$. Table 1 shows the probability, for various sample sizes, of an accurately constructed poll coming within the margin of error of an even outcome.

Table 1: Probability of a Poll Result of "Too Close to Call"

| Poll Sample <br> Size | Poll Percent Margin of <br> Error $(+/-)$ | Approximate Probability of "Too Close <br> To Call" Result |
| :---: | :---: | :---: |
| 100 | 9.9 | 2 in 3 |
| 500 | 4.4 | 1 in 25 |
| 1000 | 3.1 | 1 in 2000 |
| 2000 | 2.2 | 1 in $50,000,000(1)$ |
| 3000 | 1.8 | 1 in $130,000,000,000(2)$ |

Note: Assumes 41.7-58.3 percent split in population and margin of error based on $95 \%$ confidence interval.
(1) More likely to flip a fair coin 25 times and get all heads. (2) More likely to be dealt back-to-back royal flushes in poker.

[^1]As can be seen from the table, it was relatively easy to predict the result of this election. With a representative sample of 1000 people, the odds of being unable to call the election would be less than 1 in 2000; with a sample of 2000 , the odds of being unable to call the election would be less than 1 in 50 million.

## 2. The Penn, Shoen, Berland and Associates Exit Poll

Despite an internationally certified Chávez victory, leaders of the Venezuelan opposition are refusing to accept the outcome, alleging massive fraud. ${ }^{5}$ As support for their claim, they cite an exit poll conducted by Penn, Schoen \& Berland Associates, Inc. of more than 20,000 voters. This firm reported that their poll showed 59 percent in favor of recall. ${ }^{6}$ With such a large sample, the margin of error was only 1 percent. The chance of a properly constructed survey resulting in such an error is incomprehensible- far less than 1 chance in 10 to the $490^{\text {th }}$ power ${ }^{7}$.

Given that international observers found no evidence of fraud, the methodology of this exit poll must be called into question. It is nearly impossible that this result could have been obtained through sampling error.

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#### Abstract

APPENDIX

Imagine sitting down at a poker table with three friends. A normal deck is shuffled and five cards are dealt to each. You and your friends all find yourselves with royal flushes (A-K-Q-J-10 of the same suit.) Upon discovering this, you would not think of the incredible luck involvedyou would rightly figure the deck had been stacked. Now imagine the deck is reshuffled and redealt and again you all hold royal flushes. Now imagine it happening nineteen more times in a row! That is a more likely scenario than the Penn, Schoen \& Berland exit poll having missed the outcome of the recall vote by such a wide margin by random chance. It is more likely that the same person wins the lottery every week of the year!

The odds of Penn, Schoen, and Berland getting their result from sampling error are many times less than 1 chance in: $$
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## Exit Poll Results Show Major Defeat for Chavez

New York. August 15. 2004. 7:30pm EST - With Venezuela's voting set to end at 8:00pm EST according to election officials, final exit poll results from Penn, Schoen \& Berland Associates, an independent New York-based polling firm, show a major victory for the "Yes" movement, defeating Chavez in the Venezuelan presidential recall referendum.

With more than 8 million Venezuelans having cast their ballots so far, the results of a national exit poll show that Chavez has been ousted by referendum.

The Penn, Schoen \& Berland Associates exit poll shows 59\% in favor of recalling Chavez (the "Si" or "Yes", anti-Chavez vote) and 41\% against recalling Chavez (the "No", pro-Chavez vote).

The poll results referred to in this release are based on an exit poll just concluded in Venezuela. This is a national exit poll conducted in 267 voting centers throughout the country. The centers were selected to be broadly representative of the national electorate in regional and demographic terms.

In these centers, $\mathbf{2 0 , 3 8 2}$ voters were interviewed. Voters were selected at random but according to a strict demographic breakdown by age and gender to ensure a representative mix reflective of the national electorate. Those voters who were randomly selected to participate in this exit poll were asked to indicate only their vote ("Si" - for "Yes" - or "No") on a small ballot which they could then personally drop into a large envelope in order to maintain secrecy and anonymity. Data was sent by exit poll workers to a central facility in Caracas, Venezuela for processing and verification.

The margin of error for these final exit poll results referred to in this release is under $+/-1 \%$.


[^0]:    ${ }^{1}$ David Rosnick is a Research Associate at the Center for Economic and Policy Research. We thank Todd Tucker for his input.

[^1]:    ${ }^{2}$ For example, "Venezuelans Line Up to Vote on Whether to Recall President." By Juan Forero. New York Times. Aug. 15, 2004.
    ${ }^{3}$ "There is no evidence of fraud, and any allegations of fraud are completely unwarranted," Carter asserted at a news conference Tuesday. "Venezuela to Hold Partial Audit of Recall." Associated Press. Aug. 18, 2004.
    ${ }^{4}$ Consejo Nacional Electoral. "Chávez Ratificado Con el 58 Por Ciento de los votos". August 16, 2004. http://www.cne.gov.ve/notideta.asp?id=416

[^2]:    5 "Foes Press Audit of Venezuela Recall Vote." By Juan Forero. New York Times. Aug. 18, 2004 and " Oposición: El CNE ejecutó una estafa." El Nacional. Aug. 16, 2004. http://www.elnacional.com/Articulos/DetalleArticulo.asp?idSeccion=64\&id=47725
    ${ }^{6}$ "Exit Poll Results Show Major Defeat for Chavez." Penn, Schoen \& Berland press release. Aug. 15, 2004
    [http://www.cepr.net/publications/penn_shoen_berland_release.pdf]. See also "Venezuelans Flock to the Polls to Vote on a Divisive President". By Carol J. Williams. Los Angeles Times. Aug. 16, 2004.
    ${ }^{7}$ This number is so large that we have attempted to provide some context in the Appendix.

