

Policing Armenian Elections: Turnout Distribution Analysis as a Tool for Quick Election Assessment and International Response

By John Brady Kiesling, Visiting Lecturer, Princeton University

Abstract: Academic specialists on U.S. and European elections have little incentive to delve into the methodology of assessing elections distorted by gross electoral fraud. In the immediate aftermath of a flawed election in the developing world, the international observer community is under great pressure to quantify the fraud and assess whether the results of the election conformed to the will of the population. Empirical observations of the 1996 and 1998 Armenian presidential elections suggest that fraud typically betrays itself at the precinct level through elevated voter turnout. Close scrutiny by international and domestic observers can detect the types of fraud but not the extent. Using a spreadsheet program to aggregate precinct polling data by voter turnout percentage and graph the votes cast in each turnout band, it is possible to quantify in crude terms the extent to which the will of the electorate was distorted. In extreme cases, such as the 1996 Armenian elections, such graphs make clear in hindsight that the international community erred grievously in endorsing the official election outcome. The method warrants further study and could be refined through the application of sophisticated curve-matching algorithms.

The aim of an election is to endow the winners with the democratic legitimacy necessary to carry out the function of their elective office by consent rather than coercion. A flawed election that does not confer legitimacy is more dangerous than useful. Political violence or stagnation in the reform process is a likely outcome. Over decades, elections have been misused to an extent that gravely compromises their ability to confer legitimacy. In many countries on the road to democracy, election fraud remains a major problem, not simply a lingering superstition. The international community has a vital role to play in emerging democracies, to bolster public confidence that the electoral process reflects the will of the electorate and thus that the leadership that emerges will enjoy functional legitimacy.

I was the Political-Economic Counselor of the U.S. Embassy in Armenia from 1997-1999. I took part in international monitoring of the 1998 and 2003 Armenian Presidential elections as an international observer under the auspices of the Office for Democratic Institutions and Human Rights (ODIHR), a component agency of the Organization for Security and Cooperation in Europe (OSCE).¹ In Armenia, in 1998, ODIHR assembled more than 180 foreign observers, supported by local interpreters and drivers. There were long-term teams in each province (*marz*), deploying the short-term observers that fanned out around the countryside on election day, visited as many polling places as possible, and witnessed the all-night vote count at some selected precinct.²

Ideally, ODIHR's goal is to validate the outcome of a fair election, dispel the natural doubts of the population, dismiss the ritual complaints of the losing side, and drape the victor with the mantle of legitimate authority. This proved impossible in Armenia. The 1998 elections were deeply flawed, and the Armenian population was left in considerable

doubt whether their will had been accurately expressed. Still, this election was some improvement over the 1996 Armenian election which, later analysis showed, had directly thwarted the will of the people.

The long-term election observer teams assembled by ODIHR have developed a reasonably powerful set of tools for judging the quality of election law and procedures.³ Their tough assessments are made public very soon after each monitored election. Though ODIHR is willing to state clearly that a given election did not meet international standards, it has resisted pronouncing on whether the official results of a given election accurately reflected the will of the voters.

This hesitation is natural. First, even the largest and most efficient monitoring mission cannot observe every activity of every voting place and interview every voter. There is no scientific method to justify a claim to godlike knowledge of what the outcome should have been in a perfect system. The 2000 U.S. Presidential elections brought to public attention the unwelcome knowledge that even elections in established democracies are a far less clear, mechanical and objective process than the published results might lead us to believe.

Bearing in mind the intrinsic imperfections of the electoral process, the democratic legitimacy conferred by an election is a precious asset for a struggling (or any) state. To deprive a newly elected government of that legitimacy by a claim that electoral fraud invalidated the results is a dramatic step, one that will lead, certainly in the short term, to dangerous instability and inability to perform many of government's most vital functions.

With the benefit of hindsight, however, it is clear that the failure of the international community to challenge a fraudulently elected ruler has costs that probably outweigh any short-term political expediency. A classic example would be the 1996 reelection of Levon Ter-Petrosyan as President of Armenia. His leading rival, Vazgen Manukyan, claimed that his victory had been overturned by late-night fraud in the vote tallying, a conclusion that some international observers eventually supported. The U.S. government and other OSCE players lost their nerve and satisfied themselves with token criticism.⁴ Ter-Petrosyan took office in a sea of opposition protests. Even without international criticism, Ter-Petrosyan found himself a tainted and unpopular president, increasingly dependent on the powerful figures in his government whose intercession had provided the vital margin of victory. Finally, Ter-Petrosyan was forced to resign, after a brief, unproductive tenure.

The 1998 election that replaced Ter-Petrosyan with Robert Kocharyan distorted the popular will as well. Detailed examination of both rounds of that election made clear that well over 100,000 fraudulent votes had been cast in favor of the ultimate winner. Once again the international community was put in the awkward position of having to decide whether to offer or withhold legitimacy. The ODIHR mission groped for a methodology to quantify the extent of the fraud, but ultimately offered no pronouncement on whether Robert Kocharian, the winner by an ostensible 59-41% landslide, received a genuine popular mandate from the voters.

The Fraud Problem

Unfree, unfair elections tend to follow consistent patterns that leave traces in the election results.⁵ Though the impetus for fraud may come from politicians or power-brokers in the capital, most election fraud manifests itself at the level of the individual voting precinct. Local officials and oligarchs attempt to justify and preserve their privileged position by delivering votes to whomever they judge likely to win. Though a wise central government would generally prefer a narrow but plausible victory to a landslide, its partisans in the provinces have a selfish interest in showing that their area is more enthusiastically supportive than elsewhere of the powers that be. There is still in many formerly totalitarian countries an instinct to seek a turnout as close to 100% as possible, with the highest possible percentage for the expected winner. However, such a high turnout cannot legitimately be achieved in a country where electoral registers have not been updated to delete those who died or emigrated after the collapse of the Soviet economy.

Where a district is politically united and the precinct and secondary-tier electoral commissions are made up of trusted persons, the goal of a local landslide can be achieved by ignoring the actual vote and sending in falsified election result protocols. But usually precincts have some opposition members in the electoral commission, or there are outside observers present. Under such circumstances, a plurality of precincts will have fair balloting and accurate counting and reporting, and a further large group of precincts will have only minor irregularities -- typically the use of state and parastatal mechanisms to assure that a maximum number of voters are brought to the polls, fortified with the promise of cash or other benefits that will accrue from an appropriate outcome.

The next level of fraud is steps to ensure that bribed or coerced voters actually vote as promised. In Armenia, this was typically achieved through "carousel voting." Each voter would be given outside the polling station a pre-marked ballot to cast. He or she would then bring back to the election impresario the unmarked ballot from the polling station, to be marked and given to the next customer.

More blatant fraud requires active complicity from members of the election commissions. In the 1998 elections, only a relatively small percentage of polling stations in Armenia were detected in blatant fraud, such as large-scale ballot box stuffing, miscounting or invalidation of opposition ballots, or falsified protocols. The overall tendency is for electoral fraud to increase the reported turnout. ODIHR employs a useful method of having its observer teams record time and turnout data at each polling station visited. By graphing this data, it is possible to detect major distortions in voting patterns, in particular the custom spending the last hour before the polls closed forging the signatures of absent voters and casting ballots on their behalf.⁶

ODIHR monitors the integrity of the precinct vote tally reporting by obtaining copies of as many precinct protocols as possible. These protocols are checked against the official published results. Finally, ODIHR's election analyst compares the outcome in precincts in which ODIHR observers have monitored and verified the count against precincts

where the counting took place without foreign witnesses. If the outcome diverges substantially in monitored versus unmonitored precincts, ODIHR can draw various conclusions about the results.

When electoral misconduct reached the point of perverting the electoral outcome, traces will be left in the statistical record. ODIHR's microscopic examination of specific precincts provides crucial data on the mechanics of electoral fraud. With that data in hand, it should be possible to make an informed statistical analysis of the broader outcome. By charting relatively small changes in turnout in a very large number of precincts, one can generate in graphic form a distribution curve of voter behavior. Against the baseline of a normal distribution curve, one can assess the net impact of fraud or coercion.

Methodology

The 1998 Armenian presidential elections were the starting point for this research, which led me back to a study of the 1996 election results as well. I took part as an OSCE/ODIHR election observer in both rounds of the 1998 elections. As an observer, I witnessed the conduct of scrupulously careful elections in one locality, and saw substantial fraud, including a ballot box with ballots inserted in stacks of ten, in another. Looking at the results afterwards, I was struck by the empirical correlation of observed election misconduct with precincts characterized by extremely high voter turnout and massive support for the winning candidate.

The International Foundation for Electoral Systems (IFES), a U.S.-funded NGO, is active in supporting free elections in many countries, including Armenia. IFES had wisely insisted as a condition for assistance that the Armenian Central Election Commission make available to the public and the international community Microsoft Excel spreadsheet files giving the detailed precinct-by-precinct results of the elections. This should be a basic minimum demand of any international organization or citizen watchdog group. The file should include, at a minimum, region, municipality, and polling precinct identifiers, number of registered voters, number of valid ballots, number of spoiled/invalid ballots, and number of votes for each candidate. Election-to-election comparison is a powerful tool for detecting vote fraud. Thus, to the extent possible, the same precinct names and boundaries should apply from one election to the next.

Using a home computer equipped with Excel, and with a diskette of the detailed precinct results, any private citizen or NGO can conduct detailed analyses of electoral behavior without need for a sophisticated statistical software package or special training. The first step is to calculate turnout (total votes/number of registered voters) and percentage of the vote for each candidate (votes/total valid votes). Sorting the list by turnout will generally highlight at top and bottom those handful of precincts in which some error or fatal omission has been made in recording the results. The 1998 Armenian election CEC spreadsheet version I received contained dozens of substantial errors, either missing data or easily correctible transpositions from column to column. However, even U.S. data is contains precincts with purported turnouts of as high as 400 percent. Once purged of obviously unreliable data, the spreadsheet, sorted by turnout, is ready for use.

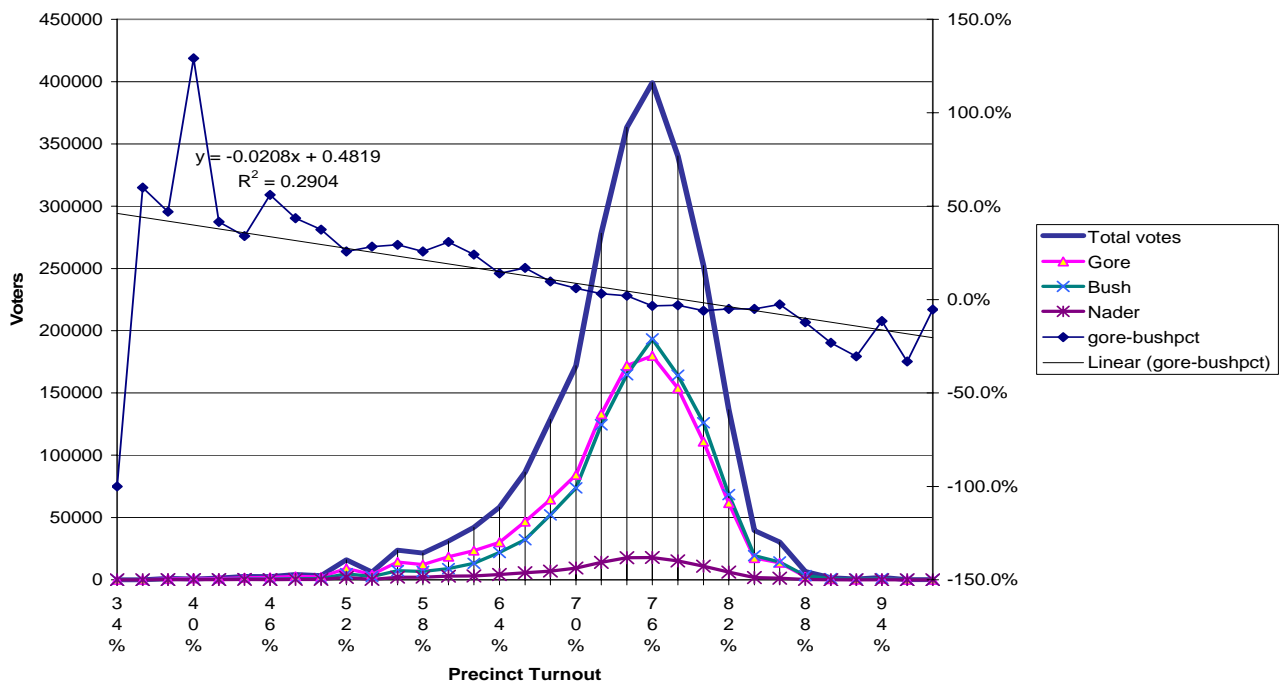
A column should be created using the MROUND function to round each precinct turnout percentage to a whole number. With 1000 or more precincts, rounding turnout to a multiple of 2% achieves a convenient level of detail. Using the Data:Subtotal menu, segregate the data by rounded turnout, summing the columns for registered voters, total votes, and votes for each candidate. Compress the display to show only the subtotal amounts. It is then a simple matter to chart on a line graph the total number of votes per candidate on the y-axis versus turnout percent band on the x-axis.

Given enough data points and uncoerced voter behavior, one would expect a fairly symmetrical bell curve of vote distribution around turnout bands, with the peak located near the overall turnout percentage countrywide. One would also expect the shape of the curve to be the roughly the same for major candidates, with some obvious explanation for any divergence between them. To test this analytical method, I applied it to precinct voting data from the 2000 U.S. presidential elections in Minnesota, Florida, and Texas.⁷ Figure 1 gives the outcome of my turnout distribution analysis for the precinct results in Minnesota, some 4076 precincts and a total turnout of 2.45 million voters, 75.2% of registered (including late-registering) voters. Gore won this election by a 2% margin, 1.17 million to 1.10 million.

As one would expect from Minnesota, the results are a beautiful, clean curve with a consistent maximum at 76%, right at the overall turnout percentage. Results for Bush and Gore track closely, albeit with a shift to favor Bush as turnout increases. I graph on a secondary y-axis (right side scale) the difference in vote percent between Gore and Bush. A linear regression trend line suggests a slight correlation between increasing turnout and increasing support for Bush.

Figure 1

Minnesota 2000 Presidential Elections



In Florida (Figure 2) the results are similar. With some 5900 precincts included, and 5.8 million voters, the bell curve is relatively smooth. The voting peak, at 70% turnout, is slightly higher than the calculated overall turnout of 66.7%. I speculate that comparing the jagged peak in the distribution curve to a normal curve would allow one to estimate the net effect of aggressive voter mobilization on turnout. The charted shift in voting behavior to favor Bush at higher turnouts agrees well with anecdotal evidence that a modest voter preference for Gore was outweighed by more effective Republican efforts to get out the vote, for example Cuban-Americans bloc voting.

Figure 2

Florida 2000 Presidential Elections

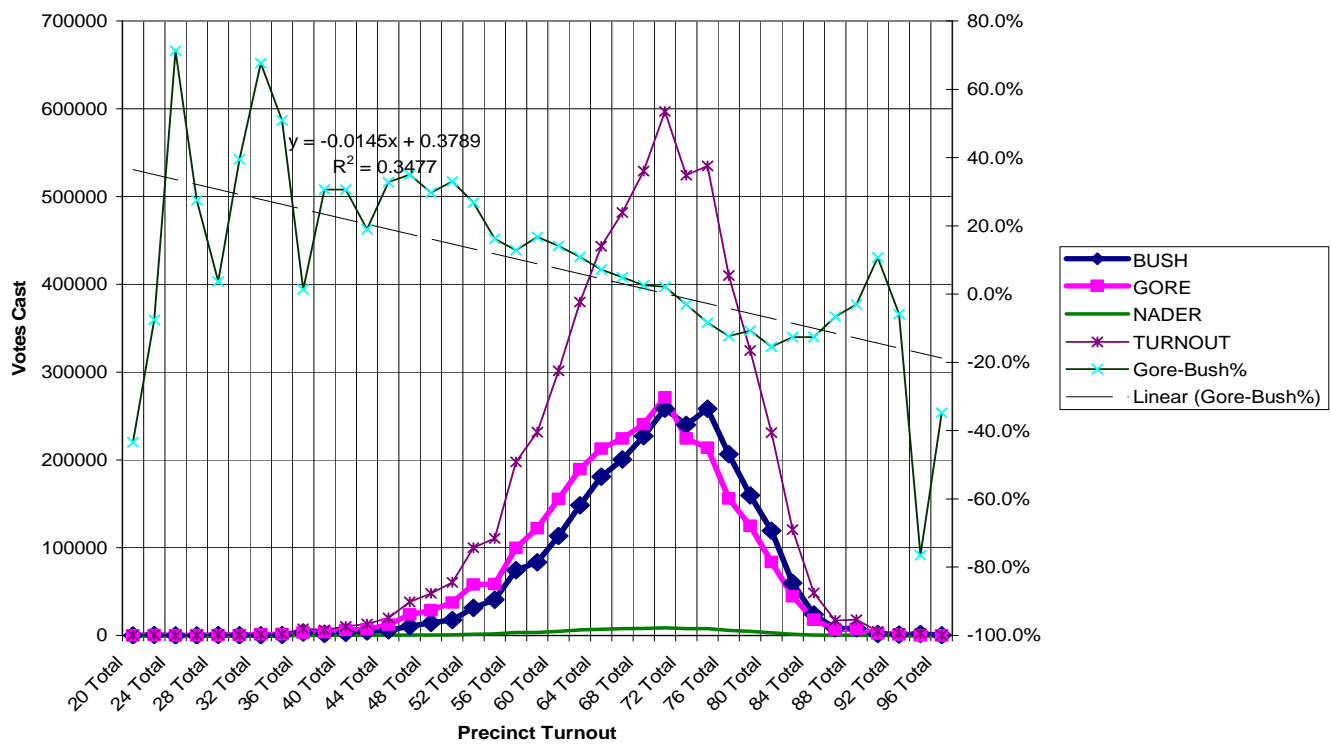
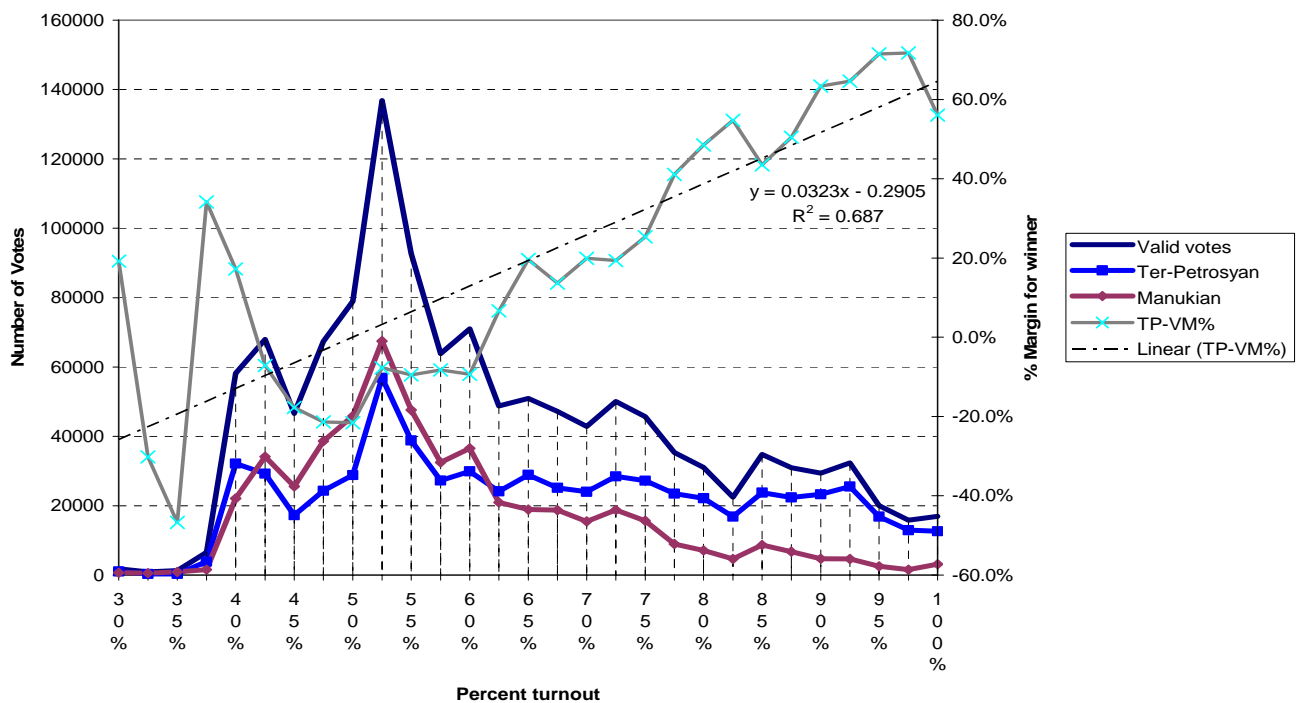


Figure 3, however, shows a very different curve. the results of the highly controversial 1996 Armenian presidential elections in which incumbent Levon Ter-Petrosyan defeated Vazgen Manukyan and others by a reported 51.9% to 41.1% following a mysterious interruption in the counting process and allegations of massive vote manipulation. The official curiosity of OSCE observers focused on a missing 22,000 ballot coupons in Yerevan, just enough unconfirmed votes to put Ter-Petrosyan over the 50% threshold for a first-round victory. It was assumed, however, that Ter-Petrosyan had come in comfortably ahead of his nearest challenger.

Figure 2

1996 Armenian Presidential Election



Graphing 1218 precincts or multiple-precinct communities and 1.25 million valid votes by turnout (grouped in 2.5% bands) gives a much distorted curve that in no way resembles a normal distribution. The peak of the distribution curve is at 52.5 %, well below the official turnout of 58.8%. There are numerous spikes. As is readily apparent, the voting behavior at the heart of the graph around the maximum point shows a consistent, clear advantage to opposition challenger Manukyan. Only in the areas of elevated turnout does the pattern shift, with a larger advantage to the incumbent the higher the turnout.

There are possible explanations for substantial differences in voting behavior and turnout. Segregating Armenian results by urban/rural and small/large precinct, however, showed no significant difference in voter behavior. Nor could the urban/rural distinction explain the massive oversupply of votes at unusually high turnouts. Given the huge percentage of the Armenian population that had migrated to Russia or elsewhere for economic reasons, and the primitive state of most voter registries, turnouts much beyond 70% would have been physically impossible in most areas of the country.

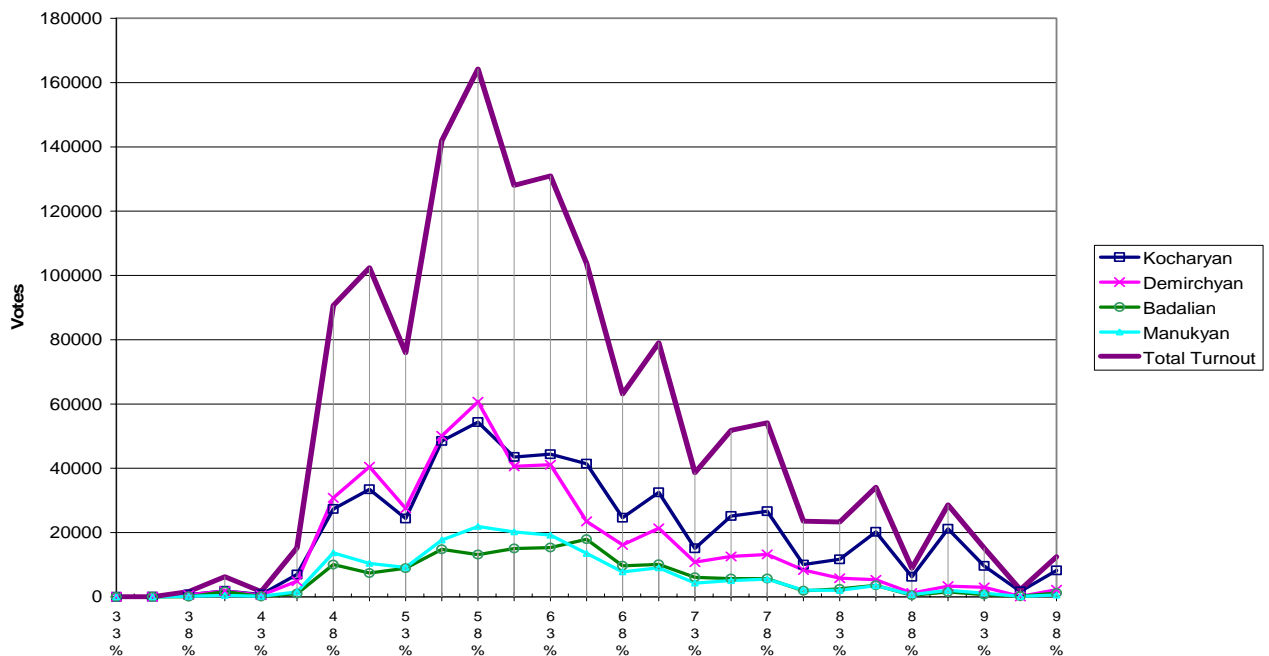
After Ter-Petrosyan's ouster, various Armenian personalities hinted at having played a role in finding last-minute votes for him after the polls had closed. It was clear that the voter preference for Manukyan had caught the authorities flat-footed. In their haste to correct the results, they had little time to spread additional votes unobtrusively across hundreds of polling stations. Armed with Figure 3 in 1996 in addition to ODIHR's report

of widespread fraud, it would have been easier for the U.S. Government to have agreed with opposition complaints that Ter-Petrosyan had stolen the election.

The 1998 Armenian elections were in significantly less clear. Figure 4 shows the distribution of votes in the first round, in which Robert Kocharyan won a plurality against multiple rivals, though his rival Karen Demirchyan enjoyed a small but consistent lead in lower turnout bands.

Figure 4

Armenia: Votes Against Turnout, March 16, 1998
Regions by community, Yerevan by precinct



Here the key to the election can be seen in Table One, showing a major, unexplained increase in turnout since the 1996 presidential elections, an increase not registered by observers on the ground. This was followed by an even more striking increase in turnout from the 1998 first round to the second, though election observers detected if anything a decrease in voter numbers from two weeks before. Indeed, the turnout distribution chart shows major discrepancies between officially reported turnout and the peak vote.

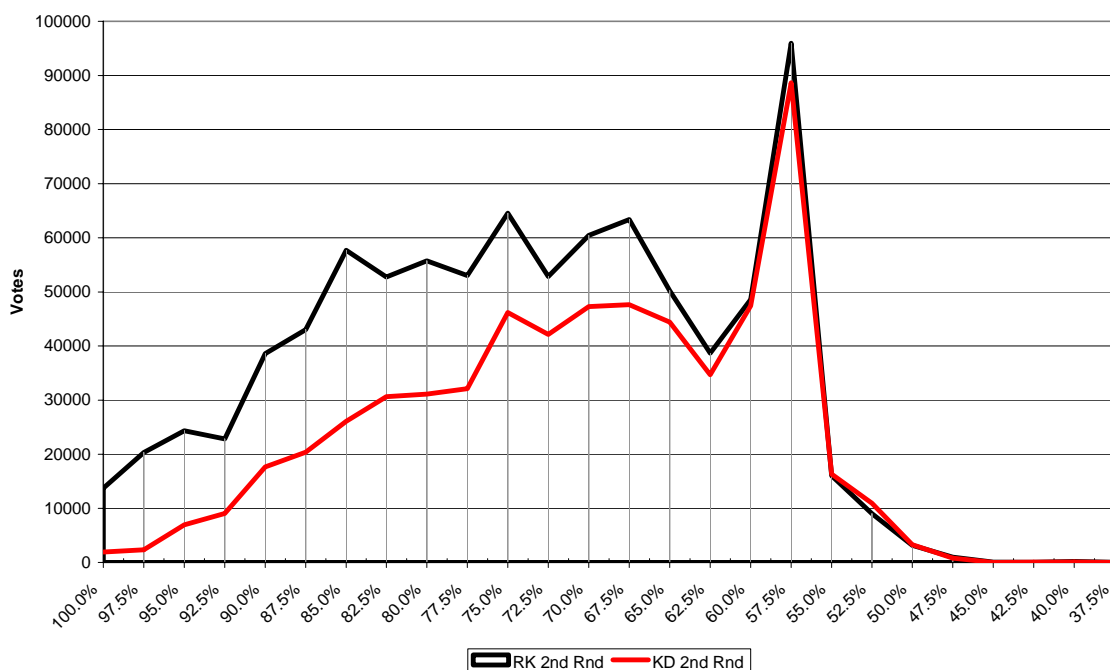
Table One

Election Date	Registered Voters	turnout	Turnout %	turnout change	Chart maximum
21/9/96	2210189	1333204	60.3%		52.5%
16/3/98	2277195	1458135	64.0%	124931	60%
30/3/98	2300816	1567702	68.1%	109567	55%

A quick perusal of Figure 5 shows that the credibility of Kocharyan's crushing victory was undermined by the near-draw at the more reliable part of the distribution curve.

Figure 5

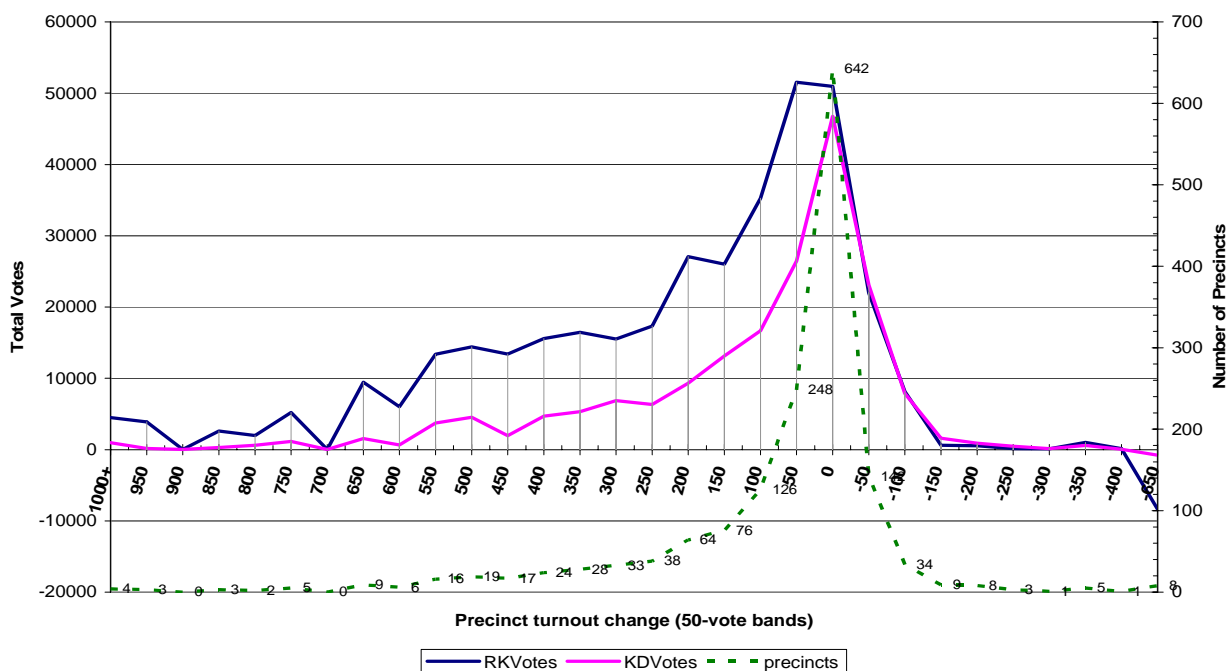
Armenia: Votes against turnout, March 30, 1998
by region communities and Yerevan precincts



The final chart, Figure 6, shows the utility of consolidating first and second round precinct voting data in a single spreadsheet. This makes it effortless to calculate the increase in voter turnout and segregate precincts by the turnout change. The deformed bell-curve of number of precincts showing increase or decrease in turnout suggests systematic distortion of the results. It is worthy of note that for those few polling stations in which turnout was (presumably accurately) reported as having decreased, Kocharyan and Demirchyan ran a statistical dead heat.

Figure 6

**Armenian Elections 98: Added Votes Against Precinct Turnout Change
Kocharian Gains from Inflated Turnouts**



Conclusion

It is in the interest of the international community to confer whatever legitimacy it can on the democratic process. The quality of the legitimacy imparted by elections depends on a number of factors, of which probably the most important is the previous experience and expectations of a given society. States with a history of fraudulent or unopposed elections do not derive full benefit from elections. The burden of proof is on the government in power to display that the elections are indeed free and fair. But the possibilities for distorting the outcome of an election are vast. For a society in transition from totalitarianism, the only fully effective way a government can show its democratic commitment is by losing an election and stepping down.

Turnout distribution analysis is not and probably cannot be a scientific method for determining what "really" happened in a close election. Improved by more sophisticated statistical methods, it could be a useful complement to the tools already available to ODIHR and other international observers. Such a quantitative method can easily be outwitted by more careful geographic distribution of fraudulent votes, but this more systematic fraud can in turn be detected by the rigorous scrutiny of an organized team of experienced election observers. It is crucial to witness all phases of the elections, including the counting process, to secure control copies of precinct returns for comparison with the official data placed on the spreadsheet, and to make a statistical comparison between observed and unobserved precincts. With an observer team keeping the avenues of fraud limited, turnout distribution analysis provides a suggestive snapshot,

available to anyone with a computer, of the extent to which organized forces have intervened, legitimately or not, to distort the normal distribution of voter preference.

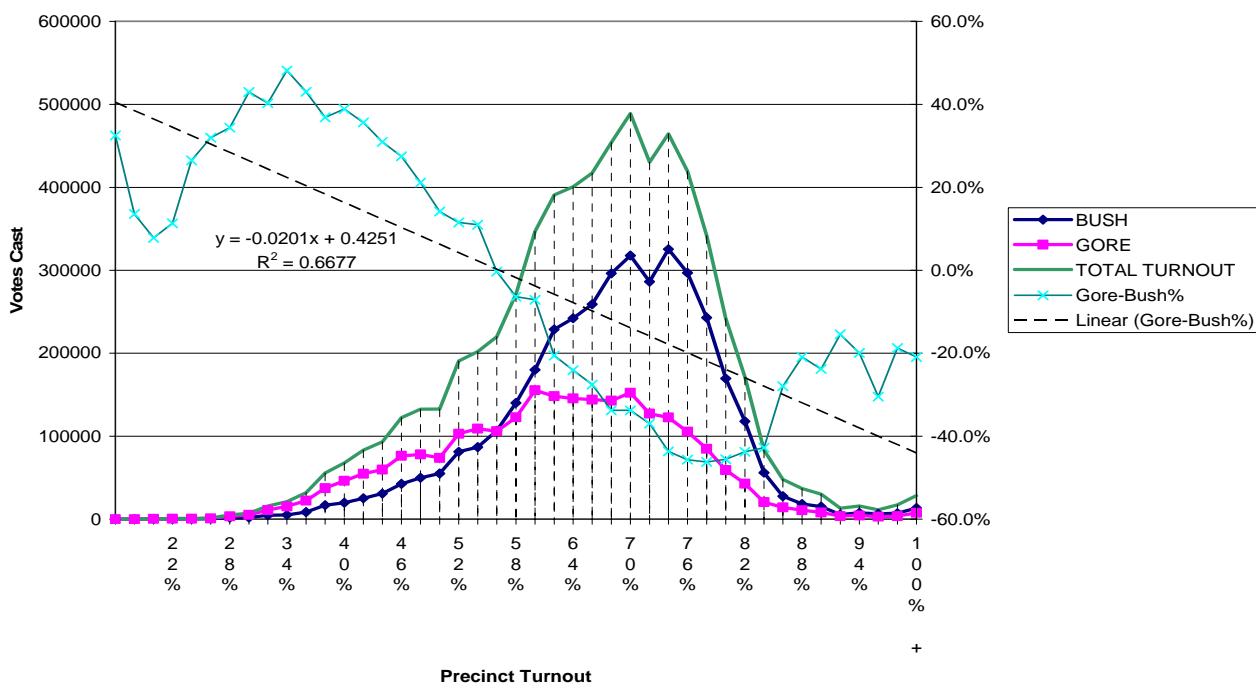
Where this analysis confirms observer reports and opposition complaints, as in the 1996 Armenian presidential elections, that the official outcome does not match any natural voting pattern, the international community should intervene with speed, unity, and clarity⁸. It is less costly in the long run to demand a new and transparent election under redoubled international scrutiny than it is to validate a perversion of the democratic process and inflame the popular cynicism such fraud generates.

Appendix

I am at a loss to explain the shape of the curve in the 2000 presidential elections in Texas (Figure 7). From the spreadsheet data⁹, overall vote turnout was some 63.4%, a close match with both average (62.8%) and median (63.9%) precinct turnout. The peak of the graph of total votes cast is relatively high, at 70%. Were this a state in the Caucasus, I would postulate from this chart the existence of a radical cleavage in political loyalties, with a pervasive oligarchy imposing on certain tight-knit communities near-unanimous support for one of the candidates. Clearly, more scientific explanations exist.

Figure 7

Texas 2000 Presidential Election



¹ Since March 2003 I am no longer an employee of the U.S. Government. Only publicly available information was used in this research. My views in no way reflect those of the U.S. government, nor of the OSCE or ODIHR. Much of the detailed work on Armenian elections took place on my home computer on my own time. I owe an enormous debt of gratitude to U.S. Embassy Political Assistant Alla Bakunts, my interpreter and guide in all things Armenian, and to former U.S. Embassy Economic Assistant Haik

Gugarats, whose brilliant and subversive young mind inspired key statistical insights. My respect for the work of ODIHR and its dedicated specialists is immense. I would like to single out Dr. Soren Theisen, the Danish Caucasus historian, for his wisdom and hospitality in the wilds of Syunik Marz and Copenhagen. Finally, my thanks to the Hellenic Studies Program and the Woodrow Wilson School of Princeton University for their support and insights.

² Office for Democratic Institutions and Human Rights, REPUBLIC OF ARMENIA PRESIDENTIAL ELECTION, MARCH 16 AND 30, 1998, FINAL REPORT at: http://www.osce.org/documents/odhr/1998/04/1215_en.pdf

³Election observer missions made up of politicians, such as those of the Parliamentary Assembly of the Council of Europe and the Commonwealth of Independent States, tend to take a more hieratic and less rigorous view of their role, at least from my limited experience. Many Armenians, at least, felt that their purpose was to witness and bless the recurring miracle of democracy and catch the first flight home after the obligatory banquet.

⁴ State Department Press Spokesman Burns read the following endorsement of Ter-Petrosyan's victory on October 22, 1996, one month after the election, after painful discussions within the U.S. government.

"I have one other statement to read. We're posting it in the Press Room at the beginning of the briefing. This concerns the Armenian presidential election. On September 22, the Republic of Armenia held presidential elections. According to official results, President Levon Ter-Petrosian was elected with 51.7 percent of the vote. Opposition parties mounted effective campaigns as well, with the leading opposition figure, Vazgen Manukyan, capturing 41 percent of the vote. Since the 1995 parliamentary elections, progress was made to improve the electoral process, including redrafting the election law and establishing a new central election commission.

Observers noted a well-managed process in many local precincts. However, international observers, including the OSCE, have reported serious breaches which overshadowed this process. Irregularities in balloting and vote tabulation, particularly in Yerevan, the Armenian capital, remain a cause of deep concern to the international community. The United States calls on the Armenian Government to implement the recommendations of international experts in order to address these flaws and to build confidence in the integrity of Armenia's electoral process.

Regrettably, some opposition leaders chose to express their frustration through violence against the Armenian Parliament on September 25. While the United States strongly supports the rights of all Armenians to peacefully assemble and express their views, we condemn this type of violence which has no place in democracy and only polarizes Armenian society. In responding to such acts, the United States calls on the Armenian authorities to ensure respect for due process and adherence to international human rights practices, including continued access to prisoners by the International Committee of the Red Cross. The United States, furthermore, urges the Armenian Government and opposition to continue to take concrete steps to promote reconciliation between them. In that context, the United States welcomes the announcements by the government and opposition to redress grievances on the election results in the constitutional court, consistent with Armenian law. The United States welcomes steps by the government and opposition toward building an open political process. We call on all people and political parties in Armenia committed to working within the law to forge a political dialogue across party lines. The United States remains committed to working with Armenia to help build an independent, democratic, and prosperous state at peace with its neighbors.

http://dosfan.lib.uic.edu/ERC/briefing/daily_briefings/1996/9610/961022db.html

ARMENIA: Observers: 'Serious Violations' Fail To Affect Vote Result

Yerevan SNARK in English, 1700 GMT 24 Sep 96 Tuesday, September 24, 1996
(FBIS Transcribed Text) YEREVAN, SEPTEMBER 24.

(SNARK). Simon Osborn, Coordinator of the international observers group, announced today the preliminary conclusion of observers from OSCE and the Bureau of Democratic Institutions for Human Rights. According to Osborn, serious violations of the law were recorded during the presidential election, however they did not affect the result at the current stage. Preliminary results show that Levon Ter-Petrosian garnered 51.94% and Vazgen Manukian won 41.15% of votes.

Regarding the violations Osborn said they were recorded during the presidential campaign and in the election day. The state-run TV granted to Levon Ter-Petrosian more time than to his contenders. Moreover, Vazgen Manukian and Ashot Manucharian were refused to appear on TV paid channel a week before the elections. The stealing of ballots and the ballot box from a precinct in Yerevan coincided with energy cut there Simon Osborn considered to be the most serious violation in the election day. Observers also noted that officers violated secret ballot and made servicemen vote in favor of a certain candidate. Osborn expressed concern over the fact that representative of the Internal Affairs and Defense Ministries were presented at precincts in Yerevan, Kotaik, Ararat and Armavir in the election day. Nevertheless, the international observers believe the presidential elections were held legally.

⁵ Office for Democratic Institutions and Human Rights, REPUBLIC OF ARMENIA PRESIDENTIAL ELECTION, MARCH 16 AND 30, 1998, FINAL REPORT at http://www.osce.org/documents/odihr/1998/04/1215_en.pdf. There is a melancholy consistency of electoral misconduct around the globe. The ODIHR report of the 2003 election shows similar flaws. It is sobering how much fraud can take place undetected by even trained observers.

⁶ Ibid, p. 12-13.

⁷ From the Federal Elections Project web site of the American University School of Public Affairs, <http://www.american.edu/academic.depts/spa/ccps/elections/states.html> David Lublin and D. Stephen Voss. 2001. "Federal Elections Project." American University, Washington, DC and the University of Kentucky, Lexington, KY. A few dozen precincts with null data or turnouts of less than 20% or more than 100% were excluded on grounds of probable recording error.

⁸ I used an earlier version of these graphs in 1998 to "prove" to an angry team of U.S. observers that, while the 1996 election had clearly been falsified, President Kocharyan had probably eked out a narrow victory over Karen Demirchyan in 1998.

⁹ Lublin and Voss, loc. cit..