VOTE COUNT VERIFICATION

A USER'S GUIDE FOR FUNDERS, IMPLEMENTERS, AND STAKEHOLDERS

Eric Bjornlund

Glenn Cowan

Democracy International, Inc.

Prepared for:

USAID
FROM THE AMERICAN PEOPLE

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Democracy International, Inc. (DI) provides technical assistance and analytical services and implements democracy and governance programs worldwide for the U.S. Agency for International Development (USAID) and other development partners (www.democracyinternational.com). DI offers substantive expertise across the full range of democracy and governance programming, including (1) elections and political processes (election management and administration, voter education, international and domestic election monitoring, political party development); (2) governance (local government and decentralization, legislative and institutional strengthening); (3) the rule of law (constitutional and legal reform, justice-sector reform, court administration, legal profession, anticorruption, human rights); and (4) civil society development and advocacy. The firm also offers recognized technical expertise in analytical services, including survey research, assessments, evaluations, project designs, and democracy assistance studies, as well as with strategic communications.

Since its founding in 2003, Democracy International has worked in more than 40 countries and in all regions of the world. In the past 25 years, DI's principals have advised and worked with election management bodies, civil society and election-monitoring organizations, political parties, legislatures, government agencies, and others in more than 70 countries.

CONTENTS

ACKNOWLEDGMENTS

Since the mid-1980s, we have been working on developing and assessing vote count verification methods in an effort to improve the integrity of elections around the world and to improve the professionalism of international and domestic election observation. With the same objectives in mind, we undertook this study to address continuing challenges to those who fund, support, implement, and rely on vote count verification.

Democracy International has been working on this project for some time. In March 2007, working with The Carter Center, DI convened a roundtable of experts on vote count verification in Washington, DC. Participants came from USAID, the UN Electoral Assistance Division, the UNDP, International Institute IDEA, the European Union, the Electoral Institute for the Sustainability of Democracy in Africa, the Canadian International Development Agency, the OAS, California Institute of Technology, Cornell University, Johns Hopkins University, Yale University, Freedom House, NDI, The Asia Foundation, RTI International, and CSIS. The presentations and discussion at the roundtable contributed to our effort to synthesize recommendations for donors, policymakers, and implementers regarding VCV strategies and techniques in transitional and postconflict elections and are reflected in this study. We thank all of those who participated.

Many people contributed to the research for this volume. During the course of working on this project, we received excellent research and writing assistance from Adhy Aman, Gina Giere Bjornlund, Adedayo Bolaji-Adio, Robert Colvin, Michael Cowan, Bill Gallery, Jon Gatto, Maggie Moore, Danielle Pearl, and Miki Wilkins. Tim Duvall ably edited the entire document. Evan Smith advised on substance and format. We also received important input from David Carroll, Avery Davis-Roberts, Clark Gibson, Barak Hoffman, David Hoffman, Susan Hyde, Jerry Hyman, Walter Mebane, Pat Merloe, Greg Minjack, Peter Ordeshook, David Pottie, Vladimir Pran, and Alan Wall, among others. Any mistakes or misinterpretations, however, are ours alone.

We gratefully acknowledge the support of the U.S. Agency for International Development for this project. We particularly want to thank Josh Kaufman for his cooperation and support.

We hope this study will contribute to the ongoing effort to improve election monitoring and to the important cause of democracy around the world.

Eric Bjornlund Glenn Cowan

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ACRONYMS AND ABBREVIATIONS

2BL	Second-Digit Benford's Law Test
CDT	Center for Democratic Transition (Montenegro)
CVU	Committee of Voters of Ukraine
DG	Democracy and Governance
DRE	Direct Recording Electronic
EMB	Election-Management Body
EMO	Election-Monitoring Organization
E-Voting	Electronic Voting
FPTP	First-Past-the-Post
GORBI	Georgian Opinion Research Business International
IRI	International Republican Institute
JOMC	Joint Operations Media Center (Indonesia, 1999)
KEDOF	Kenya Election Domestic Observer Forum
NAMFREL	National Citizens' Movement for Free Elections
NED	National Endowment for Democracy
NDI	National Democratic Institute for International Affairs
OAS	Organization of American States

ODIHR	Office of Democratic Institutions and Human Rights (OSCE)
ODM	Orange Democratic Movement (Kenya)
OSCE	Organization for Security and Cooperation in Europe
PVT	Parallel Vote Tabulation
SMS	Short Message Service (Text Messaging)
VCV	Vote Count Verification
VRA	Voter Registration Audit
VVPAT	Voter-Verified Paper Audit Trails
VVPT	Voter-Verified Paper Trails
UNDP	United Nations Development Program
USAID	U.S. Agency for International Development
ZESN	Zimbabwe Election Support Network

CHAPTER 1: OVERVIEW OF VOTE COUNT VERIFICATION AND PURPOSE OF STUDY

The growth of election monitoring and the increasing sophistication of vote count verification (VCV) techniques developed since the 1980s have made it increasingly difficult for autocrats to manipulate the aggregation of election results without being exposed. This kind of fraud previously was common, as in troubled elections in the Philippines in 1986, Mexico in 1988, and Panama in 1989. Indeed, concern about possible manipulation of election results is a classic characteristic of transitional or postconflict elections. But the effectiveness of vote-count-verification techniques today generally makes it possible for monitors to detect any significant cheating in the aggregation of election results and reinforces broader efforts to encourage election integrity.[1]

Since the 1980s, international and domestic election-monitoring organizations have conducted parallel vote tabulations (PVTs), also known as quick counts, to assess the accuracy or verify the integrity of election results as reported by electoral authorities in transitional or postconflict elections. PVTs enable monitoring organizations to verify the aggregation (or "tabulation") of election results after the ballots are counted. In a PVT, local monitors observe the actual balloting and counting at polling stations, verify the aggregation of election results, and independently report the local results from polling stations.

Significantly, in recent years, monitoring organizations have made increasing use of exit polls and public opinion surveys as methods of vote count verification. In an exit

poll, researchers ask selected voters from a sample of polling places about how they have just voted. Then they can compare the findings to reported results. Likewise, some observers have pointed to pre-election opinion polls as a basis for questioning reported results. And some have used various methods of statistical analysis to look for indicators of potential vote count fraud.

The use of different VCV tools by election-monitoring organizations has introduced controversy into vote count verification. Whether, when, and under what circumstances these techniques are appropriate, reliable, and effective is critical, but it has remained a largely unsettled question in the field of international election observation. Despite years of experience and a large body of evidence, international organizations and experts continue to disagree about which of these particular vote count verification techniques are appropriate and effective and about the comparative advantage of particular methods under varying circumstances. As a result, different verification methods compete for resources and public attention, sometimes sowing confusion and uncertainty. These disputes, lack of clarity of purpose, inadequate coordination, and duplication waste resources, threaten the international community's effectiveness in encouraging and monitoring democratic elections, and, worse, can exacerbate tensions in controversial and politically difficult environments.

There have been particular controversies about the choice of VCV techniques, especially the choice between PVTs and exit polls. International development agencies have sponsored PVTs and exit polls that have sometimes worked at cross purposes. Experts have debated the merits

of comprehensive versus sample-based PVTs. International and domestic organizations involved in VCV efforts have had competing institutional interests and priorities, leading to disagreements over VCV methods. These differences of opinion about appropriate techniques threaten the international community's ability to effectively encourage and monitor democratic elections. Moreover, the increasing use of electronic voting and other technological advances in election administration have complicated vote count verification.

To ensure that PVTs and similar verification efforts make a real contribution to combating election fraud, VCV sponsors and implementing organizations must execute these exercises effectively and must explain them well to national authorities, the media, the public, and the international community. VCV implementers and sponsors should exercise caution about exit polls as a method of vote count verification, and the election-monitoring community should cooperate, share best practices, and work together to develop new techniques to respond to evolving political and technological challenges to election monitoring.

In this study, we address these issues and seek to help resolve the debate about VCV by providing a best-practice guide for international development organizations and implementers regarding what VCV techniques to select and when. One of the overarching goals of this study is to help resolve the debates over the most appropriate method of VCV in given situations.

USAID and foreign assistance organizations will likely continue to fund election-monitoring and election-

assistance projects for some years into the future. In almost every case, they will have to decide whether to undertake one form or another of vote count verification. This study is intended to assist donors and policy-makers to make judgments about the appropriate circumstances for funding PVTs, exit polls, and other tactics—such as voter registration audits and opinion polls—to assess the legitimacy of transitional or postconflict elections. (Although not VCV, the PVT observation methodology can also be used to deter or detect qualitative electoral process deficiencies.) We also address new strategies and tactics for how best to verify election results based on electronic voting.

Funders and implementers will also make choices about the details of vote count verification. Variables relevant to such choices will include the available budget, the salience of the election, the size and complexity of the country, the electoral system, the state of political development, and the capability of domestic civil society organizations.

With the deepening of what some have termed the global "democratic recession,"[2] the need for effective vote count verification techniques and broader election monitoring efforts has only become more pressing. According to Freedom House, after two decades of advances in democracy and freedom, the last four years represent the longest period of worldwide decline in freedom since the organization began compiling data nearly 40 years ago.[3] Such unfavorable trends for democracy point urgently to the need for further engagement and focus on democracy and human rights in nondemocratic and backsliding states.

Election monitoring—including VCV and the mobilization of domestic monitoring networks—has the potential to shore up democratic gains, show support for democratic political transitions, point out the need for election law or electoral system reform, and even expose government corruption. Properly conceived and implemented, comprehensive international and domestic election monitoring not only provides an objective assessment of a country's electoral process, but also promotes the integrity of the elections and related institutions, encourages public participation by bolstering civic networks, and reinforces domestic engagement in democratic politics.

But effective, credible election monitoring requires more than just the presence and the concern of international and domestic election observers. It also requires rigorous techniques targeted at critical parts of the process including the voter registration and vote count processes. International development agencies and implementers should employ VCV strategies with rigor and commitment. Election monitoring and vote count verification continue to represent some of the most effective tools with which to deter and identify election-related fraud and to help promote democratic gains in countries in political transition.

An Assessment Tool for USAID and USAID Partners

In preparing this report we have two main objectives: (1) to increase understanding and overcome misconceptions about different VCV techniques, and (2) to aid decision-making and articulate a set of best practices about which particular VCV techniques are appropriate or preferable in

particular circumstances. To this end, we review and assess the available vote count verification techniques, including (a) sample-based and comprehensive PVTs, (b) exit polls, (c) public opinion surveys, and (d) postelection statistical analyses. We also make recommendations on the advantages and disadvantages of various verification techniques, depending on the specific objectives of the project and the nature of the relevant political environment. We use case studies of recent transitional or postconflict elections to illustrate the merits or problems of the various techniques. Finally, we explore how VCV techniques may apply to voter registration lists and new electronic voting technologies and discuss emerging challenges to VCV.

This report provides detailed consideration and comparison of the state-of-the-art research and thinking on leading VCV techniques, including consideration of the programmatic, practical, and financial advantages and disadvantages of different VCV methods. We seek to help develop a set of criteria by which international and domestic election observers will be able to judge the appropriateness, effectiveness, and reliability of particular vote count verification techniques for the country context at hand and to make more informed judgments about the details of those VCV efforts.

We hope that better understanding of these techniques will help prevent duplication and waste of resources, avert fundamentally conflicting advice to election administrators and political leaders in transition countries, and minimize the potential for confusion that might add to uncertainty intense political situations.[4]

Goals of Vote Count Verification

Vote count verification is one part of a broader effort to build election integrity through effective election monitoring. It is but one tool to address one particular election integrity problem—namely, vote tabulation fraud. It seeks to make sure the ballots are counted the way they got into the ballot boxes but does not address how they got into the boxes. In other words, it does not address why people voted the way they did. Yet the threat of vote tabulation fraud has plagued elections in transitional environments for many years and remains a challenge to this day. As "election forensics" expert Walter Mebane states it, "For the votes that were cast, the challenge is to verify that all and only those votes are used in the correct way to allocate the electoral offices."[5]

Indeed, effective methods for verifying election results are essential to successful election monitoring. Without such means, as former U.S. President Jimmy Carter explains:

> There's no way to ascertain the accuracy of the vote count. You can detect fraud [at polling places], and you can see if people have actually gone to the polls or if they've been intimidated. You can examine the voting list in advance . . . see if the laws are accurate and that sort of thing. But there's no way to tell the results of an election, whether they're honest or they're manipulated by the ruling party without some sort of [parallel] vote tabulation or PVT.[6]

As part of broader endeavors to support election integrity, VCV efforts support three primary goals: (1) detection of vote count fraud where it occurs, (2) deterrence of vote count fraud, and (3) forecasting of election results.

1. Detection of Vote Count Fraud. First, VCV provides a means to detect the presence and extent or the absence of fraud in the vote tabulation process. This requires consideration of important issues in VCV design, including sample design, data quality, and statistical analysis, including calculating margins of error. Results from the VCV exercise can be compared to official results and any significant discrepancies outside the margin of error may give rise to an inference that something is amiss. PVTs and other VCV exercises provided a basis for addressing questions about results reported by election management bodies in the Philippines in 1986, Bulgaria in 1990, Slovakia in 1998, Macedonia in 2000, Georgia in 2003, Ukraine in 2004, Mozambique in 2004, Azerbaijan in 2005, Kenya in 2007, and Pakistan in 2008, among others. VCV results, however, can only be a basis for calling official results into question if and to the extent that organizers have confidence not only in the sound design of the VCV project but also in the effectiveness of implementation.

2. Deterrence of Vote Count Fraud. Second, the presence of VCV efforts can deter vote count fraud. The threat that vote count fraud can be exposed may deter authorities who would otherwise be tempted to cheat. This requires that such authorities be aware of plans for VCV and that the potential of the VCV exercise to expose fraud be credible. Whether plans for a given VCV exercise have deterred fraud in a particular case is difficult to measure or

prove. The passage of time and political biases often obscure the recollection of events around transitional elections. But contemporaneous accounts and analysis suggest that PVTs deterred fraud in Chile in 1988 and in Peru in 1990, and anecdotal evidence suggests deterrence in many other important elections over the past two decades.

3. Projecting Election Results. PVTs and other VCV exercises make possible early projections or forecasts of election results. Early results from unofficial VCV samples allow projections before the release of official results. This purpose puts a premium on speed. Organizers of PVTs in Indonesia, for example, publicly announced their projections well before election officials did in 1999 and before midnight on election night in 2004. Likewise, a PVT for the Palestinian elections in 2005 was announced on election night. Exit polls released on election night predicted a win for the opposition candidate Viktor Yanukovych for the February 7, 2010, run-off of the presidential elections in Ukraine.[7]

As discussed below, however, public release of results from samples before the reporting of results by election authorities is controversial and may be prohibited by local law. Some argue that it risks generating more confusion or controversy than confidence in the election.

VCV efforts also support ancillary goals that are important even if they do not by themselves provide a justification for VCV *per se*. Vote count verification provides an organizational focus to foster broader election observation and citizen engagement in the electoral process. That is, a monitoring organization or coalition can use a VCV exer-

cise as the basis for organizing, motivating, and assigning tasks to pollwatching volunteers. Also, VCV can aid qualitative assessments of elections by focusing attention on the other aspects of the electoral process beyond the vote count. Even though VCV processes were not originally designed to do so, they can also aid analysis of voter motivations. Exit polls, in particular, can provide information on why voters made the choices they made while PVTs can also provide information to aid inferences about voter behavior.

The responsibility inherent in any public vote count verification process requires serious concern about the accuracy of the VCV process. Less-than-rigorous efforts, casual experiments, and underfunded exercises are unacceptable—although, as discussed below, the amount of funding necessary may be less than is sometimes believed. It is irresponsible to announce or use results from a VCV exercise that is not both well designed and well implemented.

Vote Count Verification Techniques

For over two decades, election monitoring groups, international foreign assistance agencies, media outlets, research organizations, political parties, and election authorities have used various techniques to verify the integrity of vote counts in transitional and postconflict elections. As mentioned previously, these VCV techniques include sample-based and comprehensive parallel vote tabulations, exit polls, general public opinion polls, and various types of statistical analysis. As we discuss in subsequent chapters, not all of the techniques are equally valid or applicable in all

circumstances, but each has been used at times for VCV purposes. In particular, exit polls, public opinion polls, and other types of public opinion research face serious drawbacks when used as vote count verification tools. As the *The Quick Count and Election Observation* handbook puts it, "Exit polls measure recollections, and opinion polls measure intentions concerning citizens' votes." PVTs or quick counts, in contrast, "measure behavior, not recollections or stated intentions. They measure how people actually voted, not how they might have reported their vote…"[8] Because they measure actual votes cast, PVTs offer a greater degree of rigor for comparisons of VCV results with official tallies.

Parallel Vote Tabulation

A parallel vote tabulation, also known as a quick count, is a vote count verification method that can deter or detect irregularities or fraud in the aggregation ("tabulation") of local election results. Observers collect data at polling stations after the ballots are counted.[9]

There are two approaches to PVT design: sample-based and comprehensive. Distinct from a sample-based PVT, a comprehensive PVT is a VCV method that endeavors to verify election results based on actual observation and collection of vote results from all of the polling centers in a given election. A statistical or sample-based PVT is a faster method involving the gathering of vote tallies from a randomly selected, statistically representative sample of polling stations. In either case, observers can then compare these results to the official tallies released by election officials. (Unless stated otherwise, we use the term "PVT" to refer to

the statistical or sample-based PVT only and not the comprehensive type of PVT.)

Like opinion research or exit polls, PVTs use statistical sampling to project results or to assess the accuracy of reported results, within statistically significant margins of error. Thus, its organizers can verify the integrity of the tabulation of results. A PVT differs from opinion research or an exit poll, however, in that it is based on actual results, as counted by election officials and witnessed by observers who are present, rather than on what individual voters report to interviewers about how they voted.

Parallel vote tabulation (PVT) or quick count: A forecast or verification of electoral results based on actual observation of the vote count in statistically significant, randomly selected polling places. Also called "sample-based parallel vote tabulation" or "sample-based quick count," to distinguish it from "comprehensive parallel vote tabulation" or "comprehensive quick count."

Comprehensive parallel vote tabulation or comprehensive quick count: An attempted forecast or verification of electoral results based on actual observation of the vote count in all polling places in an election.

Exit poll: A survey of voters exiting politically representative polling places, asking them about their ballot choices and motivations.

On occasion, national authorities and international actors have objected to PVTs because they do not accept the validity of the underlying statistics, even though the use of statistical sampling in polling and research is widely accepted among social scientists, media organizations, public opinion researchers, and politicians around the world. This lack of

familiarity with statistics has occasionally motivated foreign development agencies and advisers to prefer the vastly more expensive and daunting task of attempting to conduct a comprehensive parallel canvass of results, or the comprehensive PVT mentioned above. Indeed, a comprehensive independent tabulation can serve constructive purposes beyond vote count verification, such as providing an organizational focus for volunteers, deterring vote-count fraud, and providing a basis for later investigation of claims of cheating in particular localities. It cannot provide a basis, however, for an assessment of the accuracy of the official vote count, for reasons of accuracy, speed, and cost:

Accuracy. Election-monitoring organizations can almost never successfully collect results from all of the polling stations in a country, even under the best of circumstances. It is generally more difficult to obtain results from more rural or harder-to-reach areas, which might have different voting patterns than other parts of the country. Because the missing data are not random, it is not possible, if the election is close, for a comprehensive tabulation to assess whether the reported vote count is accurate. Even the collection of a large percentage of the results will likely be statistically skewed and potentially misleading.

Speed. Vote count verification is usually a time-sensitive project, requiring that VCV implementers obtain results as quickly and accurately as possible. Civic groups using a comprehensive PVT methodology generally cannot process and interpret the enormous amount of data that would be required by a comprehensive PVT in a reasonable time after the elections. The tallying of the official results is enough of a challenge for the government and the election

authorities themselves, with all the resources and authority they command. Such a task is generally impossible for a civil society or other unofficial network, particularly a network of volunteers organized shortly before election day, which likely lacks the funding and organizational capabilities needed to conduct a comprehensive count.

Cost. Comprehensive PVTs cost considerably more than sample-based ones because they require the collection of results from all polling places in the country. This requires many more observers and a much more complex organizational, transportation, and communications infrastructure.

Given these severe limitations, a parallel tabulation of results on a comprehensive basis is not a realistic option for VCV, and an effective VCV must necessarily rely on methods that use random sampling. A comprehensive parallel tabulation is less accurate, slower, and more expensive than a sample-based one. Therefore, as discussed below, we recommend against the use of comprehensive PVTs for vote count verification purposes. Election-monitoring organizations should not attempt comprehensive PVTs, and development agencies and other VCV sponsors should not support them for VCV purposes.

Exit Polls

An exit poll is a survey of voters exiting an engineered sample of polling places. The exit survey asks voters about their ballot choices and typically collects basic demographic information about them, such as their age and gender. It often asks respondents as well about why they made the choices they did and how they feel about various issues. As

with PVTs, issues of sample design—that is, how voters are selected to be included in the relevant sample—are critically important for exit polls.

Exit polls, however, face important limitations that need to be considered before exit polling can be thought of as a reasonable alternative to PVTs for verifying vote counts. First, there are serious concerns regarding the reliability of exit polls, particularly in transitional or postconflict settings. In tense or conflict-prone environments, voters may not provide candid information to unfamiliar questioners after exiting the voting place. In addition, in developed countries, exit polls often rely on extensive historical data and the identification of key polling stations. Most countries lack the historical electoral experience and/or records to provide this knowledge. We discuss these and other limitations of exit polls further in Chapter 3.

Other Types of Public Opinion Research

Some international actors have used public opinion polls to assess the credibility of announced election results. Public opinion polls, however, do not provide a legitimate basis for challenging the integrity of official election results, and thus public opinion polling is generally inappropriate for vote count verification. There are several reasons for this. Surveys are a blunt and imprecise instrument; although a survey may give some information, it is only a snapshot of the public mood and can quickly become outdated. Further, public opinion polls would be unsuitable for close elections where the difference between candidates may be within a small margin of error. In addition, if poorly designed or conducted, surveys can paint a disastrously

inaccurate picture of public opinion, as poor sample or questionnaire design and other external factors can easily distort polling results. To be carried out correctly, depending on the country, survey research can be very expensive, and it must be carefully designed to prevent biased or self-fulfilling results.

Public opinion polls also present other problems that are particular to developing countries or countries in political and economic transition. Lack of census data and understanding of the population to be sampled may introduce unknown margins of error into the survey. The media and the public often have less experience with or little technical knowledge about surveys, which can lead to misunderstanding of the results or failure to accept that the results are representative. In many countries, the technological capacity of the society must be considered; the lack of phones, for example, may mean the traditional technique of telephone polling is unreliable and limits the sample in ways that bias the survey in favor of certain subsets of the population. Finally, in postauthoritarian or postconflict environments, individuals may be hesitant to participate or may be too intimidated to give accurate answers.

In short, seemingly significant differences in results between polls and actual election results might just as likely be the result of problems with survey methodology or accuracy, or of changes in opinion from the time of the survey to election day, as with the conduct of elections themselves. Thus, although public opinion polls may provide useful data about trends in the public mood, they are not an appropriate substitute for other, more effective VCV techniques, including PVTs, to detect and deter electoral fraud.

Post-Election Quantitative Analysis

There have been several notable efforts in recent years to develop new statistical approaches to identifying electoral fraud, as we discuss in Chapter 4. Such approaches analyze vote count data released by election management bodies or governments to identify possible anomalies in the results. If results show an illogical turnout or vote count for a polling place or region or a highly uncharacteristic local winner, for example, such anomalies may need to be investigated further. Identification of anomalies does not necessarily suggest manipulation, though, and it certainly does not prove it. Rather, this kind of process can be used after the fact to identify particular cases that merit further investigation. Some researchers, such as University of Michigan Professor Walter Mebane and California Institute of Technology Professor Peter Ordeshook, have likened this approach to forensics.

One new type of postelection quantitative analysis seems particularly intriguing. Professor Mebane has developed a statistical test that relies on a mathematical principle called Benford's Law, which describes the expected distribution of digits in large groups of numbers, such as vote counts for the polling stations in a given constituency. He argues that a modification of this principle, called the Second-Digit Benford's Law (2BL) test, may be able to identify when vote counts deviate from the naturally expected distribution, suggesting the possibility of fraud in the voting or vote counting or some other type of irregularity.

Professor Mebane argues that his approach has positive attributes that may make it appropriate for vote count veri-

fication. First, provided one has the required data, the strategy can be quickly implemented. Second, the process can be performed using data from the precinct level and is applicable to a number of partisan mixes and district sizes. Mebane has stressed that this process is a quantitative approach to identifying statistical anomalies, not a test that can determine intent. Any triggers of irregularities picked up by his approach would require additional investigation, but the process may help pinpoint specific locations for additional examination.[10]

Structure of this Study

In sum, a variety of techniques have served as means of vote count verification in the past. A careful understanding of the benefits, limitations, and evolution of each method is essential for foreign assistance agency officials, the international election-monitoring community, domestic monitoring organizations, and other stakeholders to make informed choices about particular VCV methods. To that end, we consider each method in detail in the chapters that follow.

Chapter 2 addresses the evolutions and use of parallel vote tabulations. Following early successes in the Philippines, Chile, Panama, and elsewhere, PVTs are widely recognized as an effective tool to verify the accurate aggregation of votes and to independently project the results of critical elections. Today, international and domestic election-monitoring organizations routinely use PVTs to promote democratic transitions and to consolidate already-realized democratic gains. Nevertheless, international organizations and election experts have disagreed sharply about the ap-

propriateness and effectiveness of PVTs in different circumstances.

Chapter 3 examines the role of public opinion research in elections, including public opinion polls, exit polls, and focus groups, and identifies the considerable limitations of exit polls for vote count verification. Public opinion polling can provide information about relative support for different candidates and parties, but it is not a reasonable choice as a real VCV tool. Focus groups can provide insights into the complexities of voter attitudes, but they are not a random or sample-based tool and should never serve as a basis for VCV. Exit polls can provide useful information about voter motivations and behavior in a given society and can begin to establish trends and identify correlations between votes and other variables such as gender, ethnicity, religion, or socioeconomic status. In general, however, because of the danger of voter intimidation and for other reasons we discuss in the chapter, exit polling and other forms of survey research are not the best way to detect or deter election-related fraud or forecast election results in postconflict or transitional countries. We consider in some detail a number of case studies illustrating problems that arise when exit polling is used for vote count verification purposes.

Chapter 4 considers efforts to develop new statistical approaches to identifying electoral fraud. Such approaches analyze vote count data released by election management bodies or governments to identify possible anomalies in the results. Although identification of anomalies does not necessarily suggest manipulation, this kind of process can be used after the fact to identify particular cases, locations, or irregularities that merit further investigation. Variations of

this strategy include comparing polling-station-level data from a recent previous election with current results to identify anomalies in the flow of votes from one party or candidate to another; retrospective application of statistical techniques to official election data aimed at identifying potentially illogical results based on independent knowledge of political or other circumstances; and application of a mathematical principle, known as Benford's Law, that describes the expected distribution of digits in large groups of numbers and thus at least theoretically can identify possible instances of fraud or irregularity when vote counts deviate from the naturally expected distribution. But the postelection statistical methodologies for VCV developed so far contain a number of important shortcomings, including the difficulty of obtaining the necessary local-level election data, the fact that most such analyses will not be available until months or years after the elections, the lack of consensus on their reliability, and the need for skills too advanced or esoteric for most democracy promoters to apply or even to understand.

Chapter 5 addresses some of the policy issues that surround vote count verification strategies and methodologies. It is intended to help the VCV sponsor or implementer choose the most appropriate VCV method for a given electoral context and to guide specific policy choices regarding the VCV exercise. Among other things, we address considerations for choosing among VCV methodologies discussed in this study and emphasize PVTs as our preferred method. We also discuss issues and technical factors to consider when designing a VCV project, including factors that affect VCV implementation and the management of VCV assets;

the management of VCV results, including whether and when VCV results should be made public; and considerations for a VCV implementing organization in the choice of a local partner. We also address arguments leveled by VCV critics along with other challenges to VCV implementation.

Finally, Chapter 6 focuses on four particular challenges for VCV. These include the challenge of using VCV techniques to verify the quality of the voter registration lists; the promise and difficulty of using text messaging and other communications technologies in VCV reporting; the consequences of the increasing use of electronic voting on existing methods of vote count verification; and the challenge of improving coordination, and reducing institutional competition, among development agencies, implementers, election-monitoring organizations (EMOs), and experts.

Exit polls, opinion surveys, postelection forensics, and other techniques can complement PVTs and/or can target important objectives other than vote count verification *per se*. But we conclude, in general, that if manpower, training, expertise, access, political conditions, and funding allow a safe, responsible, and statistically rigorous implementation, PVTs are the preferred option for vote count verification.

CHAPTER 2: PARALLEL VOTE TABULATIONS

The increasing sophistication of vote count verification techniques developed since the mid-1980s has made it far more difficult for autocrats to manipulate the aggregation of election results without being exposed. Among the most notable of these innovations are parallel vote tabulations, also known as quick counts, in which observed vote counts from individual polling places are independently aggregated for comparison with official results. International and domestic election monitors developed these techniques to detect tabulation fraud, which not long ago was employed often by authoritarian regimes as an easy method for controlling or altering election results while maintaining a façade of democratic legitimacy. Following early successes in the Philippines, Chile, Panama, and elsewhere, PVTs are widely recognized as an effective tool to verify the accurate aggregation of votes and to independently project the results of critical elections. Today, election-monitoring organizations routinely use PVTs to promote democratic transitions and to consolidate already-realized democratic gains.

Nevertheless, international organizations and election experts have sometimes disagreed sharply about the appropriateness and effectiveness of PVTs in different circumstances. They have debated the merits of comprehensive versus sample-based PVTs and disagreed over the fundamental wisdom of applying randomization to PVT efforts. Moreover, the increasing use of electronic voting and new methods of authoritarian manipulation of the election process have complicated existing means of vote count verification and posed challenges to the successful use of PVTs.

These challenges threaten the international community's ability to effectively encourage and monitor democratic elections. In many cases, because of the international community's lack of coordination and misunderstanding of the appropriate role and value of PVTs, these efforts have been misunderstood, ineffectively utilized, or dispensed with entirely in important elections. For PVTs to continue to make real contributions to combating election fraud and promoting democracy, the international community and domestic monitoring groups must possess a fuller understanding of the benefits and drawbacks to conducting PVTs in various political contexts.

Early Experience with PVTs and Quick Counts

Parallel vote tabulations have their roots in the pioneering work of the National Citizens' Movement for Free Elections (NAMFREL) in the Philippines in the mid-1980s. NAMFREL, essentially the first nonpartisan domestic election-monitoring organization, implemented what it called a "quick count" to check the accuracy of the official ballot count for the congressional elections in 1984 and the critical, transitional presidential election in 1986. Volunteers throughout the country collected results from individual polling sites and sent them via provincial offices to a central location, where NAMFREL aggregated the local results in order to compare them to officially announced results. In 1986 NAMFREL eventually collected results from some 70 percent of the 85,000 polling sites. After a slow official tabulation of the results behind closed doors, authorities reported that the autocratic President Ferdinand Marcos had won the election. NAMFREL's quick count, in contrast,

showed challenger Corazon Aquino leading Marcos by more than half a million votes out of 20 million cast. Although not statistically definitive, the quick count exposed the fraud and convinced Filipinos and the international community that Mrs. Aquino had really won the election.[11]

For the 1988 plebiscite in Chile on whether President Augusto Pinochet could continue in office, the nongovernmental Committee for Free Elections added an important innovation to the quick count methodology. With advice from Larry Garber and Glenn Cowan, then of the National Democratic Institute for International Affairs (NDI), the Chilean group decided that, rather than trying to obtain the results from all of the polling places in the entire country, the group would use statistical sampling. An independent count drawn from a statistically significant sample could be both faster and more accurate than an independent count that sought to obtain the results from all of the polling places in the country, which, as discussed above, would inevitably be incomplete and unrepresentative. The group's representative sample revealed well before the announcement of the official results that the "no" vote had won handily. This preempted the possibility that the regime might declare victory on the basis of a manipulated vote count.

Contributions of PVTs in Transition Elections:

1. Exposing attempted fraud (e.g., Philippines 1986, Panama 1989)

2. Verifying opposition victory and convincing incumbents to accept defeat (e.g., Chile 1988, Nicaragua 1990, Zambia 1991)

3. Verifying incumbent victory and convincing opposition to accept defeat (e.g., Bulgaria 1990)

Garber and Cowan coined the term "parallel vote tabulation" in lieu of "quick count," which they thought better reserved for an independent verification designed to project results quickly rather than to verify the results. They chose the term "parallel" to distinguish the operation from the official vote tabulation conducted by relevant authorities. They settled on the word "tabulation" to refer to the aggregation or summing of ballots rather than "count" to avoid any connotation of reviewing and recording individual ballots.[12] Nevertheless, many donors, advisers, and observers continue to use the term "quick count" regardless whether the objective of the exercise is to project results quickly or to verify them later and regardless of whether the analysis is based on comprehensive or sample-based data.[13]

After the pioneering quick counts and PVTs in the Philippines and Chile, election monitors in other countries recognized the importance of having an effective means to deter or detect ballot count fraud in transitional elections by independently collecting election results to compare with official results. Domestic monitoring groups in many countries began to use sample-based PVTs to project or verify election results. Domestic and international monitoring organizations used PVTs to make pivotal contributions, often in tense circumstances, to important transitional elections in several different ways.

First, PVTs were able to expose vote count fraud. For the critical 1986 election in the Philippines, as mentioned, the quick count denied Marcos legitimacy for the electoral victory he claimed. Likewise, in Panama in 1989, a church-laity group conducted a PVT based on a representative, statistically significant sample of polling stations that defini-

tively revealed the regime's attempt at fraud in the vote count. In his first significant foray into international election observation, President Carter drew on the results of this PVT to expose and denounce the vote count fraud. PVTs continued to expose fraud in the years following. For example, in Serbia in 2000, "without a massive monitoring operation, and an equally massive parallel vote count," concluded the *Washington Post*, "[the] effort to unseat Milosevic would almost certainly have failed."[14] Concurring, then-analyst and current USAID official Sarah Mendelson noted that "the parallel vote count may have been far more effective than NATO's air campaign in toppling the Serbian strongman."[15]

Second, rather than exposing fraud as in the Philippines and Panama, PVTs deterred it in several other countries by convincing authoritarian incumbents to accept electoral defeats. This facilitated peaceful transitions of power. As mentioned previously, in Chile in 1988, when the release of the official vote count was delayed, the PVT helped convince key Pinochet supporters to acknowledge the victory of the "no" campaign. In Nicaragua in 1990, the results of PVTs conducted by the United Nations and the Organization of American States provided early, independent information that the ruling party had been defeated and allowed the international community to move quickly to encourage acceptance of the results and to facilitate a peaceful transition of power. Likewise, in 1991 a PVT persuaded President Kenneth Kaunda to accept the verdict of the electorate when he suffered an overwhelming loss in Zambia's first multiparty elections after 27 years of one-man rule.

Third, PVTs also contributed to domestic and international legitimacy of elections in polarized transitional environments, which helped convince opposition forces in several countries to accept bitterly disappointing election results and helped defuse the possibility of violence. For Bulgaria's first post-communist, multiparty elections in June 1990, for example, the Bulgarian Association for Free Elections conducted a parallel tabulation that confirmed the victory by the incumbent, former communist party. This convinced many urban supporters of the opposition that the victory was not the result of vote count fraud. In this way, the PVT helped calm the situation and laid the groundwork for later peaceful changes of government. A PVT in Paraguay in 1989 similarly confirmed an incumbent victory in the face of opposition suspicions of electoral fraud.

Thus, by the early 1990s, PVTs had become an important tool in the election monitoring arsenal. Because of the use and effectiveness of PVTs, vote tabulation fraud became less common, even in countries with regimes willing to do almost anything to remain in power. Since then, where effective monitoring has been permitted, rulers willing to cheat have learned to focus on other parts of the process—particularly in the pre-election period—that can be more easily manipulated and for which domestic and international monitors have yet to develop effective deterrents.

At the same time, unfortunately, allegations of vote count fraud remain common. A PVT in Zimbabwe's March 2008 first-round presidential election suggested the possibility of manipulation of the election results. In the December 2007 presidential elections in Kenya, when incumbent President Mwai Kibaki was declared the winner, opposition

protests of alleged vote count fraud exploded into violence that left hundreds of people dead, and controversy emerged over an allegedly suppressed USAID-funded exit poll that seemed to support the claim of fraud. To continue to expose and deter vote count fraud as well as ensure peaceful postelection transitions, the international election monitoring community must continue to conduct rigorous, robust verification of election results and come to a consensus on the best practices for VCV.

Advantages and Disadvantages of Conducting PVTs

Like other forms of vote count verification, PVT methodologies have distinct merits, drawbacks, and limitations that should influence when and how they are used.

Advantages

PVTs are the only technique that verifies the vote count aggregation and tabulation by using actual, observed vote counts from polling stations on election day. Because PVTs involve the independent reporting of actual vote tallies and because of the high level of technical and organizational capacity required to successfully implement them, PVTs have several advantages over other VCV techniques. PVTs tend to be highly accurate, provide results relatively quickly, and offer opportunities to increase the technical and organizational capacity of local monitoring organizations.

Accuracy. The primary advantage of using a PVT is the level of accuracy a monitoring organization can achieve in comparison with other methods of vote count verification. A PVT draws its findings from real votes observed by real

people. Volunteers are trained in the specifics of the ballot casting and counting systems and are physically present to look for irregularities during the voting and counting processes. By collecting data at this stage, a PVT bypasses the vote tabulation or aggregation phase of results reporting, which is often where vote count manipulation takes place.

PVTs are more accurate than other VCV mechanisms for several reasons. First, the sampling error for each polling station in the PVT sample is essentially zero. Exit surveys and opinion research are based on responses from a limited number of voters at each selected polling station or survey cluster, introducing a sampling error into every cluster in the sample. PVTs are based on the observed vote count of every voter in the polling station, which eliminates polling-station-level sampling error. Second, PVTs are based on voters' actions (their aggregated votes) not on their expressed opinion or their claimed action (how they said they voted). Third, the unit of measurement for a PVT is the individual voter, producing very large sample sizes resulting in low margins of error overall. Even a limited cluster sample of several hundred polling stations will produce a sample size of tens of thousands of individual voters and a margin of error under one percent even at 99 percent confidence.

The relatively high level of accuracy for PVTs allows the sponsoring agency or implementing organization to plan how the results will be used in the event of a close election or when there is clear evidence of fraud. With other, less accurate methods of VCV, sponsors and implementers should be much less certain of their results and

thus face a much more difficult decision in determining the correct manner and time for releasing those results.

Capacity-Building. PVTs require a strong organizational structure with national reach. The resources needed to conduct a PVT include the capacity to field thousands of volunteers and the organizational clout to negotiate with the election commission over access, accreditation, and similar issues. In many cases this necessitates coordination among many civic organizations in order to form an election-monitoring network. Whether this role is filled by one organization or a network of organizations, in countries where PVTs are unfamiliar such organizations must build the technical capacity for organization, communications, logistics, results reporting, statistical analysis, media relations, and so on. With sufficient time, planning, and targeted assistance, an upcoming PVT can provide an invaluable opportunity to build civil society capacity that will have a lasting impact long after the election is over.

The act of conducting a PVT can empower civil society organizations, or networks of organizations, in countries where civil society is constrained or has traditionally been weak. Unlike other forms of VCV, PVTs are invariably directed and conducted by domestic election-monitoring groups, albeit often with foreign funding and advice, rather than by international organizations who merely hire local firms. Having control over PVT information can recast civil society as a powerful force in politics, as we have seen beginning with NAMFREL in the Philippines. Creating new, pro-democracy political actors can do much to promote democratization and to help inoculate a new or fragile democracy against authoritarian backsliding.

Disadvantages

Despite these important advantages, this methodology does have important drawbacks that can dissuade or intimidate domestic and international implementers alike from attempting to conduct a PVT. Compared to other forms of vote count verification, PVTs are relatively costly to implement, require a high degree of organizational capacity and technical knowledge, and in some cases have proven complicated to explain and justify to governments, publics, and funders. Fortunately, these disadvantages of PVTs can often be remedied with the right combination of domestic election-monitoring organization commitment, international organizational support, and stakeholder education.

Administrative and Technical Capacity. PVTs can be difficult to administer because they require a high level of technical capacity. The logistics of successfully recruiting, training, maintaining communication with, accrediting, protecting (where necessary), and administratively supporting hundreds or thousands of observers require a highly competent and effective organization. In many cases, however, these organizations do not exist or do not have sufficient capacity to conduct PVTs on their own or without international assistance.

PVTs are often conducted in countries where regimes actively work to block observer efforts, as in Zimbabwe in 2008. In these countries PVTs become even more complex, and regimes can make seemingly simple tasks impossible, such as obtaining a list of all polling stations or accrediting observers. International support and political clout can sometimes be enough to overcome these hurdles. The in-

ternational community must recognize, however, the importance of sustaining support for PVT-implementing organizations throughout the entire electoral process; otherwise, regimes can move to shut down access and render the PVT results meaningless.

Cost. Because they require considerable technical and communications capacity, PVTs often seem relatively expensive to implement (although they can be considerably less costly than some believe). Although it is not comprehensive, a sample-based PVT requires nationwide polling station coverage, a nationwide communications and results reporting network, rapid and accurate statistical analysis, a sophisticated media relations strategy, and the ability to stand up to attempts at official manipulation. But civic organizations should avoid the temptation to try to use other vote count verification techniques in lieu of a PVT on the basis that they are less expensive.

Underfunding PVTs can be dangerous in unstable political environments. In the event of a close election where vote tabulation fraud is suspected, the international community may look to PVTs to provide information about the real results. In such tense situations where solid facts are scarce, incorrect or imprecise results can become the basis for opposition protests. Funders must remember that in some circumstances the decision to challenge a reported electoral outcome could increase the chances of violence. PVTs need to be as accurate as possible, and as well-funded as necessary, to ensure that lives are not recklessly or needlessly put on the line.

Methodologies: Sample-Based vs. Comprehensive Parallel Vote Tabulations

Even where comprehensive PVTs are possible, sample-based PVTs are almost always preferable. A comprehensive independent tabulation can serve constructive purposes, such as deterring vote count fraud, providing an organizational focus for volunteers, and providing a basis for later investigation of claims of vote count fraud in particular localities. But it generally cannot provide a basis for an assessment of the accuracy of the official vote count for two important reasons.[16]

First, the missing data that result from any attempt to comprehensively cover every polling station in a country are both inevitable and nonrandom. Monitors can almost never collect results from all of the polling stations in a country, even given the best of circumstances, plenty of time, and extensive resources. It is generally more difficult to obtain results from rural and harder-to-reach areas, which might have different voting patterns than other parts of the country. Because the missing data are not random, it is not possible, if the election is close, for a comprehensive tabulation to assess whether the reported vote count is accurate. Even collection of a large percentage of the results will be statistically skewed and potentially misleading.

Second, civic groups using a comprehensive methodology generally find it extremely difficult to process and interpret the enormous amount of data they collect in a reasonable time after the polls have closed. Nationwide vote count tabulation is already a significant challenge for the government and the election authorities, with all the re-

sources and authority they command. Comprehensive parallel tabulation poses an even greater problem in parliamentary or legislative elections, in which separate elections are held in each constituency.

PVTs based on data taken from a statistically valid and representative sample of polling places avoid the problems inherent in the comprehensive methodology. Sample-based PVTs minimize or eliminate the problem of nonrandom missing data and allow observers to focus their time and resources on a manageable number of previously identified polling stations. This methodology also makes the amount of data more manageable. All EMOs face technical-capacity, time, and resource constraints.

Overcoming Opposition to and Misconceptions about Sample-Based PVTs

Although international and domestic groups have conducted sample-based PVTs in dozens of countries since 1988, PVTs have sometimes drawn controversy in some quarters of the international community. National election authorities, foreign aid officials, and technical advisers have sometimes questioned the feasibility and accuracy of a vote count verification exercise based on statistical sampling, even though the use of statistical sampling in polling and research is widely accepted among social scientists, media organizations, public opinion researchers and politicians around the world. They also worry that a separate, unofficial vote projection that diverges from the official count might foment postelection unrest.[17]

Misgivings among election authorities and national political elites about the purposes and methodology of PVTs are not surprising. Election authorities rarely like the idea of independent organizations, domestic or foreign, threatening to second guess the official results or offering their own reports of the election outcome. Foreign involvement in such exercises can also be seen as a threat to local sovereignty or hurt national pride because it seems to imply that national authorities require international oversight.

Indeed, there are some good reasons why national authorities or international development agencies might question the value of independent vote tabulation. First, the exercise may represent a poor use of time and resources; PVTs can only detect a particular type of fraud (fraud in the process of aggregating results), and this kind of fraud may be unlikely in a particular country or circumstance. Alternatively, authorities might not have confidence in the group conducting the exercise because of doubts about the organization's ability to competently design and conduct a PVT or about their judgment regarding when and how to report the results.

Other reasons for opposing an independent verification of the results are less benign. Certainly, authorities might oppose a PVT because they do not want fraud to be detected. Second, election commissions might oppose the release of early results as a challenge to their authority. Third, authorities simply might not understand or accept the validity of the underlying statistics.

Although there are legitimate reasons for caution in using PVTs, there are also a number of objections that are misguided or worse.

The 1999 PVT in Indonesia: Emerging International Skepticism

The 1999 Indonesian presidential and parliamentary elections illustrate how the technical complexity of sample-based PVTs can generate confusion and controversy in a polarized political environment if the process is not well explained and well understood. A PVT proposed for the critically important transitional elections in Indonesia in June 1999 produced considerable controversy among both domestic and international actors. Although the PVT was well designed and effectively implemented, it failed to provide the reassurance it should have about the results announced by the election commission.[18]

In response to substantial public mistrust of the official election authorities a coalition of Indonesian universities called the Rectors' Forum, with advice from NDI, proposed a sample-based PVT. Owing to the extent of manipulation in previous Indonesian elections, parties unhappy with the election results were likely to attack the fairness of the process after the fact. Even if Indonesian authorities, with the assistance of the international community, managed to conduct well-organized and honest elections, popular distrust of the outcome would in all likelihood have remained a problem. Assuming an honest count, independent vote tabulation was intended to help satisfy all parties that the results were accurate.[19]

Apparently, for the first time, however, development agency officials and technical advisers questioned the intellectual basis of a sample-based PVT. In particular, some PVT critics questioned the PVT's reliance on statistics. They claimed, incorrectly, that random statistical sampling would not work in the absence of extensive baseline demographic data or could not be used for proportional representation elections. This was a fundamental misunderstanding of the principles of statistics.

Yet because of these unfounded concerns about a sample-based PVT, many Indonesian election and government officials, a number of foreign technical advisers, and some development agency officials initially opposed the PVT. Some urged instead that an independent vote tabulation should consist of a comprehensive PVT, which would attempt to collect all the results from several hundred thousand polling stations in the country, much as NAMFREL had attempted to do in the Philippines in 1986.

Perhaps because of concerns about the PVT, key international actors organized an unofficial comprehensive count in Indonesia, dubbed the Joint Operations Media Center (JOMC). Ironically, although the JOMC anticipated problems with the vote count, it actually contributed to confusion and dissatisfaction with the vote-count process. Rather than building confidence, it raised expectations that it failed to meet and ended up competing with other unofficial and quasi-official vote tabulations.

The JOMC was a parallel process to quickly collect and report comprehensive election results. It was established before the elections at a cost of $2 million—many times

more than the budget of the PVT—on behalf of the Indonesian election commission with funding and technical assistance from American, Australian, and Japanese organizations and the United Nations Development Program (UNDP). Before the election, one of the international organizers invited journalists and observers to come to the JOMC on election night, promising a "facility . . . capable of reporting reliable results of the elections at the earliest practical moment."[20] The UNDP resident representative lauded plans for the JOMC because it would bring "together modern technology and cross-country expertise to enhance the transparency and openness of the electoral process." The JOMC's spokesperson told the media he hoped that 50 percent of the results would be known by the day after polling.[21]

Nevertheless, on election night and even over the next several days, only a small fraction of the country's subdistricts reported information to the JOMC. To make matters worse, election officials were simultaneously reporting separate unofficial results—collected at the village level rather than from the subdistricts and reported through a nationwide computer system made available by two Indonesian banks. This meant that the Indonesian election authorities were in effect competing with the JOMC, ostensibly their own unofficial reporting mechanism. Not only were the data extremely sparse, but there were actually two different quasi-official comprehensive vote-counting systems reporting inconsistent numbers.

The JOMC was ultimately unable to collect meaningful results. By the morning after election day, it was reporting less than 1/4 of 1 percent of the vote, a meaningless num-

ber. Even by three days after the elections, the JOMC could report only 7.8 percent of the vote count, still too small to support any conclusions about the outcome of the elections.

The slow count contributed to controversy about the election results and vote-counting process. The lack of meaningful results, the competing sets of numbers (both ostensibly from the election authorities), the failure to provide any real explanation for the delay in reporting results, and the widespread mistrust combined to heighten suspicions and concerns. Rather than reassuring Indonesians and the international community about the integrity of the vote count, the JOMC parallel count actually undermined confidence by raising expectations that it could not meet. Both the sample-based PVT and the comprehensive JOMC ultimately failed to build confidence in the integrity of the reported election results.

The Power and Limitations of the 2008 PVT in Zimbabwe

The contested 2008 Zimbabwean presidential and parliamentary elections illustrate how PVTs can play a significant role in election outcomes. Civil society organizations used PVTs to frustrate the regime's attempt to prolong and manipulate the vote count by bringing vote tabulation fraud into the public eye. The successful implementation and substantial political impact of the PVT, however, did not prevent a violent regime crackdown on both the groups who had administered the PVT and civil society more broadly. The case of Zimbabwe's 2008 parliamentary and presidential elections demonstrates both the power and the limitations of PVTs as agents of political change.[22]

Zimbabwe held presidential, parliamentary, and local elections on March 29, 2008. Given the country's dire economic situation, the elections were expected to provide Robert Mugabe's toughest electoral challenge since the start of majority rule in 1980. But despite foreboding preelection forecasts about the possibility of violence, the polls took place fairly peacefully and the government stuck to its agreement of posting vote count results outside each individual polling station, which made vote count verification possible.

Beginning after election day, a major controversy emerged regarding the final results of the presidential election. In particular, the question of whether or not Morgan Tsvangarai of Movement for Democratic Change (MDC) had garnered more than 50 percent of the presidential vote dominated the postelection period. The Zimbabwe Election Commission's initial hesitation to release the presidential results and the emergence of several sets of PVT results led to controversy over the presidential outcome and heighted political tensions.

The Zimbabwe Election Support Network (ZESN), a domestic observation network established in 2000 and composed of 30 civil society organizations, conducted a PVT with training and support from NDI. The posting of vote count results outside each individual polling station made it possible for ZESN observers to watch the balloting and collect posted returns at 435 of the country's 9,400 polling stations. ZESN's PVT was based on a representative, statistically significant sample of polling stations across Zimbabwe's 10 provinces, stratified by province and urban and rural areas.[23]

ZESN released the initial results of the PVT on March 31, two days after the balloting. They showed opposition leader Tsvangirai with 49.4 percent of the vote, an 8 percentage point lead of President Mugabe, but, significantly, less than 50 percent of the vote necessary to avoid a runoff.[24]

A new monitoring group, the Independent Results Centre, also attempted a PVT. Unlike ZESN, IRC attempted to carry out a comprehensive PVT by gathering results posted from all polling stations. The IRC forecasted an absolute majority of 50.3 percent for Tsvangarai.[25] Similarly, the MDC, Tsvangarai's party, announced days after the elections that Tsvangarai had won an absolute majority of the votes. If correct, this would mean that no runoff election would be necessary. Meanwhile, even though the election commission had not announced results, Mugabe's party, Zimbabwe African National Union-Patriotic Front (ZANU-PF) maintained that Tsvangirai had not won an absolute majority.[26]

For five weeks, the election commission failed to announce the results of the presidential polls. The combination of conflicting, but close, PVT results and the election commission's slow presidential vote count soon heighted political acrimony. The sluggish pace of the vote count, the lack of transparency, and the failure to address the reasons for the delay fueled rumors of vote rigging.[27] These rumors were heightened when weeks after the elections, there were violent attacks, apparently sponsored or condoned by the regime, against members and supporters of the MDC, domestic civil society organizations, and the groups that had conducted the PVT. On April 25, police raided the ZESN's

headquarters in Harare, seized documents, and detained its chairman, Noel Kututwa, for questioning.[28] An American advisor to the group from NDI was detained at the airport in Harare as he was trying to leave the country and held for six days.[29] Reports emerged of youth militias and state forces participating in the expulsion or detention of journalist and foreign aid workers. And in the midst of attacks against the opposition, MDC leader, Tsvangirai fled abroad.[30]

Taken together, the results of civil society PVTs, while not in agreement, suggested that Tsvangirai had won between 47.0 percent and 51.8 percent of the votes. [31] Ultimately, the regime settled for a runoff. On May 2, the election commission belatedly announced the results of the presidential race.[32] Consistent with the results presented by ZESN's PVT, the commission found that, although Tsvangirai had received more votes than Mugabe (47.9 percent to 43.2 percent), neither of the leading candidates had won an absolute majority. The election commission's announcement meant that there had to be a run-off election of the top two finishers.

The fact that the PVTs had given the public a sense of what the actual presidential outcome was apparently preempted ZANU-PF and the election commission from claiming an outright victory for Mugabe. While the election commission dithered, the regime seemed to move toward coercion and violence. As one report explains, "The time of waiting for the results of electoral challenges and re-counts became the space for security force deployment [to try] to reverse the March result."[33] Similarly, before the runoff elections, there was "increasing 'war-talk as method of

campaigning'."[34] Ultimately, with regime-sponsored violence against the opposition and civil society, Tsvangirai withdrew from the run-off, claiming it could not be fair and allowing Mugabe to win the uncontested second round on June 27, 20008.[35] Nevertheless, in response to civil society and international pressure, Mugabe was forced to accept a power-sharing agreement with the MDC that, among other things, called for Tsvangarai to become prime minister.

The PVT election in Zimbabwe in 2008 appears to have played a key role in preventing the government or the election commission from declaring a first-round victory for Mugabe. But the harassment of PVT implementers and advisers after the first-round presidential election and during the preparations for the run-off, which Tsvangarai eventually boycotted, suggest that the authorities would not have permitted a PVT to go forward again. The Mugabe government had learned how powerful a PVT could be.

Toward Better Understanding of PVTs

The parallel vote tabulation methodology remains a fixture of both domestic and international election observation strategies. PVTs provide a proven, reliable tool for deterring vote tabulation fraud before it occurs and uncovering fraud where it is attempted. Thus, they address one of the most common and straightforward avenues of electoral manipulation. As we explain throughout this study, we believe a PVT is generally a better choice than exit polls, opinion polls, statistical tests, or other means of vote count verification.

CHAPTER 3. LIMITATIONS OF EXIT POLLS AND OTHER TYPES OF PUBLIC OPINION RESEARCH

Public opinion research provides policymakers, political parties, the public, NGOs, domestic and international democracy promotion organizations, and other stakeholders with valuable information about public attitudes, trends in political climate, public support for political reform, support for democracy, and other issues. Such insights into the political perspectives of a country's citizens can provide a number of positive benefits, particularly for the consolidation of democracy. The data from public opinion polling help representatives, candidates, and policy-makers identify and respond to their constituencies, and this knowledge can contribute to the creation of more responsive and representative governments. Survey research also aids democracy promotion organizations in the design and evaluation of democracy and governance programs and in the monitoring of progress toward democratic development. In elections, these research methods can play an important role in shedding light on voter preferences and on the wider political and electoral context and can complement parallel vote tabulation exercises, which are better designed to verify vote counts, detect fraud, and project results. Nevertheless, survey research, including exit polls, has considerable limitations as a means of VCV.

Public opinion research refers to public opinion polls, exit polls, and focus groups. Survey research and opinion polls utilize sets of questions to collect information about people's preferences, motivations, and behaviors. *Public opinion polls* can provide helpful information about the political climate in a particular country and have made im-

portant contributions to democracy and governance programs. As we discuss in this chapter, opinion polling is extremely important for democracy and governance programming but generally is not justifiable as a means of vote count verification. An *exit poll* is a survey of voters, taken immediately after they have cast their ballots and exited the polling stations, that asks them about their ballot choices and the motivations informing those choices. Unlike an opinion poll, which asks before an election about a voter's future intentions, an exit poll asks for whom the voter actually voted. Within some margin of error, assuming they are properly designed and implemented, exit polls can give an early indication as to how an election has turned out. Despite methodological and other challenges, exit polls in recent years have emerged as a VCV tool, perhaps in part because they are relatively inexpensive and familiar. *Focus groups* are meetings in which people discuss their opinions, perspectives, and attitudes about a given subject. Focus groups might address people's attitudes, for example, toward their government and society or particular political leaders. Although they can provide important information, focus groups are not a random or sample-based tool and should never serve as a basis for judging public opinion, much less VCV.

In this chapter, we discuss the use of public opinion polling and exit polls for vote count verification. Public opinion polling can provide information about relative support for different candidates and parties, but it is rarely a reasonable choice as a real VCV tool, for a number of reasons. Opinion surveys are difficult and expensive to design and carry out, they provide only a snapshot of public opin-

ion that can change quickly, respondents may not answer accurately, and they are often difficult for the media and the public to interpret. Likewise, exit polls provide important information about elections but also have major limitations as a form of VCV. These include problems with intimidation of exit poll respondents, methodology, neutrality of sponsors and implementers, and release of results, as well as the pitfalls associated with drawing conclusions from a comparison between exit polls and official results. We begin with an assessment of public opinion polling and then proceed to focus on exit polling. We then consider several case studies to provide examples of some problems associated with using exit polls in general and specifically for VCV.

Public Opinion Polling

Some U.S. democracy assistance organizations have focused considerable attention on the use of survey research in their election monitoring, political party assistance, and other DG programs. Although they have potential drawbacks, these efforts have made contributions to party development, election integrity, and other DG objectives. More broadly, the attention to polling has helped establish survey research as a democratic norm and has focused attention on the importance of public opinion in a democracy.

The emphasis on public opinion polling in DG programming has had many positive effects. Polling provides important input into the development of party platforms and campaign strategy. Indeed, party activists and members of parliament in some countries have credited public opinion surveys with encouraging parties to design platforms

responsive to broad public opinion and helping them to design electoral strategies, identify and get out voters, and forecast election results. Surveys can help identify and specify the unique advantages and challenges political parties may face by offering insight into party constituencies, issues of importance to the populace, and effective campaign strategies. Polls, moreover, can provide a statistically reliable measure of how aware or receptive different segments of the population are to party messages or to information provided in DG programs. By encouraging attention to survey research, international actors demonstrate the value of reaching out to the public and considering what the public thinks. Survey research can contribute to DG programs by providing a snapshot of underlying public opinion. When executed properly, survey research can help assess public knowledge and attitudes about policy issues, democratic institutions, and processes as well as gauge levels of support for particular parties or candidates.

Moreover, the attention to polling has helped establish survey research as a democratic norm and has focused attention on the importance of public opinion in a democracy. USAID assistance programs have directly supported the development of polling capacity through training and working with local partners to plan and design such surveys. Survey research almost always involves local partners and thus has provided these local research organizations and firms the ancillary benefit of training and enhancement of their capacity to conduct and interpret opinion surveys.

At the same time, several potential concerns accompany this focus on survey research. First, survey research depends on adherence to strict methodological standards to

ensure the validity and reliability of the data. Implementers need to oversee all aspects of the research, analysis, and presentations based on the research, but this requires considerable time and sophistication.

Second, in some countries, political parties, the media, academics, and the public are not fully able to understand and interpret survey research. As one polling expert, after working in an emerging democracy, put it:

> Opinion polling, a product of mature democracies and market economies, has parachuted into an emerging economy and democracy, which certainly does not have the communications infrastructure to support it, may not have the institutional independence necessary to manage it, and with few exceptions does not have the critical facility within the media and universities to place the results in perspective.[36]

Although understanding of polling may be improving in many places, it still has not reached the point where the media, political parties, and the public can easily interpret polling results. Thus, while supporting survey research can help to build capacity and increase the level of sophistication with regard to polling, implementers should be aware of these limitations.

Third, survey research sponsored in the context of democracy assistance programs should serve a development purpose, such as vote count verification, rather than being weighed down by attempts to obtain information for the use of foreign organizations and governments for other analytical and foreign-policy purposes. Even though developmen-

tal and information-gathering or analytical objectives are not mutually exclusive—particularly since the promotion of democracy and democratic elections is a U.S. foreign policy goal in itself— polling in the context of democracy assistance programs should be conceived as a means of contributing to democratic development rather than as a way to provide information to diplomats, governments, or others in the international community.

But in some countries polling ends up being used principally to provide information to sponsoring governments or the international community rather than its intended use for domestic political parties or other DG purposes. This is particularly dangerous if domestic audiences perceive research as a means of supporting the gathering of information for foreigners—a form of intelligence gathering—rather than as a sincere attempt to provide democratic assistance. The principal audience for such polls in the context of development assistance should be local ones, and the purposes should include reinforcing to governments and political elites the importance of public opinion and building necessary skills for conducting and interpreting polls.

Ultimately, survey research can contribute to party development and to the electoral performance of democratic parties. Survey research, however, is a tactic rather than a strategy, and its limitations should be acknowledged. In the context of political party programs, for example, assistance providers should be judicious about the use of public opinion polling and should keep in mind the goal of party (and democratic) development. The main objectives should be the transfer of skills and norms, such as convincing party clients of the value of listening to the views of their sup-

porters and the larger public. Most important, assistance providers should continue to ensure the impartiality, integrity, and technical competence of their local partners and consultants.

Focus Groups

Some democracy assistance organizations also use focus groups to conduct research, which offer another form of public opinion polling, albeit a non-random one. Structured focus groups can elicit a range of ideas, attitudes, experiences, and opinions held by a selected small sample of respondents on a defined topic. In closed, semiauthoritarian, or postconflict societies, focus groups can be a valuable tool for understanding beneath-the-surface complexities and attitudes that cannot be easily measured. They cannot be the basis, however, for measuring opinion and cannot substitute for opinion polls based on statistically significant samples. Because they do not involve sample-based methods, focus groups cannot play any role in VCV.

Survey Research and Vote Count Verification

In addition to using public opinion research to inform DG projects in general, some international actors have used public opinion polls to assess the credibility of announced election results. For a number of reasons, however, public opinion polling does not provide a basis to legitimately challenge the integrity of official election results, and thus it is generally inappropriate as a vote count verification technique. First, although a survey may provide some information, it provides only a snapshot of the public mood and can quickly become outdated. Moreover, if poorly de-

signed or conducted, surveys can paint a disastrously inaccurate picture of public opinion; good survey research is not easy, and researchers must carefully design surveys to prevent biased or self-fulfilling results. In addition, in postauthoritarian or postconflict environments, individuals may be hesitant to participate or may give inaccurate answers. Furthermore, the media and the public often lack technical knowledge about surveys, which can lead to misunderstanding of the results or failure to accept that the results are representative. Public opinion polls also would be unsuitable for VCV in close elections where the difference between candidates is expected to be within the margin of error, especially given that the questionnaire design, wording of survey questions, field competence, and other survey-related factors can easily shape polling results. For these reasons, even a survey taken *on* election day cannot stand as proof of vote count manipulation, regardless of whether the announced result is outside the survey's margin of error. And survey research can be expensive. Although public opinion polls may provide useful data about trends in the public mood, they are not an appropriate substitute for a PVT to detect and deter electoral fraud.

Indeed, opinion surveys by international assistance organizations conducted shortly before elections can influence voters and lead to unintended local political consequences. Moreover, surveys in general should be designed to further democratic development purposes rather than to provide information to the international community about voter preferences. Just as with exit polls and PVTs, organizations conducting these efforts should keep in mind the

mechanics and purpose of VCV as well as recognize the sensitivity of timing in the release of results.

Exit Polls

In recent years, domestic and international organizations have increasingly turned to exit polls to verify the officially reported results in the transitional elections of emerging democracies. Outside observers have credited exit polls with playing a key role, for example, in exposing fraud in Serbia and Mexico in 2000, Georgia in 2003, and the Dominican Republic and Ukraine in 2004.[37] U.S.-funded organizations have sponsored exit polls as part of democracy assistance programs in Macedonia (2002), Afghanistan (2004), Ukraine (2004), Azerbaijan (2005), the West Bank and Gaza Strip (2005), Lebanon (2005), Kazakhstan (2005), Kenya (2005, 2007), and Bangladesh (2009), among other places.

Exit polls have long been employed in developed countries to quickly predict the outcome of elections. If conducted in countries with a history of democratic elections and in which citizens have reasonable confidence in their own safety and security, then well-designed exit polls can serve as an effective method for projecting election results.

The use of exit polling for purposes of vote count verification in emerging democracies has increased in recent years, and some in the international community appear to see this process as a replacement or alternative to a PVT. Exit polls have become more popular because they are typically less expensive and more straightforward to implement than PVTs and are generally more familiar to Ameri-

cans. Assuming that they are accurate, polls in any society—whether conducted on election day or at other times—can provide valuable information about citizen or voter motivations and preferences.

Exit polls use multistage random sampling. The exit pollster draws a random sample of polling places (precincts) within the relevant jurisdiction. This sample should be selected so that the odds of any polling station being chosen are proportional to the number of voters in that precinct; in other words, the odds of any given voter being represented in the sample should be the same. During the balloting, interviewers stand outside each sampled polling station and randomly select a specified number of voters during the day as they exit from voting. The interviewers do so by counting voters as they leave the polling place and selecting every voter at a specified interval (such as every 10th voter). The interval is chosen so that the required number of interviews will be spread as evenly as possible over the course of the day.

Even in the U.S., where they have a long history, exit polls can prove problematic and controversial. For one thing, concerns linger that the release of exit-poll results before the real polls have closed may well influence those yet to vote. More important, especially for vote count verification, the reliability of exit polls has been questioned, particularly in close contests. In Florida in 2000, for example, television networks relying on exit polls first called the U.S. presidential race for Al Gore, then later for George W. Bush, only to finally conclude that the results were too close to call. In 2004 exit polls erroneously showed John Kerry leading nationally and in several key states. As one

account put it, "On the afternoon of Election Day 2004, the world was abuzz with the news: exit polls indicated that John Kerry would decisively win the election and become the next president of the United States."[38] Even in established democracies, there are reasons to be cautious about exit polls.

Exit Polls in Transitional or Postconflict Elections

Exit polls have important limitations that need to be considered before they can be thought of as a reasonable alternative to PVTs for verifying vote counts. These limitations include the extent to which voters will not participate or may not provide candid information to unfamiliar questioners and the lack of historical data to enable the identification of key polling stations. Exit polls may be especially unreliable in transitional or postconflict environments.

As in established democracies, exit polls in transitional, semiauthoritarian, or postconflict environments do provide a significant opportunity to assess voter motivations and concerns. Exit polls can capture voters' attitudes toward the ruling party, their assessments of government performance, and their views toward other groups within society. Exit polls also allow questioners to collect important demographic data about voters, such as income level, ethnicity or language group, gender, and education level. Such research enables postelection analysis of voting patterns that can highlight anomalies and inform the development of future DG programming.

At the same time, however, exit polls involve substantial limitations, particularly in developing democracies, that VCV implementers must address before thinking of exit polls as alternatives to PVTs. First, the climate of intimidation that prevails in many transitional or postconflict environments may make many voters unwilling to participate, which can affect the reliability of exit polls. This adds to any typical reluctance of voters to reveal their preferences to unfamiliar pollsters even in more stable environments. Second, exit polls for transitional or postconflict elections face particular methodological challenges, and many have suffered real or alleged design flaws; these challenges include (a) the lack of previous election results, (b) the proper calculation of applicable margins of error, and (c) the need to include late-in-day voters. Third, in many countries, the impartiality of exit poll sponsors or funders and implementers has been open to question. Fourth, there has been controversy about when (if not whether) sponsors and implementers should make the results of exit polls public. Questions remain, for example, about whether the results of foreign-sponsored exit polls should be announced before those of domestic election management bodies. Finally, there is a question about whether it is meaningful to judge exit-poll results by how they compare to reported results; this can be circular, as the exit polls are intended to verify such reported results. We discuss each of these issues and relevant case studies in the remainder of this chapter.

Intimidation and Selection Bias

The validity of any exit poll relies on the willingness of voters to tell a stranger how they voted. For all the potential

problems with exit polls in developed countries, there are even greater reasons to worry about the validity of exit polls in transitional or semiauthoritarian societies, where an historic climate of intimidation may make many voters unwilling to participate in a survey. As former U.S. President Jimmy Carter, referring to elections in developing countries, puts it:

> In general, I think exit polls are worthless because if there is a dominant or abusive ruling party then the people are intimidated. . . . Even if they can give a private interview with an exit poller, they're reluctant to give their true feelings. "I voted against the ruling party." That would be very difficult for some people to make, particularly if it's the first election they've had, and they don't have a sense of security.[39]

All exit polls face a fundamental statistical problem of selection bias. Because they sample only a small fraction of voters, there is always the danger that the sample will not accurately represent the larger universe of voters. Especially in a heterogeneous population, selection bias can produce inaccurate results. Purely random sampling would theoretically eliminate this problem, but the introduction of multistage sampling and adjustments for particular demographic characteristics raise the risk that this problem could be significant.

As one type of selection bias, exit polls confront the potential of nonresponse bias because voters may vary in their willingness to participate in the exit polls or to answer truthfully about how they actually voted. Researchers can-

not necessarily assume those who choose not to respond are randomly distributed. In an attempt to address nonresponse bias, exit pollsters may make statistical corrections for possible bias in gender, race, ethnicity, and age that might result from refusals of some sampled voters to participate. To this end, interviewers should note basic demographic factors for voters that decline to participate, such as gender, race or ethnic group, and approximate age. But even these adjustments presume good knowledge of what demographic criteria are significant in a given society.

Difficult, tense, or violent pre-election conditions raise questions about whether voters feel safe to express their political preferences and, thus, about the appropriateness and accuracy of an exit poll. An exit poll may be inappropriate if participants are uncomfortable being questioned and are apt to misrepresent how they voted. Moreover, if voters decide not to participate as a result, this will introduce selection bias into the sample, which compromises the accuracy of the poll.

Methodological Problems in the Design of Exit Polls

Exit polling, like other kinds of survey research, depends on adherence to strict methodological standards to ensure the validity and reliability of the data. Implementers need to oversee all aspects of the research, analysis, and presentations based on the research, but this requires considerable time and sophistication. Even so, sponsors and implementers should acknowledge the limitations of exit polling methodology in developing countries. These include (a) the lack of previous election results, (b) issues

with calculating margins of error, and (c) failures to survey late-in-day voters.

Lack of Previous Election Results in Exit Polls

When designing samples for exit polls in developed countries, pollsters often rely on past voting patterns that identify key precincts. Even if voters do feel safe to express their political preferences, a valid exit poll generally relies statistically on analysis of past voting patterns that identify key precincts whose results are indicative of the broader results. In contrast to using a random sample set of polling places, selecting precincts based on past results and conducting an exit poll using this sample means the exercise is no longer random. The advantage is that using these data reduces the time and resources needed to design the sample and thus to conduct the exit poll. In more established democracies, these election data exist, as often does a history of exit polling. Thus, in these countries, with these data as a basis for research, exit polls can often reasonably form a credible basis on which to project election results.

But elections subject to international vote count verification often lack reliable past results. In developing countries, past elections may not have been recent enough to be relevant, or the necessary data may simply not exist. Even where data do exist, parties' popularity may grow and diminish from election to election and the electoral landscape may change quickly. This lack of prior election results and information may limit the speed and economy with which pollsters can design and execute an exit poll. Without the knowledge of past electoral history, implementers and fun-

ders of exit polls know less about the political trends of the population they are sampling.

Pollsters can avoid some of these pitfalls by selecting a random sample of polling stations to conduct the survey of voters. This method offers benefits in terms of increased rigor regarding the representativeness of results, which means the lack of previous results does not itself prevent meaningful exit polls. But it does not remove the problem that exit polling's inherent use of multistage sampling prevents the possibility of fully random sampling, and it does add cost and complexity.

Margins of Error

Calculations of a given poll's margin of error prove critically important to any inference that there are problems with the vote count from the electoral authorities. The margin of error is a measurement that represents the amount of sampling error in survey research. Based on the laws of statistics, it reflects the degree of confidence that the measurements of the sample reflect the measurements of the population. In other words, the margin of error says that if these questions were asked again, the same percentage of respondents plus or minus the margin of error at a specified confidence interval would answer the same way. Lower margins of error mean greater certainty regarding the method and results of the survey. This becomes important in the event that the VCV results seem to call into question the official results. Lower margins of error also help VCV sponsors and implementers in a given country defend their research methodology in the face of criticism from electoral officials, politicians, parties, the international community,

and other stakeholders. But, as discussed below, reducing the margin of error also increases costs and complexity.

Selection Bias: Late-in-Day Voters

Pollsters introduce another source of bias if they fail to sample voters late in the day. Exit polls often seek to project results as quickly as possible. This may mean that late-hour voters are undersampled or not sampled at all. This, too, can introduce bias because people who tend to vote later in the day may be substantially different from or from different demographic groups than those that vote earlier.

Impartiality of Sponsors and Implementers

For many elections in postconflict countries or countries in political transition, there have been questions or controversies about the impartiality of exit poll sponsors, funders, and implementers. Because groups conducting exit polls may choose to confront election authorities or the government of a country with results that differ from official government tallies, contention may arise and questions about bias of donors or implementers of the polls can distract from the goals of deterring and detecting fraud.

For example, the U.S. polling firm of Penn, Schoen, and Berland conducted an exit poll for the referendum in Venezuela in 2004 on whether to recall President Hugo Chavez. That exit poll showed a landslide for recalling Chavez from office, which contradicted the count from the election commission, which found that a substantial majority backed keeping the president. But critics attacked the credibility of the exit poll, in part, because the interviewers were tied to anti-Chavez activists. (See discussion in Chap-

ter 4.) The 2005 parliamentary elections in Azerbaijan (discussed below) offer another good example of the problem when polling organizations and sponsors are not independent.

Public Release of Exit-Poll Results

As noted above, there is broad concern about the potential effect of early release of exit-poll results. The worry is that the release of exit-poll results will affect those yet to vote. Because of this concern, the media in the U.S., Europe, and elsewhere generally are committed, or required, to withhold the results of exit polls until after the close of balloting. Indeed, many countries prohibit the release of results from opinion polls during a specified period before election day through the close of polling; other countries ban exit polls altogether.[40]

At the same time, a delayed or limited release of exit-poll results can leave the impression that the poll results are being suppressed. If exit poll groups do not announce their findings, opposition parties, the media, or other domestic and international stakeholders may place considerable pressure upon exit poll sponsors and implementers to do so. If polling results are not made public or broadly available, it can leave the impression that the polls are being used for some other purpose or that exit poll sponsors have suppressed their results because they were not happy with what they found. Thus, in Kenya in 2007, there was much suspicion about why the results of the USAID-sponsored exit polls were not released. On the other hand, when it is necessary to wait to release results due to questions over exit-poll methodology, missing data, escalating violence, or

other factors, exit poll groups should publicly disclose the reasoning behind their decision, in accordance with their pre-established external communications plan.

Managing the public release of exit-poll results has often proved challenging and controversial. Controversy remains about whether and when the results of exit polls and other VCV results should be publicly released. The release of poll results before the announcement of official tallies by election authorities can create tension between poll organizers and the election authorities or government of the country. Such an early release of results may not be necessary to deter or expose vote-count fraud. In these cases, and when the international community views exit-poll results as tantamount to the actual election results themselves, tension grows. Election and governmental authorities may feel that they are competing with exit poll organizations for credibility and publicity.

Governments and election officials may also be wary of unofficial numbers whose accuracy they have no control over. Electoral and governmental authorities are understandably sensitive about the public announcement of unofficial numbers whose accuracy those authorities cannot control. When Ecuador banned exit polls and quick counts in 2007, the president of the Supreme Electoral Court said the purpose was to prevent groups from "having the temptation to announce shock results only so that later, if the reality doesn't confirm them, to say there's been fraud. It's our obligation to avoid that speculation."[41] The reliance of polls on statistics may cause confusion. If inaccurate, the results of such polls may even create a false impression of problems or fraud. Indeed, in some of these scenarios, exit

pollsters may even seek to gain publicity by making polling results public and scooping local actors.

Even if the results of an exit poll or PVT are accurate, this does not require international observers or others in the international community to go public even before election authorities or domestic organizations do so. Public preemption of the official count does little to build local capacity or command respect for local institutions, and may not be necessary to deter or expose vote-count fraud. Exit-poll results can be fully considered after official tallies are announced.

The decision of whether and when to release an exit poll may differ from election to election depending on the political realities of the country and election developments. As they decide, exit poll sponsors and implementers often face difficult questions. To facilitate this decision making, funders and implementers of exit polls should consider these issues and should decide in advance (i.e., when they design the project) who has the authority to decide when to release results and what factors should be taken into account.

Drawing Conclusions from Comparisons with Results from Competent Authorities

Sponsors and implementers of exit polls often defend their polls' accuracy by pointing to how closely they track official results. Researchers in Macedonia, for example, defended their methodology on the ground that the exit poll's results matched the official ones reasonably closely.

To use the official results to validate the effectiveness of an exit poll, quick count, or PVT, however, is arguably circular. It implicitly presumes that the official results were reported accurately, but this is exactly what the verification exercise is intended to determine. If there were significant manipulation of the actual tabulation, it would not track a well-executed exit poll or PVT. In the absence of any external reason to doubt the official results, the exit poll or PVT results and the actual results can be mutually reinforcing. But the fact that an exit poll corresponds to official results does not justify its methodology. Flawed exit-poll results that match up with fraudulent official results can provide false confidence in the integrity and representativeness of election outcomes, providing undue reassurance to VCV organizers and making it impossible to detect election fraud unless mistakes in exit-poll execution are uncovered.

Other Issues

Challenge of Legislative Elections

Exit polls are particularly challenging for parliamentary or legislative elections because researchers need to design polls to capture statistically significant samples for each electoral district. For legislative elections in Azerbaijan in 2005, an exit poll that was conducted in only about half of the legislative constituencies could say nothing about the other seats, nor could it verify the winners of the elections or the overall composition of the legislature. For heavily monitored legislative elections in Macedonia in 2002, announcement of national-level exit polls said nothing about district-based races that determined the outcome. There or-

ganizational and cost challenges of exit polls (and other VCV efforts) in legislative elections are significant.

Forcing Changes in Local Law to Permit Exit Polls

The international community sometimes insists on exit polls over the objections of local authorities. In response to U.S. pressure, the president of Azerbaijan issued an election decree that required central and local executive authorities to create the necessary conditions for exit polls.[42] Because of concerns about intimidation and ballot secrecy, the Macedonian election law prohibited asking voters for whom they voted.[43] Even though this provision seemed to unambiguously prohibit exit polls, organizers in Macedonia nevertheless requested and received a ruling from the election commission that allowed them to go ahead.

Case Studies: Problems with Exit Polls in Emerging Democracies

Experience in recent years with U.S. government-supported exit polls in Macedonia, Ukraine, Azerbaijan, and Kenya suggests reasons for considerable caution about this technique for purposes of vote count verification in transitional or postconflict elections. In these cases, each of which is discussed in this section, exit polls were flawed or became the basis for controversy. In the Macedonian case, because of the problem of intimidation that creates selection bias, exit polls were not a good choice for vote count verification. The Ukraine case emphasizes how improper use of exit polls can actually confuse perceptions about the outcome of an election. In the case of Azerbaijan, conflicting polls and a host of limitations specific to exit polling

point out problematic aspects of using exit polls. The election in Kenya in 2007 provides a cautionary tale about the lack of transparency regarding exit-poll results.

A close look at some cases may be necessary to reveal the problems with exit polls as a VCV mechanism. Often, the choice of an exit survey for VCV appears benign. Exit polls are typically cheaper and faster, can be conducted without a local CSO partner, and are seemingly accurate. But a careful analysis of the actual consequences of exit surveys in emerging democracies reveals that exit polls have serious shortcomings. The details of these case studies should stand as a cautionary note to funders and implementers alike.

Flawed Exit Polls in Macedonia in 2002

On September 15, 2002, Macedonia held parliamentary elections in an uncertain political climate lingering from brief but violent ethnic clashes the year before. Only 16 hours after the polls closed, before the national election authorities or other Macedonian organizations had released even preliminary election results, an American democracy assistance organization announced the results of its own exit poll, which it called an "an important step forward in the country's democratic development."[44] Yet the political climate in the country probably made the exit poll unreliable and a separate PVT provided a stronger basis for assessing the integrity of the vote count.[45]

Violence, intimidation, and extreme nationalist rhetoric had plagued the pre-election environment in Macedonia. In the three weeks before election day, two police officers were murdered in evidently politically motivated attacks,

security forces physically blocked opposition supporters from entering the capital of Skopje, and party rallies had to be canceled for fear of violence. The interior minister publicly threatened to arrest the leader of the most popular ethnic Albanian party, and many politicians and voters expressed fears about special security forces and paramilitaries. Intimidation and concerns about threat of violence were so pervasive that, despite the country's small population (about 2 million), the international community had mobilized a huge international monitoring effort, including some 800 observers from the Organization for Security and Cooperation in Europe alone. These conditions necessarily raised questions about whether voters felt safe to express their political preferences and, thus, about the appropriateness and accuracy of an exit poll.

The situation in Macedonia made the country a difficult and uncertain place in which to conduct an exit poll, since voters in a tense political environment may not feel comfortable revealing their choices outside of a polling station for fear of retribution. Voters may feel uncomfortable speaking with pollsters and revealing their preferences to strangers in any case, and an unstable political situation only further increases this already existing problem in survey research.

Even the Macedonian election law reflected concerns about intimidation and protecting the secrecy of the ballot. It said that "Nobody is allowed to call the voter to account for his voting, or ask him to say for whom he has voted or why he has not voted."[46] Although this provision seemed to unambiguously prohibit the exit poll, organizers neverthe-

less requested and received a ruling from the election commission that allowed them to go ahead.

In an effort to encourage voters to respond to the exit survey and to mitigate the effect of intimidation, pollsters asked voters to fill out a facsimile ballot and deposit it in something resembling a ballot box. This provided no real guarantee of anonymity, however, and did not necessarily reassure anxious citizens who might have been reluctant to participate.

Beyond concerns about the effect of the political climate, there were questions about the methodology of the exit polls in Macedonia. Researchers made assertions about their exit poll's margin of error that did not appear to be supported by sound statistics. At a press conference in Skopje after the elections, researchers reported they had conducted approximately 9,400 interviews (later reported as 9,321) and that the poll's margin of error was 6 percentage points.[47] But because there is no statistical theory that would generate such a high margin of error on such a large sample size, this implied that the pollsters had made a subjective assessment of the quality of their own data.

In an analysis of exit-poll results published later, the polling firm that oversaw the project in Macedonia argued, "There are some elements of the survey that are somewhat deficient, but can be overlooked because of the polls [sic] performance and the general lack of 'reliable' census and electoral history data." The polling firm admitted that results projected by the exit poll varied from actual reported results within electoral districts by up to 9 percentage points but argued, "Considering that on average exit polls

in the United States have a variance of 4% to 6% the performance of this exit poll is exceptionally good."[48] Yet a margin of error of 9 percentage points is very large; it would not allow an assessment of the integrity of reported results if the margin of victory for one candidate or party were less than 18 percentage points. This usually would be insufficient to the purpose of checking the validity of the reported results.

At the same time, a nonpartisan Macedonian election monitoring group, Citizens Organization MOST, conducted a PVT based on random samples of actual results and reported these findings for each of the six electoral districts. The PVT data provided a stronger basis for assessing the credibility of the official count. Nevertheless, the media and international community initially ignored these valid data because an exit poll conducted and announced by an international organization had already provided the first public numbers. Greater cooperation among monitoring organizations involved in vote count verification, both national and international, could have reduced the chances that the exit poll would undercut the position of the local organization.

The sponsors of the exit poll also erred in announcing their results on a nationwide basis—results quickly reported in the local and international media. But these results were essentially meaningless, as the only outcomes that mattered were party results from each of the six parliamentary districts.

Ironically, in an otherwise positive postelection statement, the principal negative finding of the exit poll sponsor

about the election was interference with the organization's own researchers. "There were a number of incidents of harassment of interviewers" for the exit poll, the observers reported. "In several cases partisans physically attacked exit poll workers or otherwise disrupted proceedings."[49] Citizens Organization MOST, the domestic election-monitoring organization, reported that many of the complaints it received were actually about the exit poll.[50]

Because there was no significant controversy about the election results in Macedonia, the merits of the exit poll as a means of verifying the reported results were not called into question. At the very least, though, the use of an exit poll by one international organization while another was mobilizing a virtually unprecedented monitoring effort to counter a climate of intimidation suggests at least the existence of sharply different perspectives within the international community about what monitoring approaches were appropriate.

In sum, although it was impossible to determine how intimidation and nonresponse bias affected poll results, given the political conditions in Macedonia at the time, it seemed clear that the exit poll did not serve as an appropriate VCV method. Together with questions about the methodology, this meant that the results of the exit polls were not particularly meaningful and certainly should not have served as the basis for questioning the official results.

Problems with Exit Polls in Azerbaijan

Allegations of fraud and manipulation have plagued elections in Azerbaijan. As a report from Freedom House puts it, "Elections in Azerbaijan have been characterized by

significant irregularities and government interference in nearly all elections since independence." Consistent with this, despite "some improvements in election legislation and campaigning," international observers and analysts ultimately judged that the 2005 elections did not meet international standards.[51] Multiple exit polls further gave conflicting information about the integrity of the vote count, and the motivations, potential biases, and methods of poll sponsors and implementers caused controversy.

Three distinct organizations oversaw exit polls for the November 2005 parliamentary elections in Azerbaijan. First, USAID contracted with PA Consulting Group, a London-based firm with offices in the U.S., to conduct exit polls in just over half of the country's parliamentary districts. PA Consulting in turn worked with a local partner, SORĞU, and a Georgian public opinion firm, Georgian Opinion Research Business International (GORBI) to carry out the polls.[52] Mitofsky International, the firm of the late Warren Mitofsky, the "grandfather of exit polls," conducted a second set of exit polls.[53] An Estonian organization, Saar Poll, carried out a third.[54] But one election observation group concluded that "All three polls were so flawed in their conduct as to render their results statistically worthless."[55]

Partiality of Sponsors and Implementers

There were troubling questions about the sponsors of the other two exit polls in Azerbaijan. Opposition leaders suspected that representatives of the administration of Ilham Aliyev recruited both Mitofsky and Saar Poll to supply exit polls that would counter those of the U.S.-funded poll.

Saar identified a British financial institution, Santo Communications, as the sponsor of its survey.[56] The real sponsor and budget of the Mitofsky poll were never really clear. At a press conference in Baku to announce the results of his exit polls, Mitofsky denied that the Azeri government had funded or commissioned the poll but declined to answer questions about the source and amount of funding. He later said that the Russian Institute of Comparative Sociological Analysis hired him, on behalf of Renaissance Associates, a "Swiss company run by a Bulgarian." Journalists reported they were unable to find any information about this company.[57] Mitofsky also reported that the sponsor of the Saar poll was the Center for Regional Development in Azerbaijan and added, "We believe the same people who sponsored our exit poll also were involved with the Saar Poll."[58]

Mitofsky received a barrage of criticism for conducting the poll in Azerbaijan. The *New Republic,* asked for example, "Is Mitofsky about to help Aliyev steal an election?"[59] And a letter to the American Association of Public Opinion Researchers (AAPOR) sharply criticized his ethics for doing the poll.[60]

"The sponsors of our exit poll," Mitofsky rationalized later, ". . . seemed genuinely interested in democracy and had worked with other nongovernmental organizations (NGOs) to further [their] aim in Azerbaijan." But Mitofsky himself later admitted mistakes:

> Yes, we had doubts about the source of the money. We had some thoughts that the money was coming from a government. Whose government it was coming from was uncertain, though the one in

> Baku was an obvious possibility. In our naiveté we thought it would make no difference, as long as we could do our work unimpeded, and until election day there was no interference. Once the polls had closed and it was time to release the results, the story would be different.[61]

There were also questions about the impartiality of local firms hired to conduct the actual surveys. For example, although the opposition did not criticize the U.S. government or PA Consulting Group for the USAID-sponsored exit poll, some questioned the impartiality of PA's local partner, the research firm SORĞU. The oldest polling organization in Azerbaijan, SORĞU had experience working with the World Bank, the United Nations Development Fund, and other international organizations in Azerbaijan. But there had been controversy about its survey in May 2005, which found a 77 percent approval rating for President Aliyev, which some analysts found implausible. SORĞU claimed that the major international polling firm Gallup International had ordered the poll, but Gallup denied any association.[62]

Likewise, critics questioned Mitofsky's selection of local partners to conduct his poll. Once of his local partners, the Association for Civil Society Development in Azerbaijan (ACSD), appeared to have backing from the government, and its previous polls, some found, "often produced results that defied common sense."[63] In fact, having their own doubts, Mitofsky's group hired another local firm, SIAR Social and Marketing Research Center, to monitor the interviewing, and SIAR confirmed serious shortcomings in the conduct of the poll.[64]

USAID-Sponsored Exit Poll

To explain the U.S. government's decision to commission its exit polls in Azerbaijan, the U.S. embassy argued that the exit polls would serve to verify the election results:

> The results of the exit poll will hopefully confirm that the official vote counting is accurate. It will also help stop fraud and falsification, since a final vote count that falls outside the expected margin of error of the exit poll raises suspicion that the official vote count is inaccurate.[65]

But the project design did not deal adequately with the fact that these were parliamentary elections. Project sponsors erred by deciding to conduct exit polls in only 65 randomly chosen parliamentary constituencies, slightly more than half of Azerbaijan's total 125 election districts. But the results of polling in only about half of the country's electoral districts could not be used to verify the overall allocation of seats from the elections.

Moreover, the list of the 65 districts targeted by the USG-sponsored exit polls was released in advance and provided to the government.[66] This created at least the perception that the districts not included in the poll might be more vulnerable to manipulation. The opposition criticized the failure to choose districts where opposition leaders were running.

Publishing Results

As discussed above, there are a number of reasons why international observers or others in the international community generally should not make their results public be-

fore election authorities or domestic organizations do so. Public preemption may not be necessary to deter or expose vote-count fraud. Moreover, for representatives of foreign governments or firms to effectively announce the results of an election raises serious sovereignty issues.

Notwithstanding such concerns, the Request for Proposals for the exit poll project in Azerbaijan explicitly gave as one of its purposes: "To publish the results of the exit poll *before the Azerbaijani government announces the official results* of the election with first preliminary results to be announced at the press conference immediately following closings of the polling stations."[67] For a diplomat or other foreign organization representative to announce the results of a domestic election, however, seems inappropriate—and hardly necessary to the purpose of providing a check on manipulation of the results. Nor does it seem to make sense to have a private polling firm handle the public announcement or press relations. The problem was especially acute in Azerbaijan because the exit polls did not address all of the districts in parliamentary elections and were far from definitive.

When exit-poll results are in fact released, organizers should include not only the actual survey results but also information about their methodology and calculation of the margin of error. Rather than releasing its results or even providing a table naming the apparent winners in each district, according to one person familiar with the project, the Mitofsky group initially only made public a summary table of how many districts the exit polls found had been won by each party. Only later did they publish the estimated percentages for the top three candidates in all but two districts.

Explained Mitofsky later, "We had to struggle to make our report public." Although his client had pledged to allow the pollsters to make the results public shortly after the balloting was finished, "in the end they did not live up to" that pledge."[68] He admitted his group's mistake in working "for organizations with no known record for open availability of the survey findings."[69]

Findings of the Exit Polls

The USAID-PA Consulting exit poll seemed to corroborate the announced results in most of the districts in which the poll was conducted, but there were some districts where there were serious discrepancies. The election commission gave the opposition just six of the 125 seats. The PA Consulting exit poll suggested that opposition candidates actually won a plurality of the votes in 15 to 20 districts. The speaker of the parliament came in a distant third place in the exit poll, for example, but the official results put him first and he was re-elected. The day after the elections, President Aliyev cited the USAID-PA Consulting exit polls as supporting the official results.[70]

Mitofsky's poll also raised questions about the official results. According to Mitofsky, the USAID-PA Consulting poll missed five key districts where opposition leaders were expected to be strong. Mitofsky's exit poll had opposition candidates winning two of those districts, which differed from the original election commission count, and in another district his poll showed a close three-way race, while the official count showed a clear winner. The Mitofsky poll in another district agreed with the official vote count showing that the opposition candidate came in a strong second.[71]

Mitofsky joined others in completely dismissing the third exit poll. Saar reported votes in 10 districts for candidates who were not on the ballot and reported results for one district that, according to the election commission, did not have any voting. The Saar poll agreed with the election commission in all but one of the districts where Mitofsky projected a different winner, even including one district where the election commission itself overturned its initial declaration of a winner.[72]

Azerbaijan offers an excellent example of why exit polls are generally not a good choice for vote count verification in developing countries. Ultimately, these different exit polls conflicted with one another, included too many errors, and increased confusion.

Misreading the Exit Polls in Ukraine in 2004

The case of the 2004 presidential election in Ukraine and the subsequent Orange Revolution in the country demonstrates the general problems associated with reliance on exit polls for VCV.[73] On November 21, 2004, Ukraine held a runoff presidential election in a tense political environment in which incumbent prime minister Viktor Yanukovych faced opposition leader Viktor Yushchenko. The results of an exit poll differed substantially from the official results and became the basis for the rejection of the results by the opposition and much of the international community. But those exit polls suffered a number of methodological problems and, however flawed those high-profile elections were, should not have been used as a basis for questioning the integrity of the vote count.

In Ukraine, it is conventional wisdom that then-opposition leader Victor Yushchenko won the initial runoff presidential election on November 21, 2004. A *Washington Post* editorial, for example, declared, "Despite the government's brazenly unfair campaign, a majority of Ukrainians voted for . . . Yushchenko [and] authorities then tried to steal the election . . ." [74] But while credible international observers condemned the election process, their statements at the time did not go so far as to assert a winner. To this day, we really do not know which candidate actually received more votes in that highly contested, extremely high-profile election that marked a watershed in the Orange Revolution.

More than 4,000 accredited international observers were present for the November 2004 run-offelection in Ukraine, perhaps the greatest number of traditional international election observers anywhere since South Africa's landmark 1994 elections. The most professional election monitoring groups condemned the election process. Citing abuse of state resources, media bias, inflammatory campaign language, and intimidation, for example, the election observation mission of the Organization on Security and Cooperation in Europe (OSCE) concluded the election "did not meet . . . international standards for democratic elections."[75] NDI's delegation based its judgment that "fundamental flaws in Ukraine's presidential election process subverted its legitimacy" on what it described as the "*cumulative effects* of systematic intimidation, overt manipulation and blatant fraud during the campaign and particularly on election day."[76] The European Network of Election-monitoring organizations, comprising nearly 1,000 observ-

ers from nongovernmental organizations in 16 countries in the region, concluded, "Problems in the pre-election period *combined with* those on November 21 were *potentially serious enough* to affect the electoral outcome."[77]

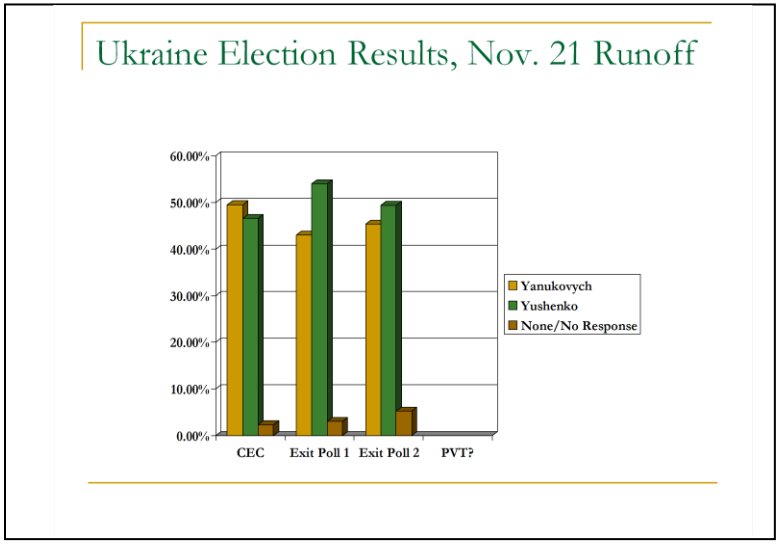
In short, unlike the *Washington Post* and others in the media, the observer groups did not declare that they knew the winner or go so far as to call for the officially announced outcome to be reversed. Although these reports confirmed that the broader election process in Ukraine was seriously flawed, they offered little or no evidence that a majority actually voted for the opposition candidate or that the tabulation was manipulated. This is an important distinction—and one that points to limitations, at least for those elections, in techniques of vote count verification.

The impression that the opposition had actually gained more votes came from an exit poll. The Ukrainian election commission reported that the government's candidate, Viktor Yanukovych, defeated Yushchenko by a margin of 49.5 percent (15 million votes) to 46.6 percent (14.2 million votes). But an exit poll, funded by international donors and implemented by a network of local organizations, found a 54-to-43-percent majority for the opposition candidate.

A tremendous public outcry ensued, as the Ukrainian public and the international community, based in considerable measure on the exit poll, believed that supporters of the government's favored candidate had committed massive fraud. This discrepancy produced the controversy and the widespread protests that culminated in the Orange Revolution. Large-scale protests involving hundreds of thou-

sands of citizens erupted in Kyiv and other cities around the country in support of the Yushchenko-led opposition.

The exit poll surveyed 20,000 voters through ostensibly anonymous questionnaires. If the exit poll was correct, then the election commission had overstated the votes for Yanukovych by approximately 2 million votes, a finding that would indicate substantial fraud in the aggregation of votes. Yet, it would be extremely difficult to carry out such a truly massive amount of election-day fraud by cheating at individual polling places. Rather, to carry out the extent of fraud implied by the exit polls would seem to require manipulation of tabulation, the process of aggregating vote counts.



To detect exactly that kind of manipulation, the nonpartisan Committee of Voters of Ukraine (CVU) conducted a PVT, as it had in the past. The CVU observed the count and collected the results at a random sample of actual polling

station results from 1,500 polling places. But it declined to release the PVT results after the election because, it said, the difference between the candidates was within the statistical margin of error. In other words, the PVT showed a close race and did not support the idea that massive fraud had occurred on the level indicated by the exit poll.

After Ukraine's supreme court ordered a new election, the CVU did release a detailed report on the fraud its observers had witnessed around the country. Although these accounts leave little doubt that there were indeed widespread, serious problems, they seem inadequate to explain the difference between the results of the exit polls and the official count.

Significantly, in response to the Orange Revolution, Russian leaders called into question what had appeared to be an international consensus on the value of international election monitoring. At the annual ministerial meeting of the OSCE on December 7, for example, Russian Foreign Minister Sergei Lavrov, denounced what he called the "ever more deleterious practice of double standards" in monitoring elections. "In the absence of any objective criteria," he said, "monitoring of election processes becomes an instrument of political manipulation."[78]

There was surprisingly little concern about the flaws or limitations of these exit polls, which left American and Western election monitoring groups and governments vulnerable to the charges of bias from Russian leaders, such as Foreign Minister Lavrov. Although Ukrainian and international outrage about those elections paved the way for a fairer election to take place later, on December 26 of the

same year, the failure of Western governments and the observers they funded to acknowledge the limitations of their VCV tools exacerbated tension between Russia and the West and probably complicated efforts to hold other countries to international norms on election monitoring and democracy promotion.

To maintain the integrity and credibility of independent election monitoring, it is essential to distinguish serious election problems for which we have real evidence from mere allegations—in the case of Ukraine about the vote count—based on a faulty foundation. Governments and observers need to take care to avoid the impression they are merely asserting that the candidates or parties they prefer have won the most votes.

International and Ukrainian observers provided more than enough evidence of serious flaws to call the Ukrainian electoral process into question and make a new election appropriate. But in spite of the exit polls' claims, the available evidence does not support the definitive conclusion that Yushchenko won more votes in the first runoff election in November 2004.[79]

Controversy about Withholding Exit-Poll Results in Kenya In 2007

The failure to release exit-poll results contributed to the controversy surrounding the 2007 elections in Kenya. Domestic and international stakeholders became aware that an exit poll was conducted, but, for reasons that have remained in dispute, exit poll sponsors and implementers decided not to release the results. This fed the existing tension even as violence erupted after election day. Many in Kenya

and in the international community believed that the delayed release of the exit poll in the country hindered the ability of election monitoring groups to check almost certain electoral fraud. Perhaps more important, many also believed that the announcement of exit-poll results might have reduced disastrous postelection violence. "The failure to disclose it was raised at a Senate hearing in Washington," reported the *New York Times*, "and has been denounced by human rights advocates, who said it might have saved lives by nudging Mr. Kibaki to accept a negotiated settlement more quickly."[80]

For the election on December 27, 2007, incumbent president Mwai Kibaki was expected to face a strong challenge from opposition Orange Democratic Movement (ODM) leader Raila Odinga. Leading up to the election, international and domestic observers expressed concern about the politicization of the Electoral Commission of Kenya and about unequal media coverage for opposition parties.

Although the balloting itself was relatively calm and peaceful on election day, there was confusion and delay over the announcement of electoral returns. In early results reported the day after the balloting, the opposition candidate Odinga maintained a consistent lead. Results from the election commission the following day, December 29, showed that Kibaki had narrowed the gap. Continued and inexplicable delays in the reporting of complete and certified results began to degrade the credibility of the election commission. Isolated protests began to erupt in Nairobi and elsewhere on the morning of the 29. As Odinga's lead diminished, the ODM continued to assert irregularities. After

three tense days of ballot counting, despite reports that Odinga was ahead in many districts and with the ODM significantly ahead in parliamentary races, the election commission announced Kibaki the winner. Despite contentions that Odinga had won, Kibaki was rapidly sworn in on December 30.[81]

Soon after the election results were announced, several election commission members pointed to serious problems in vote counts and distanced themselves from the declaration of Kibaki as the winner. The chairman of the commission admitted intense political pressure from powerful political leaders from the ruling party.[82]

Accusations of electoral fraud and controversy over the announced result touched off several weeks of widespread, ethnically tinged postelection violence. At least 1,100 people were killed, and thousands of Kenyans fled their homes. The violence ended only when UN-sponsored talks in February 2008 produced a power-sharing agreement that reestablished the position of prime minister in order to bring Mr. Odinga into the government. A national unity government was formed in March 2009.

IRI had commissioned researchers from the University of California, San Diego to oversee the exit polls, including the question design, the surveying of voters, and the collection and analysis of data. A local Kenyan firm, Strategic Public Relations and Research, which IRI had worked with since 2000, conducted the interviews on election day.[83] Researchers surveyed 5,495 Kenyans as they left voting stations in 67 of 71 districts.

The exit poll contradicted the results from the election commission. The exit poll showed that the challenger, Odinga, had won 46.1 percent of the vote, compared to 40.2 percent for the incumbent, Kibaki, and 10.2 percent for the third candidate, Kalonzo Musyoka. Because the poll had a margin of error of 1.3 percentage points, its finding of a 6 point victory for Odinga seemed statistically reliable.

In the days after the election, in the midst of controversy over the reported results, however, IRI declined to release the results of its exit poll. As word of the poll's existence leaked out, controversy emerged. Some critics charged that the U.S. government did not want results that contradicted the official count to be made public.

In response to questions about why the poll results had not been released, IRI later asserted that the poll suffered from improperly coded data and other methodological errors. In a statement in February 2008, the institute declared the poll invalid due to "concern over the possibility of compromised questionnaires due to the unrest following the elections," issues of duplicate questionnaires, and other methodological issues.[84] A spokeswoman later told reporters that the decision to withhold the results was based on "a lack of confidence in the data, nothing else."[85]

But the UCSD researchers disputed these assertions and defended the quality of the polls.[86] Two independent reviews of the data in the following months found that, while a few coding errors were present, "the integrity of the data is sound and the poll is valid" and confirmed the poll's finding of a 6 percentage point margin in favor of Odinga.[87] Political scientist and Kenya election expert Joel Barkan

likewise said the poll's design and execution ensured that its findings were trustworthy.[88] Similarly, a later examination by the *New York Times* found that:

> the official explanation for withholding the poll—that it was technically flawed—had been disputed by at least four people involved in [IRI's] Kenya operations. The examination, including interviews and a review of e-mail messages and internal memorandums, raises questions about the intentions and priorities of American observers as Kenyans desperately sought credible information about the vote.[89]

Unfortunately, there was no PVT for these elections. The international community evidently did not anticipate the controversy about the vote count or the chances of violence emerging from that controversy. With support from the UNDP, an umbrella group of civil society, nongovernmental, and church organizations, the Kenya Election Domestic Observer Forum (KEDOF), coordinated some 17,000 observers at roughly 27,000 polling stations, but observers did not monitor the vote counting. A PVT in Kenya would have provided extremely valuable information about how people really voted, which might have corroborated either the exit poll or the official results.

The Kenya poll raises difficult questions about the complexities that accompany decisions about whether to make public the results of exit polls under contentious and potentially violent circumstances. The controversy surrounding the exit polls in Kenya points to the need for exit-poll funders and implementers to be aware of the im-

portance of transparency and to carefully consider whether an exit poll is an appropriate tool in particular circumstances.

Conclusion: Lessons Learned About Exit Polls

Exit polls can provide useful information about voter motivations and behavior in a given society and can begin to establish trends and identify correlations between votes and other variables such as gender, ethnicity, religion, or socioeconomic status. In general, however, exit polling and other forms of survey research are not the best way to detect or deter election-related fraud or forecast election results in postconflict or transitional countries. Exit polls have been unreliable in the US even though they have been used for years. Although benefiting from sample-based rigor, exit polling raises a number of methodological concerns, including lack of historical election data, difficulty calculating margins of error, and selection bias. Even more important, exit polls are inappropriate whenever there is a climate of intimidation. Thus, exit polling and other forms of survey research are not the best way to detect or deter election-related fraud or forecast election results in postconflict or transitional countries.

CHAPTER 4: POST-ELECTION STATISTICAL ANALYSIS AND ELECTION FORENSICS

In recent years, there have been notable efforts to develop new statistical approaches to identifying electoral fraud. Such approaches analyze vote count data released by election management bodies or governments to identify possible anomalies in the results. Identification of anomalies does not necessarily suggest manipulation, though, and it certainly does not prove it. Rather, this kind of process can be used after the fact to identify particular cases, locations, or irregularities that merit further investigation. Some researchers, such as Walter Mebane of the University of Michigan and Peter Ordeshook of the California Institute of Technology, have likened this approach to forensics.

In principle, postelection statistical methods for vote count verification—as distinct from other sample-based methods such as PVTs and exit polls discussed in previous chapters—should offer important benefits for election monitors. Under the right conditions, using publicly available data, such statistical methods are arguably rigorous, can complement and reinforce qualitative election monitoring efforts, and are relatively inexpensive and straightforward to administer. In practice, however, these analyses are generally conducted well after an election. Importantly, this implies that statistical analyses generally have little to offer until a long time after the election results have been accepted and made official—too late, in other words, to meaningfully affect the political response to a possibly flawed count. As we discuss in greater detail below, statistical methods also require specialized knowledge and skills that

few election-monitoring organizations, domestic or international, are likely to possess.

The statistical vote count verification strategies developed to date range from methods that rely on detailed context-specific data and supplemental information, such as data from past elections or particular knowledge of the political and electoral context, to more generalized methodologies requiring little or no knowledge of the political context. They generally focus on apparent anomalies in turnout, vote flows from one party or candidate to another, or similar indicators. In this chapter we explore the methodology and application of three statistical approaches within this spectrum. The first strategy compares polling-station-level data from a recent previous election with results released in real time to identify anomalies in the flow of votes from one party or candidate to another. The second strategy consists of a retrospective application of statistical techniques to official election data aimed at identifying potentially illogical results based on independent knowledge of political or other circumstances. The third strategy relies on a mathematical principle that describes the expected distribution of digits in large groups of numbers and thus can identify possible instances of fraud or irregularity when vote counts deviate from the naturally expected distribution. In addition, we consider a postelection, sample-based audit used by electoral authorities in Afghanistan in 2009 that reviewed ballot boxes for which preliminary results meet certain prima facie criteria for fraud. Although each of these strategies raises its own questions, the idea of using statistical analysis for vote count verification offers some promise for election monitors.

Statistical Analysis Comparing Previous and Current Elections

The earliest and most basic examples of statistically based vote count verification strategies consist of a comparison between current and previous vote count data to identify unexpected or anomalous changes at the polling-station or district level. In cases where comprehensive and reliable baseline data from the most recent elections are available, an analysis comparing previous and current results provides a relatively straightforward way to identify irregularities and patterns that could suggest the possibility of fraud at the polling-station level. As part of its mission to Pakistan's October 1990 parliamentary elections, for example, NDI undertook such a statistical analysis. Using voter registration, turnout, and vote total data provided by the Pakistan Central Election Commission, the study compared voting patterns observed in previous elections with election commission results to look for systemic anomalies in the voting and counting processes. Using official data from the 1988 election as a baseline, the analysis compared the three pairs of data sets on a constituency-by-constituency basis to ascertain statistically unexpected vote distributions at the constituency level among the Islami Jamhoori Ittehad (IJI), the People's Democratic Alliance coalition led by Benazir Bhutto's Pakistan Peoples Party (PPP), and third parties.[90]

Although NDI ultimately concluded that the overall election results likely reflected the will of the Pakistani people, the data did suggest that fraud was at least a strong possibility in some places and some areas of the process. The analysis found statistical patterns that implied the pos-

sibility of voting fraud. Specifically, it found that about 15 percent of legislative constituencies showed some evidence of either unexpectedly high vote erosion as compared to the earlier elections for the opposition party or high vote erosion in combination with a suspiciously high proportion of all available votes (close to 100 percent) attributed for the winning candidate. One pattern that emerged in several areas was vote erosion or vote growth that could not be accounted for by a subsequent increase or decrease in a rival party or an overwhelming majority of an electorate voting for one candidate. In particular, there were several instances where the IJI gained votes without a corresponding loss of votes for the third party candidates, and several cases where the vote erosion for a third party between 1988 and 1990 was so significant as to warrant concern on its own. About 15 percent of the 216 National Assembly Constituencies exhibited either alarming vote erosion for the PDA, nearly unanimous support for the winning candidate, or both. In every constituency that the data suggested was suspect the PDA lost at least 15 percent of the votes they had won in 1988, and in 90 percent of these constituencies, the IJI had almost all of the votes. In these questionable constituencies, the IJI and the third party candidates aligned with the IJI won close to 85 percent of the available seats.

These data illustrate how a statistical comparison between two disparate elections can reveal patterns that are highly suggestive of fraud but are not sufficient to prove fraud as the cause of those patterns. NDI concluded that the suspect patterns were not in and of themselves significant enough to warrant a challenge to the legitimacy of the election, but that, in light of these patterns, further investigation

would be prudent. NDI did not modify the earlier conclusions of its election observation mission, namely that the overall result seemed to reflect the will of the Pakistani people.

As NDI acknowledged in its final report, strategies for statistical analysis are subject to a number of methodological weaknesses. Based on the presumption that useful information could be drawn from a comparison between the 1988 election data and those from 1990, the NDI study's statistical methodology is limited by an inability to detect election manipulation carried over from one election to the next. To the extent there was fraud in the previous election, any analysis gleaned from comparison with new data could be irrelevant and potentially misleading. Conversely, if both the baseline and real-time datasets are free of fraud, then what appear statistically to be "problem constituencies" may in fact be the products of successful political campaigning, demographic shifts, or other underlying factors that could lead to real and legitimate changes in voter preferences.

The NDI report acknowledged both of these limitations. Because their statistical analysis detected indicators of possible fraud in a relatively small number of constituencies, the researchers concluded that IJI's electoral gains could be legitimate, perhaps the result of the party's ability to forge electoral coalitions with minor parties and to draw support away from independent candidates.[91] As the report emphasizes, the inherent weaknesses of the statistical analysis methodology precluded the possibility of a definitive conclusion about the type, locations, and perpetrators of the fraud.

Statistical Analyses Identifying Anomalies based on Local Political Knowledge

In a similar vein as NDI's early efforts in Pakistan, other analysts have attempted to use statistical tests to circumvent the obstacles of subjectivity, limited coverage, and presumed agendas that have plagued numerous election observation efforts. Peter Ordeshook and his colleagues have used statistical analysis of postelection data to identify potential instances of vote manipulation. Their approach uses vote count data released by election management bodies or governments to identify possible anomalies in the results. "Our central hypothesis," write Mikhail Myagkov, Peter Ordeshook, and Dimitri Shakin, "is that the most egregious forms of fraud—stolen votes, stuffed ballot boxes, and official numbers that bear little relation to actual ballots cast—leave detectible fingerprints in official election returns."[92]

Likening this approach to forensics, these researchers search for three indicators of electoral manipulation, the "fingerprints of fraud": turnout aberrations, candidate vote shares, and the flow of votes. The first indicator, which has to do with the distribution of turnout across precincts or districts, is based on the assumption that there will be a normal bell-shaped curve to the distribution of voter turnout. If votes are added through fraud, a different distribution would result. The second indicator, candidate share, involves the relationship between turnout and a candidate's share of the eligible electorate. That relationship should be "logical," which means that "if turnout increases, then ceteris paribus a candidate . . . should share in this increase or

at least not suffer from it."[93] The third indicator of vote flow is based on the assumption that certain regions and populations will vote for particular candidates or parties over time. The assumption here is not that voting patterns in certain regions, precincts, political parties, and ethnicities is completely rigid but rather that massive shifts in voting patterns within demographics in short periods of time might be indicative of fraud. If results show an uncharacteristic winner or vote count for a region, that area may need to be investigated more.[94]

Statistical Analysis of Election Results in Ukraine 2004

As discussed in Chapter 3, there was great uncertainty surrounding the results of Ukraine's 2004 presidential runoff election between Russian-backed candidate Vladimir Yanukovich and pro-Western opposition candidate Viktor Yushchenko. To study these results, Myagkov, Ordeshook, and Shakin designed a series of statistical tests using postelection data to identify indicators of potential manipulation, looking both for instances of fraud and the degree and extent of vote manipulation in official election returns. Examining the vote tabulations for the second-round election, they detected an irregular vote turnout, which corresponded with widespread accusations of fraud and vote manipulation. In the third round, widely accepted as a more democratic election, the distribution of turnout was a normal bell curve.[95]

Turnout Aberrations

In their Ukraine study, the researchers identified inflated voter turnout numbers by graphing the distribution of voter turnout, which, they assert, in a free and honest election should be distributed along a normal bell-shaped curve, assuming homogeneous districts where variations in turnout result from random factors, uncorrelated with the candidate's support.[96] That is, if fraudulent activity artificially inflates the voter turnout in certain districts, then there will no longer be a bell-shaped curve of voter turnout by precinct. If fraud adds many artificial votes to a precinct, causing that precinct to report above 90 percent turnout, for example, this will make the occurrence of 90 percent turnout precincts higher than it would be on a normal curve. The addition of extra votes to the results for a specific polling place or region would skew the normal distribution and trigger the need to examine that area more closely.

Comparing data from Ukrainian electoral districts from the first round in 2004, Myagkov, Ordeshook, and Shakin found normal turnout distributions in both the subset of districts that voted for Russian-backed candidate Yanukovich and those where opposition candidate Yushchenko was the winner. Data from the second round of voting, however, indicated that turnout was skewed artificially higher in the districts that favored Yanukovich, while turnout followed a normal distribution in the districts won by opposition candidate Yushchenko. The researchers interpreted this shift to mean that vote manipulation did not take place until after it had become apparent that Yanukovich might lose in the second round of voting and that the shift took place primarily in districts that had favored him in the first round.

Vote Share

The second indicator of the Ukraine study, candidate vote share, is based on the assumption of a linear relationship between a candidate's share in the votes and voter turnout levels. In other words, if a candidate's initial vote share is 60 percent, then for any amount by which total voter turnout increases in subsequent rounds of voting, that candidate's total vote share should increase by 60 percent of that amount. In this view, any increase in vote share greater than a candidate's original proportion of votes might be indicative of falsified ballots or intimidation of opposition voters. By this measure, the researchers found that both Yanukovich and Yushchenko benefitted from exceptionally high gains from additional voter turnout in the second round, in districts where each already had a plurality of the vote.

But the assumption of a linear relationship between a candidate's vote share and voter turnout is not particularly defensible. The researchers themselves acknowledge that such disproportionate vote gains might also be due to some distinguishing characteristic of the new group of voters or to a mobilization drive to increase voter turnout that disproportionately benefitted certain candidate(s) and not others. At best, as this caveat suggests, the candidate vote share test is not particularly useful without some specific supporting knowledge of the political context in each affected district.

Vote Flow

The third indicator, vote flow, is a measure of the transfer of votes between candidates or parties from one election

to the next. This indicator is based on the assumption that certain regions and populations will regularly and predictably vote for particular candidates or parties over time. It is similar to the thinking that underlay the NDI postelection statistical analysis of the 1990 elections in Pakistan. If statistical results show an uncharacteristic winner or vote count for a given region, that area may need to be investigated more closely. If a candidate appears to have drawn an excessively high share of any given group of voters—for example, if a large jump is observed in turnout in a given district, as previous nonvoters suddenly turn out to vote for a particular candidate—then fraud is one possible explanation. Incremental votes should come from "logical sources," and no candidate should "suddenly and inexplicably receiv[e] an inordinate share of support from those who previously had been nonvoters."[97]

In the Ukraine 2004 case, the researchers aggregated vote flows between candidates for the first and second rounds of the election at the district level. To control for the varying characteristics of the districts—rural versus urban, type of administrative division, and so forth—the researchers organized their data into clusters of districts sharing similar attributes. They found that vote flows from candidates eliminated in the first round behaved predictably, with voters generally transferring their support in the second round to the candidate endorsed by their previous choice. Both Yanukovich and Yushchenko, however, are shown to have garnered vote flows that the authors claim was impossible except as a consequence of "ballot stuffing, multiple voting, and other forms of fraud."[98] Thus, they argued, supporters of both Yushchenko and Yanukovich ap-

peared guilty of vote count manipulation, although they also found Yanukovich's gains from fraud to be far greater and more extensive.[99]

Caveats about Election Forensics

The researchers offer the important caveat that their approach requires an understanding of local politics and political culture:

> Although we hope our discussion offers a convincing case for the idea of detecting and measuring fraud using official election returns, our analysis also illustrates that there is no simple mechanical route to that end. Our methods must also be combined with substantive understanding of the current politics and historical political culture of a given society.[100]

Ordeshook has stressed that these methods cannot identify vote manipulation with any certainty. Rather, the process can be used after the fact to identify particular cases and instances that merit further investigation or consideration of other evidence. Researchers need an historical understanding of the country to make sense of the aberrations, as the identification of statistical anomalies is not necessarily definitive proof of fraud but rather a suggestion of the need for additional qualitative examination.[101] As Myagkov, Ordeshook, and Shakin put it in their recent book, the "forensic tools" they propose are not a "black box into which one plugs the numbers and out of which comes a necessarily unambiguous evaluation of an election." They do not claim "any magic formula, mathematical equation, index, or probabilistic computation that tells us whether an elec-

tion is or is not contaminated by fraud." Rather, they say, "Our indicators, like any statistical method, cannot be used without full attention to the substantive context of their application and the nature of the data to which they are applied. They are not, in short, a substitute for substantive experience."[102]

The U.S. Presidential Elections in 2000

A study by Jonathan Wand et al. that analyzed the impact of ballot design on the outcome of the 2000 U.S. presidential election in Palm Beach County, Florida, provides another example of retrospective statistical analysis of election results.[103] As with the Ukraine study, the Palm Beach County study was based on a purported detailed understanding of the political environment and electoral context. In Palm Beach County, which played an important role in determining the outcome of the election, simple statistical indicators suggested the presence of anomalies.

Developing statistical methods to control for variations in population size and political idiosyncrasies across counties in previous elections, the researchers generated predictions about what the vote count of third-party candidate Pat Buchanan in Palm Beach County and other counties across the country would have been on election day 2000 in the absence of any procedural or structural anomalies. Comparison of these statistical predictions to Buchanan's actual vote totals demonstrated that Buchanan received an unusually high number of votes in Palm Beach County. The researchers found that the ratio of election-day votes to absentee votes for Buchanan was nearly four times higher in Palm Beach than it was in other Florida counties. They

concluded that the confusing design of the butterfly ballot was likely responsible for the problems witnessed in Palm Beach County during the 2000 elections.

Conflicting Statistical Analyses of Referendum Results in Venezuela

Observers made heavy use of postelection statistical analysis for a controversial 2004 referendum in Venezuela on whether to recall President Hugo Chavez. Chavez survived the referendum with a reported 59.9 percent of the electorate voting against recall, but the opposition harshly criticized the process and cited an exit poll predicting a Chavez loss to call into question the official results. Election authorities conducted a "hot audit" that randomly checked 1 percent of the electronic voting machines, but both the opposition and international observers quickly rejected this audit for having a limited and biased sample. The Organization of American States (OAS) and the Carter Center conducted their own audit that also found no significant fraud, but the opposition rejected those results as well because the Venezuelan electoral council had not met its demands that the ballot boxes subject to audit be brought to a central, neutral location and that there be verification that the ballot boxes had not been tampered with.

Subsequently, Ricardo Hausmann of Harvard University and Roberto Rigobon of the Massachusetts Institute of Technology questioned the validity of the Carter Center audit. They conducted a statistical analysis examining the correlation between exit-poll results and the number of signatures collected for the recall petition, which they said suggested that fraud had indeed occurred. The researchers

also argued that the Carter Center failed to use a random, representative sample.[104]

Subsequent analysis by the Carter Center, however, disputed these conclusions. The Center re-examined the sample criteria in the original audit and determined that the sample was randomly selected and statistically representative. The Center also conducted its own regression between the number of registered voters who signed the 2003 petition and the number of YES voters in the 2004 referendum and concluded that the regression analysis did not support the conclusion of fraud.[105] An independent study conducted by researchers at the Center for Economic and Policy Research concurred with the Carter Center's findings, based on strong evidence that the audit conducted by the Carter Center immediately after the referendum was valid, and suggested that the results of the referendum itself were also valid.[106]

The strong disagreement among experts conducting competing statistical studies in Venezuela suggests that the studies are themselves prone to bias and may rely on questionable statistical assumptions. Although these types of statistical analysis have important real-world application, they are be far from definitive.

Election Forensics – The Second-Digit Benford's Law Test

In recent years, academics have been attempting to develop new statistical tools for verifying election results that rely less on historical data and knowledge of the political context surrounding an election and are thus more objec-

tive. One promising technique is based on a mathematical principle known as Benford's Law, which describes the expected distribution of digits in large groups of numbers. Benford's Law states that the digits in certain large groups of numbers, such as a list of river lengths or town populations, will follow a specific, non-uniform distribution. In other words, the first digit will be unevenly distributed between the digits "1" and "9." In such a list the first digit will be "1" about 30 percent of the time, rather than 10 percent, as might be expected. Likewise, the digits "2," "3," "4," etc. would appear at different frequencies, varying from less than 5 percent to more than 17 percent. The second digits in such a list would follow a separate distribution, although they would also not be distributed uniformly.[107] Accountants have used the principles of Benford's Law fairly routinely to conduct audits.[108]

Some political scientists and election analysts, most prominently Walter Mebane of the University of Michigan, have proposed that Benford's Law might also apply to vote count data, using the second digits from vote counts at the precinct or polling center level. Mebane explains that the first digits of vote counts have no particular pattern but asserts that the second digits do follow the distribution required by Benford's Law."[109] Thus, using what he calls the Second-Digit Benford's Law (2BL) test, Mebane has shown that we may be able to identify when vote counts deviate from the naturally expected distribution, suggesting the possibility of fraud in the voting or vote counting or some other type of irregularity. Building on this mathematical principle, Professor Mebane's studies have revealed several cases in recent years where the 2BL test revealed

statistical anomalies that suggested the need for further investigation.

2BL Tests of Presidential Elections in Florida and Ohio

Applying his "election forensics" approach to controversial elections in the U.S, Professor Mebane used the 2BL test to analyze the 2000 and 2004 presidential elections in Florida. For the 2000 election, he analyzed data from polling stations in 62 counties. After determining the critical 2BL value that would suggest a departure from the numerical predictions of Benford's Law, Mebane found that none of the 62 counties for either candidate came close to exceeding this critical value. Thus, the 2BL test for the 2000 election in Florida showed no abnormalities. For the 2004 presidential election in Florida, the results were largely the same. Using data from 50 counties, Mebane did not find any that exceeded the critical 2BL value. Again, the data did not suggest any electoral abnormality.

Many observers and analysts alleged that there were serious problems with the 2004 presidential election in Ohio. These included problems with inadequate provision of voting machines, voting machine errors, questions about provisional ballots, and poor election administration. [110] An OSCE election observation mission to the U.S. noted numerous administrative problems and legal challenges in Ohio, including a request for a court order requiring a recount based on allegations of voting irregularities throughout the state.[111]

Indeed, 2BL tests for Ohio "strongly suggest there are problems there."[112] Deviations from expected distributions

occurred in some counties where significant problems were reported, including Summit and Cuyahoga counties. But other counties with inadequate voting machines and demonstrated administrative problems did not fare poorly on the 2BL tests. "The 2BL test does significantly indicate problems with the precinct vote counts in Ohio," Mebane concludes, "but it does not appear to be a particularly useful guide for localizing all of them."[113] Notwithstanding documented problems in that Ohio presidential election, Mebane's study does not find evidence that George W. Bush won because of actual manipulation of the vote count.[114]

2BL Tests for Elections in Developing Countries

Professor Mebane has also used the 2BL test to analyze several controversial elections in emerging democracies and other developing countries. He has often found support for the findings of international observers as well as, in some instances, for the criticisms of losing political parties. For presidential elections in Mexico in 2006, he found evidence of problems with the results, which themselves appeared to correlate with local political strength. For parliamentary elections in Bangladesh in 2001, he found more support for the claims of fraud by the losing Awami League party than for the reassurance of international observers that the process was largely acceptable. For the presidential election in Indonesia in 2004, in contrast, his tests largely concurred with the favorable findings of international observers. For elections in Russia in 2006 and 2007, Mebane and a colleague found not only evidence of "widespread

fraud" but also evidence that the fraud had moved from rural areas to urban ones.

Mexico 2006

The vote count for 2006 elections in Mexico was extremely close and controversial. The declared winner was Felipe Calderon of the Partido Accion Nacional (PAN), which was the party of the incumbent president. Andres Manuel Lopez Obrador of the Coalicion por el Bien de Todos (PBT) came in second out of five candidates. In response to challenges, the election authorities ordered a manual recount in 11,839 of the approximately 130,000 polling stations or *casillas*, which resulted in the invalidation of thousands of ballots.[115]

To test the reported results, Professor Mebane used 2BL statistics for *seccion* or precinct-level vote totals and computed a 2BL test statistic for each of the five party coalitions running in the election. He found "many significant departures from the [expected] 2BL distribution," which can be explained by either strategic voting or "undue political influences." Furthermore, he discovered that voting patterns varied systematically according to which party is stronger locally.[116] In short, the 2BL tests suggested the need for further investigation.

Bangladesh 2001

For parliamentary elections in Bangladesh in 2001, the coalition led by the Bangladesh Nationalist Party won by a narrow margin of votes nationally over its rival, the incumbent Awami League (41.0 percent to 40.1 percent of the votes), but the BNP won 198 seats to the Awami League's

63.[117] The elections suffered from violence, intimidation, and allegations of misconduct, and the Awami League chose to boycott the parliament in protest. Nevertheless, observers from the European Union and the Carter Center generally endorsed the process. The Carter Center, for example, concluded the elections "were conducted generally in accordance with international standards" and suggested that the findings of international and domestic observers called into question public allegations of "massive rigging."[118]

Mebane used the 2BL test to determine whether the 2001 elections in Bangladesh exhibited statistical patterns that might be consistent with fraud. For comparison, he examined polling-station vote counts for the Bangladeshi elections in 1991 and 1996. For those earlier elections, Mebane did not find extensive departures from the expected 2BL distributions; in 1991 none of the 279 districts tested exceeded the critical 2BL value, and in 1996 just six of 320 districts tested exceeded the critical value. But the results in 22 of 253 districts deviated from the expected distributions in 2001.[119]

Mebane found more significant departures in favor of the BNP and particularly in Dhaka district. "Notwithstanding the sanguine judgments of the groups that observed the election," he concludes, "such results suggest there were extensive irregularities in the election."[120]

Indonesia 2004

In contrast, applying the same tests to village-level results from the second round of the 2004 presidential election in Indonesia, Mebane finds "only a few departures"

from the expected distribution.[121] The 2BL test does not indicate the possibility of widespread fraud.

Russia 2007 and 2008

To assess the extent of electoral fraud in Russia, Mebane and a colleague used the test to analyze the Duma (legislative) elections in 2007 and the presidential election of Dmitri Medvedev in 2008. Examining methods used to distort vote counts, they found evidence of "widespread fraud" in Russia. They also found evidence of "substantial changes in at least the location of fraud;" fraud that was not common in cities in 2007 became more prevalent in 2008.[122]

Other Applications of 2BL Tests

Professor Mebane has used 2BL tests to try to identify types of fraud other than inflated turnout, such as intimidation and coercion, as well as to make inferences about the extent of strategic voting and gerrymandering.[123] This goes well beyond other statistical techniques.

Mebane has also compared the findings from his statistical tests to the findings of contemporaneous international election observers. His comparisons of the findings of his tests to the "expert, detailed and nuanced observer reports" about the same elections "suggest that the 2BL test tends to give results that broadly agree with the observers."[124] This was true in Mexico and Indonesia as well as in Ohio, although the statistical tests did not correlate with all places in Ohio where problems were observed. In Bangladesh, the results seemed inconsistent with the findings of observers but were "very much in line with the judgment reached by

the ruling party."[125] He calls for a more extensive comparison between the findings of election monitoring groups and 2BL statistical tests.

We have not attempted to explain here the statistics or mathematics that led Mebane to these conclusions. To use the 2BL test, he needs to employ statistical calculations to determine an expected statistic for each electoral contestant. Mebane uses simulations to demonstrate that if votes are added to or subtracted from an expected 2BL distribution, the test statistic to measure the significance of deviations will be large.[126] Only high-level mathematicians and statisticians can assess the validity of this approach. To have confidence in its basic validity and relevance, international observers, aid agencies, and others will need to see more experts endorsing and using the 2BL approach. And we likely will need more reinforcement from other, more broadly accepted methods of inferring fraud or irregularities.

Mebane admits the test results are "not sharply diagnostic." For one thing, the test can come back with false positives.[127] Moreover, the 2BL test cannot identify relatively small amounts of manipulation, nor can it test for manipulations that "involve adding or subtracting votes from a moderate number of precincts selected entirely at random." But it would be triggered if all the votes were somehow replaced with various kinds of randomly generated data.[128]

The 2BL test can be run separately on, for example, different electoral districts, candidates, or offices. Analysts can test subsets of data to look for indicators of fraud in those subsets.[129]

Value of 2BL Tests for Vote Count Verification

The application of statistical analysis derived from Benford's Law in electoral contexts presents at least one major advantage over other techniques of statistical analysis. An analysis of the second digits of polling-station-level data does not require specific knowledge about the political context of the election, such as which regions or constituencies would be likely to support a given candidate or party. The 2BL analysis is based on a general mathematical theory about the properties of large sets of numbers, rather than on specific theories about voter turnout, demographics, voter preferences, or related factors. It is based on the vote counts themselves. "No covariates are involved, and no statistical models need to be estimated."[130] As Mebane points out, specific theories drawing on detailed local knowledge can provide strong evidence as to whether fraud or other irregularities occurred, but they also tend to be based on assumptions about voter behavior that can be controversial.[131]

Thus, in theory, the 2BL test does not require a detailed understanding of the underlying political situation and thus cannot be challenged based on those grounds. In practice, a 2BL analysis does require some knowledge of the voting mechanisms used in an election, to ensure that the vote counts produced should actually adhere to the 2BL distribution. Mebane cites the example of Davis County, Utah, where voters are allowed to vote for individual candidates or for entire party tickets. Because of the assumptions underlying the 2BL distribution, Mebane argues that this combination of voting processes means that 2BL does not apply in that case, which would explain why data from Davis County for the 2004 presidential election exhibits large

"irregularities."[132] As this example illustrates, even the 2BL test would require some basic background on the election being analyzed, although the type of information needed would be fairly straightforward.

Mebane has argued that the 2BL approach has positive attributes that may make it appropriate for VCV programs. First, the strategy can be implemented quickly. Second, the process can be performed using data collected at the precinct level and is applicable to a number of partisan mixes and district sizes.

Mebane has also stressed that this process is a quantitative approach to identify statistical anomalies, not a test that can determine intent. Any triggers of irregularities picked up by this approach would require additional investigation. Nevertheless, the process may help pinpoint specific locations for additional examination.

If polling station results are available, the 2BL test, using basic spreadsheet software, can produce immediate results suggesting or ruling out the likelihood of electoral fraud. When polling-station-level data from Iran's disputed 2009 presidential election were made available, it took Mebane as an individual analyst less than a day to produce an initial 2BL analysis that suggested that fraud had likely taken place. Moreover, the cost of conducting 2BL analysis is relatively low, particularly if election authorities make polling-station-level data available in a timely manner. Assuming availability of data, the 2BL analysis requires no field work and virtually no field or support staff.

The value and reliability of the 2BL test, however, must still be proved through study and practice. There is not yet

universal agreement that Benford's Law can be usefully applied to vote count data. Researchers are not yet certain which specific irregularities are detected by 2BL analyses, such that serious uncertainties remain about the test's false positive rate. The 2BL test cannot definitively identify fraud. Nevertheless, even though analysts are unable to identify with certainty the causes of anomalies, the 2BL test does provide indications to guide further investigation, such as recounts, audits, interviewing witnesses, review of documents, or other location-specific investigations.

Flawed Post-Election Vote Count Audit in Afghanistan 2009

A sample-based audit of electoral results in Afghanistan in 2009 demonstrates how postelection statistical techniques may be misused. Unlike the other postelection election-results studies we have discussed, in the case of Afghanistan it was the electoral management bodies that ordered and conducted the audit rather than any independent observer mission or analyst. The authorities in Afghanistan used a method that was superficially similar in some ways to the statistical techniques advocated by Mebane, Ordeshook, and others. But it suffered from more fundamental flaws and should not serve as a precedent for election authorities facing vote-count controversies in the future.

Mounting concerns about electoral fraud shortly after critical presidential and provincial council elections in Afghanistan on August 20, 2009, prompted the Electoral Complaints Commission (ECC) to order to order the Independent Electoral Commission (IEC) to conduct an "audit and recount" of ballot boxes in the presidential election in

polling stations nationwide for which the preliminary results met certain criteria for turnout and one-sided voting that suggested the possibility of fraud. Three of the five members of the ECC were foreign experts appointed by the United Nations special representative, while the IEC was a fully Afghan body. Although well-intentioned, the audit process was flawed. Throughout the process, the IEC and ECC issued multiple methodological and mathematical corrections. More important, no plan was developed for interpretation of the audit results, and the sampling procedure and statistical analysis suffered from significant methodological flaws. This method for a postelection statistical audit and determining the final results was not statistically sound and should not be a precedent for future vote count verification, whether by election management bodies or observers.[133]

On September 8, the ECC ordered an audit and recount of ballot boxes that met either (or both) of the following two criteria:

1. The total number of votes cast in a polling station for the presidential election was equal to or greater than 600 (since polling stations were issued six ballot books with 100 ballots each);
2. Any one presidential candidate received 95 percent or greater of the total valid votes cast in a polling station.[134]

Before issuing the audit order, the ECC issued a number of orders addressing specific Category 1 complaints (600 or more votes per polling station), which invalidated the results from entire polling stations. This made the audit order appear to be a response to widespread fraud. At the

time the ECC issued the order, eight days before the preliminary uncertified result was announced, the commission did not know how many polling stations would meet either criterion or how many votes would need to be included in such an audit. Announcements about the number of polling stations that met the two criteria varied because the IEC committed several technical errors in the implementation of the order. Ultimately, 3,376 polling stations were identified that met the audit criteria, which together comprised roughly a quarter of all valid votes in the preliminary uncertified results.

When the full preliminary results were issued in mid-September, the ECC and IEC concluded that "an audit and recount" of the polling stations covered by the September 8 order could not be completed soon enough to allow a runoff election, if one were to be required, to be held in 2009. Moreover, there were significant concerns about conducting audits in provincial centers as initially planned. After more than a week of negotiations among the IEC, ECC, and various diplomatic stakeholders, the IEC and ECC agreed to employ a sampling procedure to determine the findings of the ordered audit. The sample audit would examine 358 ballot boxes, which would be brought to an audit center in Kabul. No recount was planned or conducted. Two UN-appointed consultants developed the sampling procedure. There does not appear to be any precedent for using sampling to determine an election result in a developing country context.

At the time the sampling procedure was agreed upon, the IEC and the ECC had no plan for interpreting the sample results and applying them to the overall set of polling

stations covered by the audit. Despite having drawn a random sample of polling stations on September 24, the ECC did not decide on a formula for interpreting the findings until October 4, less than 24 hours before the opening of ballot boxes began in Kabul. The initial announcement of the formula was met with confusion regarding how exactly it would be interpreted mathematically, which led to a second announcement by the ECC outlining the mathematics of the procedure. This second announcement contained mathematical errors that subsequently were determined to make the initial formula inappropriate for the sampling method in question, and thus the formula was re-issued on October 11. This series of decisions and clarifications damaged both the credibility of the ECC and the audit process.

The population of suspicious polling stations was originally divided into three categories based on the two identified criteria for suspicion: (1) polling stations with 600 or more valid votes; (2) polling stations with 100 or more valid votes in which one candidate received 95 percent or more of the vote; and (3) polling stations in which both 600 or more valid votes were cast and one candidate received 95 percent of the total vote. A random sample of polling stations was drawn from each of the three categories. After the discovery that the sample had not been drawn correctly, apparently as a result of confusion regarding the translation of the order, a decision was made to include three additional categories to cover polling stations that had been unintentionally excluded.

Ultimately, six separate random samples were drawn, one for each category. Next, a "coefficient of fraud" was determined by dividing the number of invalidated votes in

each sample category by the number of pre-audit valid votes in that category. Invalidation rates (or "coefficients of fraud") ranged from 53 percent to 96 percent. The invalidation rates were then applied to the votes of each candidate in the six strata, which came to be known as the "collective punishment" approach.

The Audit as a Flawed Approach

The statistical approach employed in the sample audit process did not meet the basic requirements necessary to employ statistical sampling. For a sample-based audit process to produce a result that could instill confidence, the assumption of a normal distribution would need to hold true. There was no evidence to suggest the incidence of fraud was normally distributed across a population of polling stations in Afghanistan. Rather, where fraud exists, a normal distribution cannot be assumed. In short, sampling the entire population based on the assumption of the normal distribution of fraud is simply an invalid statistical approach.

Beyond the lack of foundational integrity, a number of other issues existed with the methodology employed for the sample audit.

First, units of analysis were inconsistent in the sampling and application of coefficients. The audit process investigated the likelihood of the incidence of fraud at the polling-station level, but claimed the ability to produce a coefficient that could be applied at the individual voter level to discount individual votes, not polling stations. By changing from one unit of analysis (polling stations) to another

(votes), the process infers findings for a population that has in effect not been sampled or investigated at all.

Second, the ECC inaccurately asserted the margins of error for its calculations were close to half a percentage point. This assertion was incorrect because the audit process investigated the proportion of fraudulent ballot boxes in a sample, not the proportion of fraudulent votes. As such, the sample sizes were simply too small to produce such low margins of error and high levels of confidence.

The ECC also implied that based on these "low" margins of error, the application of its "collective punishment" coefficient (invalidating the votes of all candidates at the same percentage) was accurate within half a percentage point. Even if the ECC's margins of error were accurate, they make no statement about the confidence of applying a coefficient to a population, only in the confidence that if another random sample was drawn, the same coefficient would be calculated.

Third, the stratification of the sample was fundamentally flawed. Analysts were unable to recreate the audit category samples, and the inclusion of three additional categories late in the audit process called the stratification of the sample into question. Sample stratification should be based on homogeneous characteristics that are thought to have some varying effect on the question under investigation. Stratifying the sample by provinces, for example, would have merit on the basis that the incidence of fraud might have been more prevalent in some provinces than in others. Unfortunately, there is no statistically sound reason why type of suspicion—such as polling stations with 600 or

more ballots or polling stations with greater than 95 percent votes cast for one candidate—can serve as a basis for sample stratification.

Fourth, one of the ECC's guiding principles was logically inconsistent. As explained above, it was not possible to make judgments on individual votes given the audit procedures, only on ballot boxes at polling stations. The ECC's audit process, therefore, imposed a double standard. The ECC invalidated entire polling stations based on the principle that where fraud existed the voting process was compromised at that location. But it abandoned this principle by applying a coefficient to a candidate's vote total, in essence arguing that some votes can in fact be salvaged from compromised polling stations.

Last, the "collective punishment" approach contributed to the creation of a flawed incentive structure for the future. By invalidating the votes of all candidates by the same percentage, all those who tempted to commit fraud in future elections could take from this the following lesson: for every percentage point by which you fraudulently increase your candidate's vote total, your competitors will be stripped of one percentage point of their votes, fraudulent or not. Although authorities will not allow the guilty party to keep its fraudulent votes, it will reward that party by taking votes away from its competitors.

While the audit process may have provided the means by which to reach a political solution regarding the next step in the election process, the audit was based on a series of flawed approaches.

IEC-Quarantined Polling Stations

Separate from the ECC audit process, the IEC decided on its own to withhold the results from certain suspicious polling stations, pending further review. In a press release on September 12, the IEC laid out three criteria for quarantining stations:

1. The number of the votes cast and recorded was more than the number of the ballot papers handed over to a center on election day;
2. The number of votes cast and recorded in a polling station was more than 1000;
3. The votes were cast at locations that were not scheduled to open or, based on IEC information, did not open as a result of security conditions.

The IEC initially announced these criteria on September 16 to cover 579 stations, but that number was later increased to 646 stations. In early September, the IEC announced it would invalidate the quarantined polling stations, then believed to number 447. But the IEC then reversed its own decision a day later, concluding that it did not itself have the legal authority under the electoral law to invalidate results. The IEC then referred all quarantined stations to the ECC for a determination of their validity. After the ECC review of these stations, 18 were ruled acceptable, having no evidence of fraud. The ECC ruled that for 344 polling stations (not covered in other complaints) there was clear and convincing evidence of fraud. The ECC also ruled that no other polling stations from the quarantined stations could be included in the final results by the IEC without first applying audit and recount "coefficients of fraud," if applicable. It is not clear that the IEC did in

fact apply the "coefficients of fraud" to the remaining quarantined stations.

Overall, the ECC process, including the audit, began as a challenging procedural, investigative, and legal endeavor. The Commission then compounded those difficulties by failing to clearly explain its work to the Afghan public. Even though the ECC faced enormous political pressure, it was responsible for its own decision-making, particularly regarding the audit and sampling procedure, and thus bears responsibility for the flawed process.

IEC Decision to Order a Runoff

After the ECC issued its decisions publicly on October 19, the IEC faced the question of how to interpret the ECC's rulings. Some, including the ECC, believed that the interpretation of the decisions was clear-cut: the IEC should implement the announced formulas and announce a result accordingly.

Democracy International, which was monitoring the elections, calculated that the total number of votes invalidated by the audit process was approximately 1.26 million, approximately 1 million of which were cast for incumbent President Hamid Karzai.[135] Under Afghanistan's electoral law, these decisions were binding. On October 19, DI issued a public statement explaining that, after applying the ECC's decisions to the preliminary results, Karzai's percentage of the vote fell below the 50 percent threshold needed to avoid a second-round runoff election. As a result, a runoff between Karzai and challenger Abdullah Abdullah was necessary under the law.

The IEC argued that it had the right to reject the ECC's findings in the case of the audit because the audit fell outside the scope of the regular ECC complaints process. Only a small fraction of the polling stations in the audit had a separate Priority A complaint against them. Supporters of Hamid Karzai also applied political pressure in an attempt to force the IEC to reject some or all of the ECC's findings regarding the audit.

Table 1: Interpretation of ECC Audit Findings

Candidate	Uncertified Valid Votes	Invalidated Votes from Audit	Invalidated Votes from Category A Complaints	New Valid Vote	Percentage of Vote
Hamid Karzai	3,093,256	954,526	41,276	2,097,454	48.3%
Abdullah Abdullah	1,571,581	191,554	10,098	1,369,929	31.5%
Others	997,921	115,322	6,540	876,059	20.2%
Total	5,662,758	1,261,403	57,914	4,343,441	100.0%

Source: Democracy International, *U.S. Election Observation Mission to the Afghanistan Presidential and Provincial Council Elections 2009,* Revised and Updated, August 2010.

Note: DI's calculations were based on publicly available data from the IEC and ECC

After much well-publicized political wrangling, the IEC accepted the ECC's decisions and announced that they had been implemented, resulting in Hamid Karzai's vote share being reduced to 49.7 percent. Two days later, the IEC revealed that Abdullah Abdullah had received 30.6 percent of

the remaining post-audit valid vote. It is still unclear exactly how the IEC calculated the final certified results, which were inconsistent with DI's calculations from publicly available numbers. The IEC never clarified its calculations.

Disadvantages and Concerns

The postelection statistical analysis methodologies for vote count verification developed so far contain a number of important shortcomings. The data required for analyses like those described in this chapter may be difficult for analysts and academics to obtain or may simply be unavailable. Statistical forensics often cannot produce results within a timeframe useful to observers or to those who seek to mitigate the political results of fraud. Postelection statistical methods have not yet been sufficiently tested to be considered fully reliable. Election forensics tend to work only when fraud is particularly egregious; "forensic indicators or fingerprints of fraud are applicable only to political systems in which fraud in the form of ballot stuffing, vote stealing, and the artificial manufacture of official summaries [i.e., vote tabulation fraud] occur on a scale that has long passed into history in the West."[136] Moreover, unlike the postelection audit in Afghanistan, the sampling procedure and analytical approach must be statistically sound. And, at the most basic level, these methodologies may involve skills too advanced or esoteric for most democracy promoters to apply or even to properly understand.

Would-be analysts often find it difficult to obtain the quality and type of electoral data necessary to conduct statistical analyses. In particular, analyses that seek to draw comparisons with previous elections, as NDI attempted in

Pakistan, require good-quality historical data, which election authorities in developing countries often do not collect or maintain from year to year. Particularly in cases where fraud is suspected, existing records of previous election results may well reflect irregularities as well. Data from past elections, even if accurate at the time recorded, might no longer be relevant for current analysis. To consider just one example, electoral boundaries may have changed significantly from one election to the next. International election-monitoring organizations could take steps to remedy this situation through more comprehensive data collection and by making the data they do collect available to the public.

Timeliness in the production and release of voting results can also affect the usefulness of statistical analyses to election observers. The amount of time required to conduct most statistical analyses means that generally these efforts will not produce meaningful results until well after the election. Often by the time statistical evidence can be made public, the results of the election will have been broadly accepted and accusations of fraud or irregularities may no longer resonate. In practical terms, this means that statistical analyses rarely stand a realistic chance of influencing outcomes. Even more fundamentally, the collection of sufficient data to carry out a statistical analysis can take a long time in itself, while local authorities may impede release of data in a form that can be used (e.g., precinct-level results).

Until the number of cases to which these methods are applied is expanded, the overall reliability and accuracy of postelection statistical methods for identifying electoral irregularities and fraud will remain uncertain. So far, these methodologies generally have only been successfully ap-

plied in elections where fraud was already strongly suspected. As in Palm Beach County during the 2000 election, for example, post-facto statistical analysis has served more to support common knowledge than to detect unexpected irregularities. In practice, most of these ostensibly quantitative methods in fact rely on detailed knowledge of the political context surrounding the election, as illustrated by Ordeshook's analysis of vote flows. This reliance on contextual knowledge not only limits the relative benefit of pursuing statistical strategies when more qualitative options are available, it also opens such strategies to criticisms based on misinterpretation or changes in often unpredictable political circumstances. Methods less dependent on specialized contextual knowledge, such as the Second Digit Benford's Law test, are still being tested and refined. It is not yet clear whether such tests can be applied universally.

Finally, there are a number of difficulties inherent in the conceptual complexity of statistical analyses and election forensics. Only a small number of active democracy promotion and election monitoring experts have the specific, advanced understanding of higher-level mathematics and statistics required to use or even understand these methods. These postelection methods rely on complex statistical approaches that may have yet to be accepted in academia, much less among the community of election observers, election administrators, politicians, and international aid agencies. To put this kind of statistical analysis into broader practice, new training and specializations will need to be developed and promoted among professionals in the election monitoring field. Although this is possible, advanced statistical analysis will remain difficult for non-specialists

to access and understand, making it more difficult for national and international policy-makers and publics to judge the accuracy of official vote counts and to "sell" statistical vote analyses to the public as a legitimate vote count verification strategy.

CHAPTER 5: MANAGING VOTE COUNT VERIFICATION

This chapter addresses some of the policy issues that surround vote count verification strategies and methodologies. It is intended to help the VCV sponsor or implementer choose the most appropriate VCV method for a given electoral context and to guide specific policy choices regarding the VCV exercise. First, we briefly address the continuing need for vote count verification. Second, we address considerations for choosing among VCV methodologies discussed in this study—PVTs or quick counts, exit polls, public opinion polls, and postelection statistical analyses—and home in on PVTs as our preferred method. Third, we discuss issues and technical factors to consider when designing a VCV project, including factors that affect VCV implementation and the management of VCV assets. Fourth, we address the management of VCV results on election day and thereafter, including whether and when VCV results should be made public. Finally, we review considerations for a VCV implementing organization in the choice of a local partner.

This study is not about *how* to conduct a PVT, exit poll, or postelection statistical analysis. Others have addressed those questions.[137] Rather we attempt to address the question of *when* and *for what purpose* development agencies and election-monitoring organizations should conduct different types of vote count verification and similar research efforts. We seek to increase understanding of different VCV techniques and to aid decision-making about the choice of VCV techniques in particular circumstances and policy choices about how to implement those techniques.

Whereas earlier chapters in this study consider in some detail the various types of VCV methodologies, this chapter is primarily geared toward the needs and challenges facing VCV sponsors and implementers as they make decisions about what VCV methods to employ and how to employ them. Because PVTs are our preferred VCV method, we use them to structure the discussion. As defined elsewhere in this study, in a sample-based PVT local monitors observe the actual balloting and counting at randomly sampled polling stations and independently report the local results from these polling stations, which enables PVT organizers to verify the aggregation of election results. Exit polls are based on asking samples of voters about their choices, not on observation of counts. Postelection statistical analyses are conducted after the fact using actual disaggregated election results, where available. In contrast, sample-based PVTs utilize a statistically significant sample drawn from a fully known set that allows for a greater level of accuracy than other forms of vote count verification. Throughout this study we argue that a sample-based PVT is generally the best choice, assuming that speed and accuracy are important goals and provided that conditions allow for responsible, rigorous execution.

Continuing Need for Vote Count Verification

International development agencies might reasonably ask whether we still need vote count verification, both in general and in particular countries. One argument against VCV might be that it is, generally speaking, no longer necessary. The success of vote count verification mechanisms has made vote tabulation fraud much more difficult and

uncommon in internationally monitored (or internationally supervised) elections. But the experiences of Azerbaijan, Belarus, Kenya, Russia, Zimbabwe, and many others over the past several years prove that there is still a strong need for vote count verification. Officials in many authoritarian and semiauthoritarian regimes still seem inclined to rig the vote count when they can. Even consolidating democracies, as in Indonesia in 2009, can have significant controversies about vote counts.

A second argument against a continuing focus on VCV might be that VCV does not address many of the most important and challenging threats to democratic elections today. Some in the international community argue that there are many ways to circumvent vote-count-verification efforts, which renders VCV projects less helpful. Rather than manipulating the vote count, authoritarian and semiauthoritarian states engage in vote buying, media crackdowns, arrests and disqualifications of candidates, falsification of voter registration lists, and other techniques that create barriers to competition, intimidate citizens, or otherwise manipulate electoral outcomes. Perhaps in part this is because the international community has developed reasonably effective VCV mechanisms even as it has not developed particularly effective responses to many other ways of manipulating electoral processes. But, unfortunately, VCV methods alone cannot address many of these kinds of electoral manipulation and fraud. VCV should not distract from efforts to observe and address other problems with the elections.

Along with more comprehensive, effective national and international election monitoring efforts, vote count verifi-

cation can nevertheless help produce an environment that raises the costs for regimes of such practices and increases national and international awareness of such interference in the electoral process. The international community cannot be complacent in most countries about the potential for fraud or the widespread failure of election administration. Well-executed vote count verification adds legitimacy to a given electoral process if that process has been conducted without manipulation. It supports and reinforces election authorities who do their jobs well.

We need to assess the situation in every country closely and determine the potential for problems. And we should err on the side of trying to prevent election-related problems. A relatively modest VCV program could prevent chaos and thus might save lives.

Choosing a VCV Strategy

An international development agency considering support for vote count verification must choose which VCV methodology to fund as well as make a number of decisions about the scope and details of that VCV exercise. In deciding whether to support vote count verification and choosing which type to support, a potential VCV funder should consider its own objectives and needs. It should also take account of a range of political and country-specific factors, including the history, likelihood, and type of potential electoral problems; the nature of the election system; the anticipated reactions of politically important actors; the interests of other donors; and the availability and capabilities of appropriate local partners. We discuss these below.

Objectives and Needs of Funder

In choosing a VCV strategy, the sponsor should consider the relative need for speed and accuracy, the intended use of the VCV results, and the purpose it wants to achieve in specific country context.

In general, there are three possible objectives of a development agency or election-monitoring organization for vote count verification in any election:

1. *Detection* - to enable domestic or international election observers, the international community, or others to be able detect fraud and thus to be able to comment publicly and in a timely manner on the integrity and quality of an election;

2. *Deterrence* - to contribute to meaningful elections by deterring vote count tabulation fraud;

3. *Forecasting* - to inform the public in the country and the international community, within a certain amount of time after the polls close, about the results of the election.

In other words, VCV should provide its organizers with credible, independent information about the actual results of the elections and the presence and extent of vote tabulation fraud. That information can be used to forecast results before election authorities release them, to verify and comment on results from election authorities after those results are released, or simply to privately inform chosen audiences in, for example, the sponsoring governments. In general we do not favor the latter purpose, as it risks controversy if the fact of the VCV exercise becomes known

and, by keeping results secret, it does not contribute to a legitimate development purpose. At the same time, VCV results should not be released where there are genuine reasons to doubt their validity. In short, VCV funders and implementers should consider up front the real purpose and likely use of VCV results.

Sponsors and organizers should never be content with vote count verification methods that are just "good enough." VCV should be conducted with careful planning and effective implementation. Due to the singular importance of elections for determining who holds power, a botched effort at VCV—one that produces unreliable results or mismanages the use of those results—can contribute to political instability. Furthermore, a genuine effort to conduct VCV well cannot rely solely on the local implementing partner organization to determine whether and how VCV can be carried out. Although sponsors may be able to afford to take risks with some of their other DG programs, the nature of elections in determining who holds political power makes VCV too dangerous for mostly hands-off approaches. VCV has the power to affect a country's politics and, alternatively, can either help prevent or contribute to conflict. VCV sponsors and implementers should use this powerful tool responsibly and cautiously.

At the same time, as we discuss below, VCV organizers do not always need to fund VCV exercises with the lowest possible margins of error. Incremental reductions in margins of error tend to compete at ever increasing marginal costs and may not be entirely necessary politically or justifiable from a cost-benefit point of view. Although we believe every VCV exercise should be conducted with great

thought and care, we do not argue that VCV should always be done at high cost nor should it always attempt to achieve the lowest possible margins of error.

As we have said, opinion research, including public opinion polls and exit polls, is extremely valuable but better for purposes other than vote count verification. Public opinion surveys cannot be used as a mechanism for rigorous vote count verification because, among other reasons, they show preferences only at a fixed point in time before the election. Exit polls can provide information about election results quickly but produce only snapshots of self-reported voter preferences and are particularly unreliable in developing country or postconflict contexts.

In practical terms, postelection statistical analyses are best suited for identifying where fraud may have taken place and thus providing a basis for further investigation. Nevertheless, postelection statistical analyses require official tabulation data, and analysts generally cannot obtain the necessary information or conduct the analysis quickly enough to provide information about the process as it is unfolding. Thus, such postelection analyses, for all their promise, do not provide opportunities to act within short, politically significant time horizons. Generally, the processes of obtaining the necessary data and assembling good analytical or statistical models move at a pace far slower than the cementing of new political realities on the ground.

If the VCV funder or implementer desires information about the election results with a high degree of accuracy that can be delivered on the night of the election, then a sample-based, statistical PVT is the best choice. This type

of VCV provides reliable information about the results quickly and more-or-less definitively (within a given margin of error) and enables comparison with results from the electoral authorities to determine quickly whether and where tabulation fraud has occurred. PVTs are best suited for verifying the vote count on election night and for challenging election commissions and officials in the event of the possibility of fraud.

Political and Country-Specific Factors in Choice of VCV

Every election is unique and requires a careful assessment of the political context, past elections, the electoral system, and other contextual factors in addition to weighing technical concerns. This study can provide a template for a prospective VCV sponsor. But, in accordance with the recommendations below, the sponsor must adjust the project according to the specific characteristics of the country. These include (1) the history, likelihood, and type of potential electoral problems; (2) the nature of the election system; (3) the anticipated reactions of politically important actors; (4) the interests of other donors; and (5) the availability and capabilities of appropriate local partners.

History or Likelihood of Election Problems

A sponsor should decide whether to fund vote count verification efforts along with or in lieu of more general forms of election observation and monitoring in a particular country context based on an understanding of what kind of election fraud or irregularities have been observed or alleged in recent past elections or seem possible in the com-

ing election. If previous instances of fraud or mismanagement have taken place at points in the electoral process other than the tabulation stage and if the international community has deemed the vote count and tabulation processes reasonably transparent and credible, a vote count verification exercise such as a PVT may prove unnecessary and donors might do well to direct election funds elsewhere. Problems in the electoral environment can also prevent other kinds of VCV from being implemented effectively. Data from an exit poll, for example, as discussed in Chapter 3, cannot be considered credible if voter intimidation is expected to pose a major problem on election day.

Election System

Knowledge of the electoral system matters for decisions about VCV since it affects the design of the VCV exercise. One should consider in a parliamentary election, for example, whether the electoral system is proportional or first-past-the-post (FPTP). In a presidential election, sponsors or designers of a PVT should determine whether a plurality suffices to win the election or whether a runoff will occur if no candidate receives an absolute majority. If the PVT will need to provide information to predict seats, as in a parliamentary election, then it becomes essential to understand how seats are allocated. In parliamentary elections in Pakistan in 2008, for instance, voters cast ballots for members of parliament in a FPTP, single-member-district system. With 272 districts, conducting a PVT in Pakistan proved extremely difficult due to the large number of volunteers needed to sample polling places with reasonable confidence.

In Indonesia, the president is directly elected, but to be successful in the first round a candidate requires at least 20 percent of the vote in a certain percentage of provinces. Thus, a sample design must take account of how the exercise can assess whether a candidate has reached these threshold requirements. Alternatively, it is possible to simplify the PVT by explicitly only measuring the popular vote, where appropriate, but in such circumstances organizers must recognize the limits of their VCV design.

Political Considerations

Whether and how to fund a vote count verification effort in a particular country and electoral context will depend at least in part on the anticipated reactions of politically important actors. Domestic political constituencies may be more resistant or amenable to some forms of vote count verification than others. More broadly, vote count verification processes, and the PVT methodology in particular, can appear as (and are) fairly complicated endeavors. Thus, outreach to national authorities, including the election management body, and the public as well as civic education about the purpose, methodology, and meaning of the results are of critical importance for a successfully managed VCV effort.

Other Donors

The number of development agencies involved in monitoring elections at a given time may also affect the needs and intended uses for vote count verification. To avoid unnecessary duplication, the VCV sponsor and implementer should have an awareness of VCV efforts being undertaken by other donors and election-monitoring organizations. If

accurate, timely information on electoral outcomes will be available from a reliable external source, then funding an additional program may prove unnecessary. At the same time, however, U.S. government needs for information in a given electoral context may well differ from the needs of local groups, other donors, and multilateral institutions. USAID should consider how it can leverage the election observation and VCV efforts of legitimate, nonpartisan election monitoring groups to achieve its goals. Coordination with domestic election-monitoring organizations is discussed further below.

Local Partners

To be effective and credible, it is essential that local partners or implementers are locally legitimate, politically neutral, and independent. They also need to be fully competent and capable of recruiting, training, and mobilizing the required number of qualified observers. And they need to have access to appropriate expertise to help with designing the project, analyzing and managing use of the results, managing relationships with electoral and governmental authorities, and dealing with media. We discuss partner groups and local sponsors of VCV in greater detail later in this chapter.

Managing Assets when Designing a VCV Project

In addition to access to funding, VCV implementing organizations need other assets for a successful VCV effort, including human resources, technology, and necessary data. To guarantee budgetary oversight and due diligence VCV

sponsors need to verify and be confident that the domestic EMO partner(s) possess the necessary resources to carry out a credible and successful vote count verification project. In some respects, available resources should be treated as a secondary consideration since implementers can adjust tactical approaches for each VCV methodology to suit local conditions and mission resources. Finally, VCV sponsors should consider technical factors, including access to the process, cost, preparation time, and statistical issues.

Organizational Capabilities and Experienced Staff

The maintenance of a direct relationship with the local VCV implementing organization should give the sponsor a good understanding of the local organization's capabilities and ability to conduct a successful VCV effort. Even in cases where a local partner has previous experience in election-monitoring work, the sponsoring organization (the development agency or other funder) generally cannot assume that technical assistance provided to a local implementer in the past will necessarily be carried over from one election to the next. The sponsor must confirm this through due diligence, interviews with key personnel, and an assessment of the quality of past performance.

In particular, VCV funders should get to know at least the senior-level staff of its VCV partners and implementers to gauge the organization's functional capacity, knowledge, and level of experience in election monitoring and VCV. Committed, knowledgeable, and experienced staff members should direct any election observation, monitoring, or vote count verification process in all aspects of management and implementation.

Furthermore, any VCV effort should incorporate advice from an outside technical adviser, regardless of the type of local sponsor or the organizational capacity and experience of that sponsor. Outside technical advisers can provide crucial technical assistance and objective oversight of the integrity and sound management of the VCV exercise. The presence of an experienced technical adviser is particularly important for PVT projects, as these efforts require a synthesis of statistical, logistical, and contextual political understanding if they are to be carried out effectively.

Finding a well-qualified technical adviser for VCV programs can be difficult, however, because there actually are relatively few experienced experts on VCV methodologies and implementation, particularly on PVTs. Moreover, the general failure of technical advisers and election-monitoring organizations to share information and lessons learned from election to election has compounded this shortage of expertise. On a broader strategic level, USAID in particular may wish to address this problem by considering ways to foster and share VCV management expertise within the Agency and at the local and regional levels.

Volunteers

The success of every vote count verification effort, as with more traditional types of election monitoring and observation, ultimately rests on the work of a cadre of committed individuals organized by the implementing partner or sponsor. Volunteers motivated to participate by a personal or community commitment to democratic processes have historically served as the backbone of domestic and international election-monitoring efforts. Therefore, the

perennial challenge facing all election-observation efforts is to recruit a sufficient number of qualified volunteers, train them effectively, and motivate them to show up and participate for the duration on election day.

To address this problem, remuneration for election observers is becoming increasingly common, including for participation in vote count verification efforts. Compensation for observers and monitors is also increasing in frequency as a consequence of the increased funding available for per diem allowances, wages, and honoraria.

The effect of compensation for observers on the integrity of observation efforts, the quality of individual observers, and the sustainability of coalitions and initiatives for reform is unknown. It runs the risk of transforming election observation from a sustainable political cause to a mere short-term job.

Alternatively, paying observers may help ensure the effectiveness of the operation. It is possible that by paying election observers after final reports and numbers are submitted, the VCV implementer may actually ensure higher-quality reports, greater diligence, and better delivery. It may even deter or otherwise prevent unscrupulous polling station officials from being able to buy off local observers. Compensation for election observers may also be important for continuing to motivate volunteers to participate as countries move out of "transitional" stages of democratization and elections become routine. Still, it is important for the sponsor to have an awareness of whether and how individual observers are being compensated for their efforts and

how such compensation might affect budgeting or implementation of the VCV effort.

Recruiting and training observers or interviewers for a PVT or exit poll always presents a challenge. Even experienced, high-quality research firms find it difficult to recruit and retain reliable interviewers. To guarantee disciplined data collection, interviewers must be effectively trained and constantly supervised. Field work supervisors and team leaders should be continually involved, and there need to be spot checks on previously collected data. VCV organizers must check a significant sample of completed survey forms.

Availability of Baseline Data

For the rigorous execution of sample-based VCV methodologies, VCV implementers need a reasonable set of baseline data in order to generate a sample, such as a list of polling stations and their distribution around the country. Implementers also require voter registration data to determine how the number of voters and logistical constraints will affect the turnout at individual polling sites.

Experience from the presidential and provincial council elections in Afghanistan in 2009 shows the importance of baseline data. In those elections, voters could vote at any polling center in their province, with each polling center containing a varying number of polling stations. In this scenario, the number of votes tallied at each polling station within a given polling center could vary widely, variation that might misleadingly signal the possibility of fraud despite being in reality a product of polling center layout, dis-

parate turnout of male versus female voters, or other factors.

Even when sufficient baseline data are available to construct a rigorous PVT sample, sponsors must recognize the magnitude and complexity of the statistical and contextual information that must be managed to conduct VCV well. To deal with this mass of information, VCV sponsors have frequently left this stage of VCV planning to the implementing partner(s), but the risks involved in basing a VCV effort on weak or flawed statistical grounds are important enough to merit active involvement and oversight by USAID and other VCV sponsors.

Infrastructure and Communications Technology

The barriers to rigorous election observation and vote count verification posed by poor or nonexistent physical and communications infrastructure in-country are steadily falling, thanks largely to cellular phone technology. Cell phones are particularly important for PVT efforts, because they enable organizers to collect and analyze vote count data at the polling-station level quickly and accurately. With the rapid expansion of cell phone networks in many of even the most underdeveloped and remote locations, cell phones should be able to provide coverage in most areas selected for a PVT. Depending on the specific political geography at play in an election, the few areas that cannot be reached by cell phone may not be worth the additional expense. The installation of radio repeaters is likely to be prohibitively expensive for VCV efforts.

As we have discussed, the sponsor will need to balance the need for speed and accuracy in VCV results (particular-

ly for PVT results) with the availability of funding. Fortunately, the advance and spread of communications technology and infrastructure are rapidly reducing these costs. As discussed previously, however, VCV planners must also beware the risk of failure posed by overly complex systems and technology.

International Observer Missions and Coordination with Domestic VCV Efforts

International election-observation missions and VCV projects can function in a mutually beneficial manner and make for a more comprehensive election monitoring effort in a country. When a development agency partners with an international election observer mission in support of a domestic EMO's PVT efforts, the development agency sponsor has an opportunity to independently verify that the local PVT implementer has carried out its activities properly on election day. With some basic information-sharing between the domestic implementer and the sponsor and coordination with the international election observation mission, international observers can visit the same polling stations where PVT observers will be working and can note the activities of the local observers as part of their qualitative observation.

Although simple and inexpensive, this coordination rarely occurs. One reason is that the domestic implementer may resist or resent monitoring by a third party. Also, international observers may resist too much focus on or coordination with domestic monitoring groups, perhaps because they may see such coordination as a distraction or a threat to their objectivity. Nevertheless, VCV organizations

should forge strategic partnerships more often with international observer missions to support PVTs and other VCV efforts.

Media Relations

For transparency and deterrence, PVTs need to be appropriately publicized and explained. Organizers should always make plans for the PVT public in advance so as to increase public understanding, and the results should be publicized, assuming the release of this information is anticipated and desired. Local partners often will not have adequate experience with media- and public-relations and thus often require guidance, funding, and skills-building regarding communication strategies from donors and international partners. Because the media and political parties might not understand PVTs, outreach is essential to encourage public acceptance of the PVT process and results.

The question of which organizations, actors, or governments should publicize PVTs or other VCV efforts requires great sensitivity and care. In general, as discussed in Chapter 3, we argue that neither international observers nor others in the international community should make VCV results public before election authorities or domestic organizations do so. Host government and election management bodies may well find such announcements an infringement on their sovereignty; moreover, such announcements coming from international actors do not reinforce the development purpose of increasing local ownership and capacity.

VCV sponsors, implementers, and local partners should develop a media strategy well in advance of the elections so as to minimize confusion and disagreement as political

events unfold on the ground. This is why the choice of trustworthy and capable partners is a crucial step in VCV implementation. As we discuss below, the groups implementing the PVT may have greater or exclusive access to the information and, in the event of disagreement or conflict between stakeholders, can potentially make independent decisions about the release of the information to the public. As was made clear in the case of exit polls in Kenya in 2007, the decision over when (or whether) to release VCV results can become a major source of contention among local stakeholders, USG officials, implementers, the media, and the public.[138]

Technical Factors to Consider in Designing a VCV Project

Decision-makers must determine not only which VCV mechanism to use but also how much value to place on knowing *on the night of the election* the likelihood, extent, and locations of potential vote count fraud. Rather than seeking to compromise on tradeoffs between the accuracy and timeliness offered by the various methodologies, the potential sponsor of a VCV exercise should consider how the information needs dictate its choice of a VCV strategy.

After the sponsoring organization considers its primary goals for vote count verification and the relevant political and country-specific factors, a number of other variables should inform the adaptation of particular VCV methods to the specific electoral context. The elements of VCV design include (1) the level of access of observers to the process; (2) the cost, which itself depends on the speed, accuracy, accessibility, and technology; and (3) the preparation time

available. To make good decisions about VCV, officials from the sponsoring organization overseeing vote count verification efforts must be familiar with these variables, which should inform their guidance to the designated implementing partner or partners.

Access

As with traditional forms of election monitoring and observation, the level of access observers will have at each step in the electoral process largely determines the degree to which any given VCV technique can be useful, implementable, and effective. General access before the election to relevant political stakeholders, election officials, and media as well as information about the electoral process are all important for understanding the electoral environment and designing accurate and context-relevant VCV programs.

In particular, on election day while voting is taking place, adequate observer access to polling stations and the vote counting process are critical for credible vote count verification, particularly in the case of PVTs. Election observers for the Belarus 2004 presidential election, for example, had reasonable access to election-day processes during the balloting process but were not permitted after the close of the polls to come close enough to observe the actual vote count. Vote counts were posted only after being finalized in a separate room away from observer view. This would have provided an opportunity for unscrupulous local election officials to compromise the vote totals that the PVT would draw upon. Any manipulation of vote totals at

the polling-station level essentially undermines the effectiveness of the PVT.

Cost

In addition to access, cost considerations play a critical role in the design and implementation of a VCV exercise. Small margins of error and high degrees of confidence increase the cost of any kind of survey research. Four primary variables affect the cost associated with vote count verification efforts: (i) the speed with which results are to be produced, (ii) the necessary accuracy of those results, (iii) the accessibility of selected observation sites, and (iv) the level of sophistication of technology needed.

***i. Speed*:** In a given electoral context, a sponsor should determine the speed at which it needs to produce results from a VCV effort in order to meet its goals for using the results. As discussed above, the primary question for the VCV sponsor or implementer is not which VCV mechanism to use, but rather how much value sponsors, implementers, and other stakeholders place on knowing reasonably soon after the polls close whether and where fraud might have occurred. If sponsors and implementers prioritize timely results, then a sample-based PVT is the best choice. If a less speedy return of VCV results is acceptable—for example, if the sponsor's focus is on providing a baseline for assessing fraud in future elections or aiding postelection investigations—then a postelection statistical analysis might be a more cost-effective and appropriate choice. Increased speed generally increases associated costs.

***ii. Accuracy*:** Before deciding on a desired level of accuracy for the VCV results, the sponsor should realistically assess its need for information, the situational constraints on statistical rigor, and the potential for political volatility. Just as with speed, there is a cost associated with increases in accuracy; moreover, marginal gains in accuracy can drive up the cost of VCV dramatically. In any case, in close elections, PVTs should not be treated as definitive, because they are subject to a margin of error. In such situations observers cannot responsibly call official results into question. If an election is likely to be decided by a five-point margin, for example, it is not necessary for VCV to measure the statistically valid outcome with accuracy within half a point. In politically unstable situations or where the outcome of a race is expected to be exceedingly close, VCV results that differ from the actual results by a small amount do not give the losers or observers a legitimate basis to challenge a potentially peaceful and legitimate transition of power. Overall, vote count verification efforts should strive for reasonable accuracy, make reasonable attempts at randomization, and focus on getting useful results, within the context of what is feasible and cost-effective under the circumstances.

***iii. Accessibility*:** In nearly all cases, VCV efforts are not carried out with a purely random sample of polling places, due in part to the inaccessibility of some polling sites. But PVTs need not necessarily reach into the remotest parts of a country, if the costs associated with security, logistics, and accessibility are too high. It may not be worth the marginal cost (e.g., chartered transportation, satellite communications, etc.) of reaching a few extremely remote

locations given insignificant increases in accuracy. Real-time changes and substitutions of polling places in the field are inevitable. Although PVT implementers and analysts must be careful about the number of missing data points, the substitution or loss of a given polling station in the sample generally will not significantly affect the quality of the VCV result.

***iv. Technology*:** Another consideration involves managing technology and systems for timely, accurate, and cost-effective vote count verification. It is often not only possible but desirable to take a "low tech" approach to technology and systems, as long as these produce rigorous, timely results. An increase in the speed of VCV results that depends on using more complex technology or systems can increase the risk that the VCV effort will fail. This occurs because technical problems are more likely in a VCV exercise that relies on complex systems and technologies. Increasing use of technology also tends to drive up costs. A PVT reporting system might be as simple as a central "phone bank" of cellular phones, with observers reporting back their polling station and vote count numbers by text message.

Monitors in Mozambique conducted this kind of low-tech PVT for municipal elections in 2003 and national elections in 2004, at a cost of only a few thousand U.S. dollars for a cell phone bank and a few personal computers, with no network or processing software necessary. Perhaps the simplest possible reporting format was used successfully for the 2006 independence plebiscite in Montenegro, where observers at 75 polling stations used handsets loaded with a simple Yes/No template. More sophisticated systems can

be scaled up if funds, manpower, and time allow, but they are not always necessary.

Some PVTs have been done at considerable cost, including many in Latin America. Likewise, a PVT for the 2011 elections in Nigeria reportedly had a budget in the millions of dollars. Investments in technology often drive up costs, but they are not always necessary to ensure a reasonable, robust PVT.

One way for VCV planners and managers to control costs is to leverage existing local organizations and resources. When a PVT is conducted in partnership with an existing local election-monitoring organization, for example, funds may only be required to cover project-specific data processing, phone banks, logistical costs on election day, and perhaps some form of compensation or allowance for observers. Sponsor organizations planning for VCV must recognize that funding may be wasted in the absence of adequate EMO staffing and experience, and should weigh both the existing funding levels and the institutional capacity of potential partners.

Preparation Time

The amount of time available to organize a VCV effort is critically important. The preparation time required will depend on the extent of available domestic EMO expertise; the availability of qualified experts on statistics and demographics; the extent of EMO infrastructure; and the size, geography, and complexity of the country. For small countries and relatively straightforward situations, effective groups might organize an effective PVT in six weeks, while in larger countries facing more complex elections, six

months to a year may be required. Domestic EMO partners lacking experience in election monitoring and VCV execution may require additional time for volunteer recruitment and training. Thus, sponsors and implementers should think about preparation time as a function of goals, available resources, and country size and complexity.

Statistics and Sample-Design Issues

VCV efforts, like other survey research projects, must have the proper sampling frame and sample design. With rare exceptions, VCV statistics are based on cluster samples, which may be stratified to better ensure accuracy. Statistics generated by cluster samples (e.g., margins of error, confidence intervals, variances) must use cluster sample calculations. As a general rule, even for cluster samples, every voter should have an equal opportunity to be part of the sample. Cluster samples that first eliminate more remote islands, military bases, security threats, and the like violate this principle and compromise random distribution principles. Likewise, sample points in nonstratified sets should not be replaced simply because the selected polling station cannot be reached or no volunteer can be found to observe it. For practical, logistical, and other reasons, not every sample point will report data, so the results should provide for a weighting scheme that accounts for these missing data if necessary.

Sample points must be preselected from a list of the universe of such points. If no list of polling stations is available, it will be necessary to pick from a list of villages and assign polling stations based on a standard selection method like a Kish Grid. A sample that relies on observers

to choose their own polling stations will destroy randomness and thus accuracy.

National samples, as we have discussed, generally do not provide enough information to verify elections determined by subnational results. Rather, researchers need to design separate statistically significant samples for each electoral district.

Management and Ownership of VCV Results

When the polling-station-level data in a given country have been gathered and the results analyzed and finalized, the VCV sponsor and implementer will be faced with the need to manage the use and possible public release of VCV results. Some would argue that, at least in theory, sponsors and implementers should never commit in advance to publicly releasing the results of a PVT or other VCV. Others would suggest that the results of PVTs or other VCV exercises should always be made public, both to further the important goal of transparency and to try to deter any potential malfeasance. In any event, in practice, the international or local implementing partner generally determines whether and how to publicly release results. Providing a grant to a civil society EMO to conduct a vote count verification project is an act of recognition that the VCV results will be "owned" by the partner organization. If a sponsoring agency, however, would like to maintain control over the results of the VCV, including retaining discretion about whether and when to release the results publicly, then an international EMO or private implementer may be a more appropriate partner. Theoretically, in such circumstances, VCV results can be kept private and used discreetly for the inter-

nal purposes of the sponsoring agency. As discussed in Chapter 3, trying to keep the results of a PVT or exit poll private is often a mistake.

Development agencies sponsoring VCV should understand the relationship between outside implementers or advisers and domestic implementers or EMOs. The funding agency should make sure it has enough contact with the domestic EMO to fully assess the local partner's technical and organizational capabilities rather than relying on its U.S.-based or international implementing partner for this kind of due diligence on local funding recipients. Given the political sensitivity of VCV efforts, it would seem desirable for the funder to maintain a direct relationship with the local implementer and to be well acquainted with that organization's capabilities, strengths, and weaknesses.

Choosing a Partner for VCV

Local Partners and Partisanship

As discussed, it is essential that local partners or implementers be politically neutral and independent. Yet in transitional elections, domestic election monitors are almost invariably attacked or dismissed as partisan, especially by the authorities and incumbents who find them threatening or irritating. Virtually every EMO has faced similar charges of partisanship from parties, governments, election officials, and even the international community.[139]

The conventional wisdom in every country facing difficult elections holds that it is exceedingly difficult to find impartial, neutral people to work as activists or election monitors. Many international experts share this skepticism

about whether domestic monitoring or similar organizations can ever be independent and credible. The long-time Jimmy Carter adviser Robert Pastor, for example, observes, "In 20 electoral processes in 15 countries, I have never seen a nonpartisan domestic observer group that has enjoyed the trust of all the parties. In most cases, the nonpartisan group is suspicious of the incumbent government, and that distrust is reciprocated."[140] Indeed, domestic monitoring groups are virtually always perceived as biased even when they are not.

Although common, this criticism is misplaced. Often domestic monitoring groups support political change in environments where defenders of existing regimes essentially oppose democratization. Nevertheless, election monitoring and VCV groups have indeed been able to establish their independence and credibility for many pivotal elections. Their opposition to authoritarian systems or undemocratic elections does not make them partisan. The real question is whether such organizations are objective.

In response to almost inevitable accusations of bias, domestic partner organizations should be committed to trying to convince electoral authorities, parties, the public, and the international community of their neutrality. This might mean asking their volunteers to sign pledges of nonpartisanship and forbidding them to make any public demonstration of political preferences. Anyone who violates this pledge should be required to resign.

Although such promises from individuals and organizations are not sufficient by themselves, they help demonstrate that an organization is concerned about its reputation.

Every successful election monitoring or VCV organization has had to establish a reputation for objectivity and effectiveness by focusing only on the election process, avoiding public support for parties or candidates, and emphasizing training and professionalism of its members. A local partner must demonstrate its competence and emphasize, in both words and actions, its commitment to the democratic process itself.

Ultimately, the credibility of a local organization is measured by the degree of confidence that the government, the contestants, and the public have in the integrity of the VCV effort. The local organization needs to demonstrate its expertise, competence, and political balance. It needs to ensure the integrity and feasibility of the VCV plan. It should ensure that its decision-making and implementation are transparent. In most democratizing countries, the relationship between election monitoring/VCV organizations and election authorities improves over time.

The relationship of the local VCV organization with the electoral authority is extremely important, especially, as is common, when the electoral management body (EMB) has considerable discretion over observer access to the process and decisions that can help or hinder the verification effort. Accordingly, it is important, if possible, for the international and domestic organizations conducting the VCV to build a relationship of mutual respect. This is difficult if the government or EMB is hostile to election monitoring, but more typically governments are either committed to competitive elections or forced to conduct them because of domestic or international pressure. Such relationships tend to be less adversarial with increasing democratization, although

EMBs even in democracies will be wary of outside checks on their authority or results. The chances of more collaborative relationship increase if the international and domestic VCV organizations are credible and sophisticated.

Choosing a Local Partner

In choosing a VCV partner, a prospective international funder or sponsor should ask who should have the VCV data and how the sponsor is likely to be viewed as a consequence of the VCV exercise. In addition, other issues, including the level of funding available for a VCV program, will also have some effect on the sponsor's choice of a partner organization. We also stress the need for direct relationships between the sponsor/funder and the local VCV implementer for purposes of due diligence, budget monitoring, and ensuring that VCV is carried out accurately and in a way that respects the sensitivity of the political process.

A sponsor should carefully review the range of available VCV implementers and partners in a country and allow its goals and concerns to inform the choice of a local partner. Although we generally think of domestic election-monitoring organizations as the most logical partner for vote count verification efforts, other possible partners in a given electoral environment might include international organizations and NGOs (including international election-monitoring organizations and implementing partners on other DG projects) and the local EMB. We discuss other implications for VCV partnerships with each of the aforementioned potential partners below.

Domestic EMOs

Since serious election-observation and VCV efforts began more than two decades ago, itn development agencies and democracy assistance organizations have favored domestic election-monitoring organizations as partners on VCV projects. Nonpartisan, nongovernmental EMOs provide the best choice as local partners for VCV efforts, as their commitment to neutrality helps to ensure a more objective execution of the VCV and provides a buffer against criticism of VCV activities. Conducting VCV efforts with domestic EMO partners also carries the benefits of building institutional capacity, facilitating organizational development, and complementing broader DG efforts by laying a foundation for future civil-society-strengthening work. However, because the local partner will generally be first and foremost an election-observation organization in the traditional sense, with vote count verification taken on as a supplement to existing activities, rigorous budgetary oversight includes ensuring that funding made available for VCV is not redirected into general election observation programming or overhead costs.[141]

By conducting VCV in partnership with domestic EMOs, however, the sponsor generally allows the EMO to have ownership and control over VCV data and results. The EMO, rather than any other implementing partner or the sponsor itself, owns the process, information, and data. If the sponsor wishes to produce VCV results primarily for internal purposes or otherwise intends to control the release and use of results, then it needs to make that explicit in its agreement with the implementer and will probably need to work through an international EMO or private firm.

This outcome is consistent with the reason for conducting VCV in the first place: to support democratic elections by deterring or detecting an important type of potential fraud. It is entirely appropriate that the partner domestic EMO would have the responsibility to determine what effect its VCV efforts have on the election. In other words, the decision of how to use VCV results should lie with the EMO rather than with the sponsor. But because the public will likely associate the sponsor's name with the management and results of the VCV, the sponsor will have an incentive to collaborate with the EMO on the responsible and appropriately timed release of results.

Election Management Bodies

An election management body can also be a partner for VCV. If an international sponsor fears vote count manipulation at the local level and believes that the EMB is credible, trustworthy, and effective, then funding an EMB-based PVT may be a viable VCV strategy. The EMB's use of a VCV strategy should help deter or detect local efforts to tamper with election results.

International Election-Monitoring Organizations and Private Firms

International organizations that conduct election-monitoring activities can be suitable sole partners for some forms of VCV, particularly organizations that possess the technical knowledge needed for exit polling design or post-election statistical analyses. These groups, however, are generally not equipped to conduct PVTs without a local partner due to the cost and recruitment barriers they face in delivering a sufficient number of observers to gather data

for a sample-based PVT. Further, as noted above, partnering with a domestic VCV implementer offers other benefits, including helping to build organizational capacity or building credibility for EMOs or civic coalitions.

Political Parties

Although political parties may themselves mount vote count verification efforts, such as exit polls and PVTs, development agencies and international election-monitoring organizations should avoid supporting VCV associated with partisan groups. Although parties and candidates have a legitimate interest in verifying the vote tabulation, international groups must protect the credibility of the efforts they fund.

Media Organizations

Media organizations are sometimes interested and able to implement VCV efforts, but given the media's incentives and interests it may be difficult for international development agencies to partner with them.

Conclusion: Choosing the Appropriate Method of Vote Count Verification

The lack of an international consensus on VCV appropriateness, objectives, and techniques is itself a challenge to VCV implementation. Competing institutional priorities between and among international and domestic organizations have complicated decision-making about the funding and implementation of VCV efforts, including the choice of VCV techniques.

Sponsors must take care to act responsibly when funding and helping to develop vote count verification and parallel vote tabulation projects, beginning with the early planning stages through implementation on election night. The results these exercises produce are uniquely suited to affect evolving political realities. From an individual, professional perspective, a DG officer or other representative of a sponsoring agency should be concerned with his or her ability to comment in a timely and accurate manner not only on the outcome of a particular election but also on the integrity and rigor of the donor-funded process that provided that information. This requires that the DG officer or sponsor representative have a strong technical understanding of the VCV process and direct communication links with the implementing partner. Moreover, relying on an untested implementing partner to ensure the integrity of VCV results is a potentially dangerous strategy. The political ramifications of publicly released VCV results—or even of unreleased results that the public is nonetheless aware of, as we have seen in Kenya in 2007—are critical and immediate. By contrast, the political implications of other DG programming are more likely to have an impact over longer time horizons, allowing opportunities for the review and correction of weakly managed or underperforming programs. Elections allow for no such grace period.

Survey research, while highly useful for a number of DG purposes, is not an effective or responsible method of vote count verification. Survey data provide only a snapshot in time of a group that may include an unknown number of voters and nonvoters. For these reasons, survey research cannot serve as a mechanism for verifying actual

election outcomes. In political party strengthening projects, it can be useful to have the data to make a correlation between what people think and which political groups they are supporting. Thus, surveys are important for informing DG assistance, but surveys regarding political and electoral preferences can unintentionally influence voters or have other unintended consequences. Publicizing a snapshot of political preferences does not seem to serve DG development goals in already-divided and polarized societies. Not releasing the results publicly is another possible option, but this strategy does not eliminate the risk that the existence or results of the survey will be leaked or made publicly known by other means. On balance, if a development agency's goal is to verify the results of an election, it is always better to fund a more direct form of VCV.

CHAPTER 6: NEW CHALLENGES FOR VOTE COUNT VERIFICATION

Foreign assistance agencies, democracy assistance organizations, and election-monitoring organizations, working together, have had such widespread success in detecting vote tabulation fraud that the incidence of such fraud has been substantially reduced, even in countries where regimes are willing to cheat to remain in power. VCV techniques can be adapted to deal with somewhat different challenges, such as voter registration. They can take advantage of new technologies. And they face many practical, legal, and political challenges, including the emergence of electronic voting systems in developing countries and the need to improve coordination and reduce institutional competition among VCV implementers and stakeholders.

PVTs were developed as a means of verification for elections that use traditional paper ballots and that count the votes and announce the results at the local level. PVTs and exit polls are best able to deal with a single election—in VCV contexts, typically a national election—posing a direct choice between or among particular candidates or parties. But, as we have seen, parliamentary or legislative elections pose an administrative and organizational challenge because each electoral district requires a separate VCV exercise, which substantially increases the difficulty and cost of the exercise. Mixed electoral systems, such as a legislature elected partly through first-past-the-post district elections and partly through larger districts (or a single national district) using party-list proportional representation, add further complexity. In these cases, separate VCV exercises must be conducted for each electoral district, includ-

ing the proportional representation district(s). Practical challenges for all types of VCV include the challenge of getting the appropriate databases and other information from electoral authorities, whether it is a list of polling stations for PVTs and exit polls or the disaggregated (by polling station) electoral results for the purpose of conducting statistical analyses.

This chapter focuses on four particular VCV challenges that have yet to be specifically addressed in this study. First, we talk about the challenge of using VCV techniques to verify the quality of voter registration lists. Next, we consider the use of text messaging, and by implication other technologies, in VCV reporting. Third, we consider how the increasing use of electronic voting has complicated existing means of vote count verification. Finally, we address the challenge of improving coordination, and reducing institutional competition, among development agencies, implementers, EMOs, and experts.

Voter Registration Audits

It is becoming increasingly common that VCV organizers are also conducting verification of voter registration lists. The statistical and methodological principles and techniques that guide PVTs also apply to voter registration audits (VRAs). Much as PVTs and other forms of VCV can contribute to public confidence in the balloting and counting processes, well-designed and well-implemented VRAs can check the integrity of the voter registration, which is often a source of concern and controversy.

Analysis of voter rolls increases transparency by rigorously assessing the extent of problems with voter lists. By conducting a statistically significant audit to verify the accuracy of the voter registration rolls, observer organizations can provide an independent assessment. This will bolster public legitimacy, if the lists are reasonably accurate, or else bring deficiencies to light, allowing them to be addressed by the electoral authorities. Based on the results, electoral authorities can improve voter registration procedures, electoral authorities and civil society organizations can design higher quality voter education programs, and citizens and the international community will have increased information about voter registration issues.

Effective VRAs require both a "list-to-person" comparison, which assesses whether the names on the list are real, and a "person-to-list" comparison, which assesses whether eligible voters who have registered are actually on the lists. For a list-to-person audit, implementers make a random selection, based on a standardized methodology, of a set number of households from the voter lists, which are often provisional. Interviewers verify the existence of and voter registration information for persons listed by visiting each household and surveying the head of household or other informed household member.

For a person-to-list review, VRA implementers select and visit a set number of random households to ask, based on a simple survey questionnaire, whether eligible household members have registered and confirm that they are listed correctly on the (often provisional) voter list. The observers collect the data and forward it to a central data center for tabulation and analysis. This sample should provide

a robust data-set that permits nationwide projections of any error rates in the voter registration lists.

VRA implementers will need adequate access to (1) the voter registration rolls from the electoral authorities, including the record of location/address information for individual voters that is accurate enough to find them during the "list-to-people" portion of the VRA, and (2) a final, complete list of voter registration centers or relevant locations at the local level. This information is sometimes difficult to obtain, either for technical or political reasons.

A basic sampling frame can be designed in advance of the preparation of the electoral rolls. It entails drawing a random sample of registration locations from a list of voter registration centers. It is preferable if the actual sample of voters for the list-to-people audit is a result of drawing names from the official preliminary or final rolls. If implementers do not have access to these data, they can use a modified sampling frame from which to draw the samples necessary to test the lists, although this is not an ideal scenario. If the voter lists are not computerized and are available locally in hard copy, observers need to follow a standardized methodology for systematically drawing samples from lists of the voters registered at particular locations. For the people-to-list audit, VRA implementers use the same cluster of locations that were used for the list-to-people audit but select random households to include in the sample, as described above. The same cautions that apply to PVTs regarding margins of error, careful design, and effective implementation also apply to VRAs.

The design of the statistical sample for a VRA will dictate deployment logistics and communications protocols. Implementers need to test communications systems and data processing and to train observers.

To be most effective, VRAs are usually designed and implemented well in advance of an election (generally at least six months before polling) to enable time to draw a sample, conduct an audit, report findings, and permit authorities to act on recommendations. With less time, a VRA can potentially still act as a deterrent or ultimately be available to point out deficiencies in the final voter registry, even if these shortcomings cannot be corrected before polling day. Armed with credible information about the extent and nature of deficiencies in the voter lists, authorities might still be able to take steps to mitigate those problems through polling and counting procedures as well as through training of polling station staff members.

VRA implementers, development agencies, and experts will need to consider what constitutes a reasonable error rate for voter registration lists. Errors in voter registration lists are inevitable, even with well-organized administrative processes in developed countries. Thus, VRA implementers need to have an idea about how to put their findings in context and how to avoid casting aspersions or raising doubts about voter lists that are reasonably accurate.

A decision about whether to conduct a VRA is independent from a decision about the need for VCV. A PVT or other VCV exercise does not rely on verification of voter registration.

Using SMS for PVT Reporting

Technology holds considerable promise for improving vote count verification, but it is far from a panacea. For example, cell phone text messaging (short message service or SMS) might provide a more efficient means of communicating and synthesizing data in elections. But, while SMS reporting systems for PVTs could theoretically provide faster vote count projections, there are also serious technical and practical challenges. Some election-monitoring organizations have used cell-phone SMS systems to coordinate observers and report on qualitative observations of electoral conditions, but SMS reporting systems for PVTs or other VCV is much more difficult.

Separate from VCV, election-monitoring organizations have successfully used text-messaging to coordinate observers and collect basic qualitative information. The Indonesian groups LP3ES, Yappika, and JAMPPI, with advice from NDI, used SMS reporting during local government elections in Indonesia in 2005 to speed up reporting.[142] When an observer was ready to report, he or she sent a text message to a central server with his/her official observer ID. The system then placed the observer in a call queue and sent an automated response with the expected time the reporting center would call back. This enabled more efficient use of available phone lines.[143] NDI used a similar methodology for the Palestinian elections in 2006 to track the movement of observers throughout the country. For elections in Albania in 2007, a coalition of domestic observers used SMS reporting to collect information from 1,200 observers throughout the country, including information on turnout, via more than 41,000 text messages sent on elec-

tion day.[144] Observers also used an SMS rapid-reporting system for parliamentary and presidential elections in post-civil-war Sierra Leone in 2007.[145] Democracy International election observation missions used SMS reporting for elections in Pakistan in 2008 and in Afghanistan in 2009 and 2010.

Traditionally, PVT organizers collect information from individuals in person and by telephone. Face-to-face reporting is inefficient for obvious reasons and land lines are sometimes difficult to find outside of urban areas, particularly in developing countries. Using land lines or cell phones to contact call centers can also be problematic, as observers face long delays because of a limited number of lines and operators on the receiving end. Moreover, a cell-phone-based call center generally cannot have the calls roll over to the next available phone line. Cost reimbursement also presents a problem, as frequent cell phone calls can be expensive and receipts are generally not readily available. SMS has the potential to alleviate some of these issues.

To date, however, the only successful use of an SMS reporting system to conduct a PVT was apparently in Montenegro in 2006. With assistance from NDI, a domestic election-monitoring organization, the Center for Democratic Transition (CDT), used SMS reporting in a PVT for a high-profile referendum on the question of independence from Serbia. Each observer sent to a polling station in the sample carried a cell phone and was assigned a set of codes to so that he or she could directly text turnout and poll results to a call center. This system allowed observers to report results accurately and quickly.[146]

The referendum in Montenegro, however, was particularly amenable to text messaging because it was unusually straightforward. It took place in a compact geographical region with a relatively education population accustomed to using SMS. There were only two choices for voters: either for or against independence. Observers needed only to text a simple code: "d +" the number of YES votes and "n +" the number of NO votes. Using this system, the observers were able to project that the referendum would be extremely close. Indeed, the CDT could not be confident of the results, because the results of its PVT were within the margin of error.

Unfortunately, it may be difficult to replicate this modest success elsewhere. Using SMS for reporting quantitative information is usually both costly and complicated. In a PVT for a traditional election, the SMS forms that need to be filled out are significantly more complex than the YES-NO vote presented by an independence referendum. This necessitates an SMS template with several different categories (for example, one for each candidate or for the conditions of a polling station). First, this makes the projections of the PVT extremely susceptible to human error. A simple erroneous keystroke could invalidate the results of an entire polling station, jeopardizing the overall tabulation. Second, this means that if observers are using different types of phones, there can be no given set of directions that applies to all observers, because different phones have vastly different layouts and operating systems. Theoretically, this could be solved by providing all the observers with a uniform model of phone, but this would quickly become extremely expensive. A cell phone with the required capabili-

ties might cost the equivalent of several hundred U.S. dollars or more, and organizers might have to equip a couple thousand observers to cover the polling stations in the sample. It would generally be difficult to justify this enormous equipment cost simply to modestly speed up VCV results reporting. Alternatively, if observers were to use their own cell phones, it would be extremely difficult to coordinate, standardize, and synthesize the process of texting the results.

There have been at least a couple of other attempts to use SMS for PVT results reporting. The Institute for Education in Democracy conducted PVTs for two parliamentary by-elections in Kenya in 2008 using SMS as a reporting tool for polling station results.[147] Similarly, the Foundation for Democratic Progress evidently used text messaging for a PVT in 2008 in Zambia.[148]

In short, reporting systems using text messaging show some promise but have yet to become a feasible alternative for most quantitative election-results reporting because of logistical and cost hurdles. SMS or other communications technology is generally not yet a practical alternative for vote count verification.

Electronic Voting and VCV

Over the next few years countries around the world, including developing democracies, will continue to adopt electronic voting (e-voting) systems. At present, both Brazil and India use e-voting exclusively in all elections. Venezuela and the United States also use e-voting on a wide scale. But electronic voting systems have become extreme-

ly controversial in the U.S. and will certainly be viewed even more suspiciously in countries where the politics are highly contentious and democratic institutions remain fragile. Electronic voting technologies also present a new and different set of challenges for observers and monitors attempting to verify vote counts, and thus e-voting requires new approaches to vote count verification strategies.

E-voting takes two basic forms: direct recording electronic (DRE) and optical scan systems. DRE systems require voters to enter their ballot choices directly into the machine, for example, by touching a computer screen. DRE devices may or may not produce a paper record. In optical scan systems, the voter indicates his or her choice on a special paper ballot, which is then electronically recorded, tabulated, and stored for verification purposes. These technologies include optical mark recognition, optical character recognition, and punch card reading machines. Optical scan systems combine a kind of traditional paper ballot with electronic counting. Data can be transferred to higher levels for aggregation by either physical means—using a memory card, optical media, or magnetic media—or by electronic means.

E-voting brings with it several distinct advantages over traditional voting methods. In theory, e-voting streamlines the voting and tabulation process and greatly reduces the possibility of human error. Since computers perform the tabulation process, the slow and cumbersome process of counting votes by hand is rendered obsolete. In turn, this allows the election management body to provide election results to political contestants and the public more quickly. There also is much less room for human error since ma-

chines, at least in theory, do not miscount votes. E-voting also arguably makes it more difficult to tamper with votes at the polling station because many traditional forms of ballot stuffing and cheating are no longer possible and the technical wherewithal to manipulate the computers is costly and difficult to procure.

Nevertheless, e-voting has significant drawbacks as well, and it has become extremely controversial, even in developed democracies. The first and foremost concern involves the absence of transparency. Many types of electronic voting technologies lack an easily observable record of the voting. Since virtually all of the underlying e-voting processes are invisible, a certain amount of uncertainty exists. This issue can be especially problematic in the context of an emerging or transitioning democracy where issues of trust abound.

A second, related concern is security. E-voting software may be vulnerable to tampering, manipulation, and hacking. There are three types of security risks: the possibility that the system fails because of poor design or errors, the threat of manipulation from the outside (hacking), and the possibility of manipulation from the inside.[149] Electronic voting machines, at least theoretically, could alter polling-station vote totals in ways that are completely unobservable by those present. Thus, the security of DRE machines depends on protecting hardware and software from the problems associated with poor design, tampering, or manipulation.

Some computer scientists have said that when using machines to record votes on a removable card there is no

way to determine if the card or the code that operates the machine has been tampered with. They suggest that it is not difficult to program a machine to change votes and that no reliable way exists to determine if that has happened. There have been cases, for example, where the system has included an algorithm giving extra votes to one party.[150] These experts criticize companies hired to test the equipment for failing to study the source code, and they criticize election management bodies for failing to employ computer security analysts.[151] In the 2004 U.S. elections there were claims of manipulation of e-voting in some states, and there also have been apparent mistakes. In several U.S. elections, including California's 2003 gubernatorial race and the 2000 presidential race, among others, votes were misdirected to unintended candidates.[152]

Responses to the Problems of E-Voting

In response to concerns about the perceived vulnerability and lack of transparency of e-voting, election authorities in the U.S. and elsewhere have increasingly turned to voter-verified paper trails (VVPTs) (also known as voter-verified paper audit trails, or VVPATs) with DRE or have returned to using paper ballots counted by optical scanning or other counting equipment.[153] With VVPT, the voter casts his or her vote electronically and receives a paper receipt of the vote that is then placed in to a ballot box, thereby producing physical evidence that can later be used for audits and recounts. This measure should reduce concerns about transparency since it retains a record of voter choices that can be audited. Furthermore, the paper receipt provides as-

surances to voters that their ballots have not been improperly or mistakenly cast.[154]

Others have suggested changing existing voting laws to account for the limitations of e-voting. Specifically, laws should be revised to ensure there are mechanisms in place to enable greater transparency for political candidates, observers, voters, and other stakeholders. Election laws governing e-voting should address, among other things, transparency, security, certification and contractual obligations, intellectual property, and challenges, recounts, and audits.[155]

VCV, Monitoring, and E-Voting

The reduced transparency of e-voting technologies presents a major challenge for vote count verification. Direct observation of the voting and counting and access to the results at the local level provide the technical and conceptual bases for PVTs. But because the processes at work in e-voting are invisible, they cannot be directly observed. Electronic voting machines perform the function of counting the votes entered into them, thereby eliminating the vote-by-vote hand counting that occurs in elections using paper ballots, but observers cannot see the actual counting process.

Moreover, in most elections using e-voting, results are transmitted to, counted in, and aggregated at a central location; they are generally not tabulated and announced at the polling station level. This practice makes a PVT ineffective because monitors must have access to data on a local level. Observers in elections using e-voting technologies can independently report on the pre-tabulated voting results from

the electronic voting machines only if those results are counted and announced at the polling station. And that only allows a check on tabulation fraud at higher levels; it does not address the possibility of manipulation by and of the voting machines at the polling-station level. If the results were calculated and announced at the polling station, PVT implementers would be able to collect those results for the PVT sample and use them to verify the integrity of the tabulation at higher levels. But they could not determine whether the machine at the local level counted the ballots accurately. And most e-voting systems are not designed to announce results at the polling-station level in any event.

As noted above, some electronic voting technologies produce a voter-verified paper record, which can be used to verify the individual machine's count or as a basis for a recount after the election is over. Unfortunately, these paper records offer little of use to would-be PVT implementers because it is unlikely that legal provisions will be made to give independent observers access to the paper ballots. In the absence of a paper record, or in the absence of access to those records, the PVT observers could not attest to the credibility or accuracy of the results at the sampled polling place.

Mainstream international election-monitoring organizations, including NDI, the Carter Center, the OSCE Office of Democratic Institutions and Human Rights (ODIHR), and the Organization of American States, have grappled with the challenges of monitoring e-voting.[156] They agree on the need to expand the scope of the observation. The OSCE, for example, suggests that election observers should address a range of issues that have not been part of tradi-

tional election observation, such as the reason the country or EMB has decided to use e-voting, procurement, certification and testing, system security, transparency and public confidence, and audits.[157] The Carter Center agrees that "observers must consider new types of information that would not necessarily have been included in traditional observation approaches, such as the contractual relationship between the election management body and the vendor."[158] The OAS adds vaguely, "In order to guarantee that the final vote tally reflects the will expressed by the voters, the results may be submitted for a security audit conducted by an independent outside party."[159]

The consensus recommendation that a broader scope of observation is necessary for e-voting also implies a need for greater attention earlier in the process than has been common. As the Carter Center points out: "Because many tests, audits, and preparations of the electronic voting equipment take place months in advance of election day, observation of electronic voting requires additional emphasis on long-term observation and documentary research."[160] As the Norwegian election observation expert Kare Vollan states it, the challenges are daunting:

> When assessing electronic voting in transition democracies it is therefore not sufficient to check if the system is working according to specifications, that it is reliable, has the right capacity and that it is protected from attacks and manipulation from the outside. It is also necessary that those organizing the elections check whether the system is being manipulated from the inside. . . . With electronic voting, the basic means of verification, the

> paper ballot, may be missing. The records of the voting are kept in a machine without direct access to the basic data, and the integrity of the process is dependent on the parties' trust in the machines. *For observer missions it will not be possible to carry out verification of the machines and the computer programs in a manner that can establish such trust.* This is the major challenge in observing electronic voting.[161]

The established election observation organizations seem to agree that they can only address whether reasonable processes and checks are in place. They cannot do the job of the EMBs or the testing and auditing organizations. It is first and foremost up to the EMB to secure the e-voting system. "An observation mission cannot perform all the tasks that the EMB should initiate or carry out," says Kare Vollan. "The observers will not have the capacity to validate the systems in detail. . . "[162] He warns that observers should take care to avoid giving the impression that they have certified the system, when they have not. He does agree with the recommendations of other election observation organizations that observers can check the acquisition process, the system's "overall functionality," the audit trails, and the extent of trust in the EMB.[163]

The Carter Center's approach to observing e-voting consists of two main components: a baseline survey and a special-purpose observation checklist. Observers complete the baseline survey before audits, tests, and the election day itself. The survey asks about certification and testing of voting equipment, security, and accessibility, among other issues. The checklist derives from the baseline survey and

guides the work of the observers during the election itself.[164]

These efforts, to some extent, have to substitute for a PVT. When considering whether to carry out a PVT for an election in which electronic voting technologies are used, election observers must decide whether, in the political and technological context of that particular election, there is any sufficient and credible substitute for observing the vote count.

Verifiable elements of the voting process that might serve to raise confidence in the credibility of the vote count fall under four overlapping categories: (1) hardware, (2) software, (3) data, and (4) processes. Observers should examine each of these elements in the context of the wider electoral environment to determine whether the electronic vote count is likely to be credible, and they should explain their verification efforts in their public statements and reports.

Hardware. Observers should assess whether the electronic voting machine hardware has been designed to avoid tampering. This includes, for example, consideration of whether the electronic voting machine is free of ports that would allow connection with an external device as well as of the track record of the vendor that produced the hardware and the circumstances under which the hardware was procured. It also includes consideration of the kind of checks that will be done to ensure that there is no damage to the hardware before, during, and after the election.

Software. Observers should address what security measures are in place to verify that software is not subject

to corruption or hacking. They should consider the track record of the vendor that produced the software and the circumstances under which the election software was procured as well as the source of funding for that software. Observers may need to acquire the information technology skills necessary to conduct procedures such as pre-election audits of the machines' code or so-called "hot audits" of the software from individual machines on the day of the election. The software's source code should be made available to experts from independent observer groups or a qualified independent body. This can reduce the likelihood that machines have pre-recorded data on them or that they have been tampered with in a way that alters the tabulation or transmission of voting results.

Data. Just as observers in a paper-based election might check to ensure that ballot boxes have not been stuffed before the opening of polls, observers should try to verify that recording devices are clear of pre-recorded information intended to change the machine's final vote count. But this requires significant technical skills as well as access to the e-voting machines. Observers should also verify that the counting results recorded by the voting machines match the number of actual paper ballots cast.

Procedures. Observers should examine procedures before, during, and after election day for opportunities to tamper with the hardware, software, or vote count data. Thus, they should consider how electronic voting machines are stored, transported, and secured before, after, and on election day. They should consider who has access to the machines and when, and the means by which the vote count

data are transmitted to the election authority after the polls have closed.

Need for Expertise

The complexity of electronic voting machines and the highly specialized knowledge of information technology required to assess those machines means that effective observation requires technical capacity far beyond that of most international or domestic EMOs. To observe elections using e-voting, election-monitoring organizations will likely need to acquire the information technology skills necessary to conduct or at least oversee procedures such as source code audits, voting machine tests, and "hot audits" of the software on the day of the election. Election observation teams will need to include IT experts specializing in electoral technology standards. The complexity of electronic voting machines and knowledge of information technology needed to assess their use dramatically increases the level of technical capacity required to carry out effective monitoring, including a credible PVT.

Election forensics and postelection statistical methods may have a role to play in addressing the challenges that e-voting poses for election observation and vote count verification. The move toward e-voting may increase the opportunities for postelection statistical analysis. With the growing use of e-voting, disaggregated data might be made available more regularly and more quickly. If so, postelection analyses might be completed much more quickly after election day, perhaps in time to provide information to help guide investigations of complaints about the vote count and to suggest whether and where to conduct audits of the re-

sults. For this opportunity to be realized, of course, there will have to be greater consensus about the validity of statistical methods and much greater willingness on the part of EMBs in developing democracies to make polling-station-level election results available more quickly.

Absence of a PVT in Venezuela

Venezuela used e-voting extensively in the 2004 referendum in Venezuela on Chavez's continued rule, and the e-voting itself became controversial. Notwithstanding the use of e-voting, however, a PVT might have helped resolve the controversy about the results.

Given the contentious politics leading up to referendum, it was presumed that a PVT (quick count) would be important to verify the accuracy of the vote count. International donors and democracy promotion organizations provided both funding and technical assistance for a PVT to a coalition of election-monitoring organizations well in advance of the eventual referendum. Unfortunately, the local organizations ultimately did not carry out the PVT in any event. This left international observers without any effective means of overseeing the vote count, and, as discussed in Chapter 4, later attempts to substitute other vote count verification mechanisms only added to postelection confusion. The results of public opinion research shifted dramatically in the final weeks of the campaign. An exit poll that pointed to an opposition victory was evidently methodologically flawed. A postelection audit of the vote count buttressed the official tally, but the election commission's participation in the exercise tainted the exercise. A study per-

formed by expert statisticians suggested fraud, but the authors were found to be opposition activists.

Venezuela's electronic voting system would have permitted a PVT, however, and thus the use of this technology had little if anything to do with the tactics available to election observers. The voting system provided an audit trail, which permitted the voters to verify their own ballot and allowed monitors after the fact to review the votes cast and the tallies made. The fact that monitoring groups failed to do so was a failure of organization and execution, not of the electronic system itself. Once the vote count controversies developed, the electronic system became a convenient target for opposition complaints, which hurt public confidence in the system. But in the absence of a neutral count verification system, the opposition could not prove wrongdoing. The absence of any solid verification of alleged fraud led to an eventual, albeit grudging, acceptance of the official results. But many in Venezuela and in the international community remained convinced that the victory was tainted. This was both unfortunate and probably unnecessary; a well-executed PVT might have proven the point one way or another.

E-Voting and PVTs

If results are available at the local level, the careful verification that e-voting procedures have been properly implemented and appropriate checks are in place might provide a sufficient level of confidence in the integrity of the machine counting process to conduct a credible PVT. Even in the absence of a PVT, such checks, as recommended by

The Carter Center, NDI, OSEC/ODIHR and others, should increase confidence in the absence of a PVT.

Electronic voting technologies pose challenges to VCV but are not necessarily strict barriers to observation or VCV implementation. Rather they should serve as an impetus to further methodological innovation. PVTs cannot check the validity of the local-level machine count. But, if local results are available and are collected from a valid sample, PVTs can at least verify whether there has been manipulation in the higher level tabulation process. Thus, while PVTs certainly face additional obstacles in elections when electronic rather than paper votes are cast, even when e-voting is used they remain relevant as a means of deterring or detecting tabulation fraud

Improving Coordination among Donors, Implementers, and Experts

The experiences of Azerbaijan, Haiti, Indonesia, Kenya, Macedonia, Pakistan, Ukraine, Venezuela, and elsewhere in recent years raise important questions about the appropriateness and effectiveness of different kinds of vote count verification techniques. To continue to deter or be able to detect manipulation of the vote counting process, election-monitoring organizations must continue to maintain the discipline of rigorous, robust verification of election results, and they must adapt to new technological and political challenges.

Election management bodies, international assistance agencies, media outlets, democracy assistance organizations, and even political parties have differed in their pref-

erences about VCV techniques. International organizations and experts have sometimes disagreed sharply about which particular vote count verification techniques are appropriate and effective and under which circumstances. They have debated the merits of comprehensive PVTs as compared to sample-based ones and have disagreed over the fundamental wisdom of applying randomization to PVT efforts. In some countries, development agencies have simultaneously sponsored PVTs and exit polls that have worked at cross purposes. Different verification methods compete for resources and attention. There is a risk of duplication and waste of resources. Different experts have offered fundamentally conflicting advice to election administrators and political leaders in transition countries. Foreign advisers, experts, and implementing organizations have their own interests in encouraging the use of certain techniques. These disagreements have the potential to cause confusion that might add to the uncertainty in tense political situations. These differences of opinion and new technological challenges threaten the international community's ability to effectively encourage and monitor democratic elections.

Although international organizations, donors, and advisors share the same goals for elections in new and emerging democracies, they sometimes work against one another. It is critically important for the relevant international organizations and experts to consider carefully the issues involved in designing, implementing, interpreting, and assessing vote count verification exercises and to attempt to agree on which vote count verification techniques are appropriate in which circumstances.

In particular, PVTs and exit polls may contradict each other or confuse stakeholders. Exit polls sponsored by international groups may distract attention from PVTs conducted by domestic election-monitoring organizations. In addition to potential confusion, this does little to help build the capacity and credibility of legitimate, nonpartisan civil society organizations. Moreover, as we have discussed, exit polls may not be reliable in less-than-free political environments. Indeed, if the political climate in a given country is sufficiently free and open to permit reliable exit polling, PVTs—which, as we have said, tend to be more expensive and difficult to organize—are probably not necessary. Where both PVTs and exit polls exist, the results of a reliable PVT should take precedence for vote count verification, and interested parties should look to exit polls primarily for insights about voter motivation as opposed to verification.

Greater international cooperation is needed to consider the appropriate circumstances for PVTs, exit polls, and other tactics to assess the legitimacy of vote counts in transitional or postconflict elections. Variables in such a calculus will include the available budget, the salience of the election, the size and complexity of the country, the nature of the electoral system, the state of political development, and the capability of domestic civil society organizations.

To make a continuing contribution to combating election fraud, PVTs and similar verification efforts must be publicly explained and well understood by authorities and international advisors. New techniques may be required, legitimate concerns must be better addressed, and international actors in the democracy field must try to learn from and cooperate with each other. Better coordination among

donors and implementing organizations is essential to ensure the continued effectiveness of vote count verification in controversial elections.

In many cases, because of the international community's lack of coordination and misunderstanding of the appropriate role and value of PVTs, such efforts have been misunderstood, ineffectively utilized, or dispensed with entirely in important elections. For PVTs to continue to make real contributions to combating election fraud and promoting democracy, the international community and domestic monitoring groups must possess a fuller understanding of the benefits and drawbacks to conducting PVTs in various political contexts.

Toward Better Choices about Vote Count Verification

After review of the current academic literature, case studies, and direct experience in dozens of countries over the last 25 years, we conclude that a properly designed and executed sample-based PVT (or quick count) is the only definitive vote count (tabulation) verification mechanism. Other methodologies risk unacceptable inaccuracies. Recent experience has raised important questions about the appropriateness and effectiveness of different kinds of vote count verification techniques.

Public opinion research, if properly designed and executed, can be an accurate gauge of voter choices at a moment in time, but even at the national level and even if conducted the day of the election, it cannot be the legitimate basis for an assertion of vote count fraud. Thus, public

opinion polling is generally inappropriate as a vote count verification technique.

Exit surveys rely on limited interviews in small cluster samples and, in developing countries, cannot rely on known electoral history (bellwether polling stations). The political climate and the survey mechanism affect responses to an essentially unknown and therefore unacceptable degree. Their accuracy in developed country elections is measured against official results, but in the developing world the intent is the opposite, namely, to measure the accuracy of the official count against the exit survey. The international community cannot reasonably rely on this method to call results announced by election officials into question.

Postelection statistical analysis, including increasingly sophisticated forms of "election forensics," can establish hypotheses and inferences, but this kind of analysis is very far from being able to assert definitive cause and effect. Turnout and performance anomalies—even a pattern of such anomalies—may be suspicious, but little more can legitimately be claimed. Statistical methods still need further study, testing, and validation. Postelection statistical analysis, however, may indicate places or problems worthy of further investigation and may provide good markers for system reforms and future observation.

Comprehensive tabulations, which attempt to aggregate 100 percent of the locally counted results, and exit polls, which draw inferences from very small, targeted samples of voter responses, both can provide reliable, valuable information in appropriate circumstances. Statistically based PVTs, however—which draw on much larger sample sizes

than exit polls and are based on actual results like comprehensive counts—will continue to be important in transitional societies lacking a history of successful polling or a fully stable, secure political environment.

PVTs tend to be more expensive than exit polls and other VCV methods and at least as difficult to administer as exit polls, if not more so. On the other hand, as we have discussed, PVTs are more accurate and provide greater credibility than other methods and they can be at least as fast, if not faster, than exit polls. The reliability and accuracy of postelection statistical methods, in contrast, are essentially unknown, or at least unproven. And such postelection methods are much slower; currently, they generally cannot provide information while the issues about election results are still politically relevant.

Vote count verification continues to evolve in response to new challenges. VCV techniques, for example, can be used to conduct voter registration audits to verify the quality of voter registration lists. Technologies such as cell - phone text messaging may provide a more efficient means of collecting vote count data, but serious difficulties remain. The increasing use of electronic voting has greatly complicated existing means of vote count verification and posed challenges to the successful use of PVTs. The challenge of improving coordination, and reducing institutional competition, among development agencies, implementers, EMOs, and experts remains highly relevant.

Vote count verification will continue to be a complicated endeavor. Funders and implementers need to make sometimes complex judgments about the choice of method,

scale, timing, partners, funding level, sample design, statistical interpretation, accuracy, and use of the results. Relevant expertise is essential to VCV design, implementation, and analysis. With proper care, vote count verification can be even more rigorous and effective and can continue to play an essential role in ensuring the integrity of elections around the world.

[1] Eric Bjornlund, *Beyond Free and Fair: Monitoring Elections and Building Democracy* (Washington, DC and Baltimore: The Woodrow Wilson Center Press and Johns Hopkins University Press, 2004), 279-88.

[2] Larry Diamond, "The Democratic Rollback: The Resurgence of the Predatory State," *Foreign Affairs* (March/April 2008). Similarly, Thomas Melia, previously of Freedom House and now Deputy Assistance Secretary of State, laments a "global political recession." E.g., Fred Hiatt, "Around the World, Freedom is in Peril," *Washington Post,* July 5, 2010, http://www.washingtonpost.com/wp-dyn/content/article/2010 /07/04/AR2010070403849.html.

[3] Arch Puddington. "Freedom in the World 2010: Erosion of Freedom Intensifies," *Freedom House,* January 12, 2010 report accessed on September 27, 2010, http://www.freedomhouse.org/template.cfm ?page=130&year=2010.

[4] Bjornlund, *Beyond Free and Fair*, 279-88.

[5] Walter R. Mebane, Jr., "Election Forensics: Statistical Interventions in Election Controversies" (paper prepared for presentation at the 2007 Annual Meeting of the American Political Science Association, August 28, 2007), 1, available at http://www-personal.umich.edu/ ~wmebane/apsa07.pdf.

[6] Jimmy Carter, interview with Eric Bjornlund, July 16, 2003, quoted in Bjornlund, *Beyond Free and Fair*, 280.

[7] "Exit Polls: Yanukovych Wins Ukraine Election," *Kyiv Post*, February 7, 2010, http://www.kyivpost.com/news/politics/detail/ 58894/.

[8] Melissa Estok, Neil Nevitte, and Glenn Cowan, *The Quick Count and Election Observation: An NDI Handbook for Civic Organizations and Political Parties* (Washington: National Democratic Institute for International Affairs, 2002), 59.

[9] Parts of section are adapted from Bjornlund, *Beyond Free and*

Fair, 280-81.

[10] Walter R. Mebane, Jr., "Evaluating Voting Systems to Improve and Verify Accuracy" (paper prepared for presentation, 2007 Annual Meeting of the American Association for the Advancement of Science, San Francisco, February 16, 2007), 1. See also, The Carter Center and Democracy International, "Report on Roundtable on Vote Count Verification" (conference report, March 26, 2007).

[11] This section is adapted from Bjornlund, *Beyond Free and Fair*, 215, 281-82.

[12] Larry Garber and Glenn Cowan, "The Virtues of Parallel Vote Tabulations," *Journal of Democracy* 4, no. 2 (April 1993): 95–6.

[13] Practitioners, donors, and commentators have not maintained a rigorous distinction between the terms "parallel vote tabulation" and "quick count." In some regions and countries, the term "parallel vote tabulation" refers to a sample-based verification exercise, and the term "quick count" connotes a comprehensive tabulation. In other places, the term "quick count" has been used when the purpose of the exercise was to rapidly project results after the close of polls, rather than to later verify official results. Even though experts from NDI invented and named PVTs, NDI itself used the term "quick count" in its handbook on the subject: Estok, Nevitte, and Cowan, *The Quick Count and Election Observation*. Accordingly, following the practice of the principal implementers, we use the two terms here interchangeably.

[14] Michael Dobbs, "U.S. Advice Guided Milosevic Opposition," *Washington Post*, December 11, 2000, A1.

[15] Sarah E. Mendelson, "Democracy Assistance and Political Transition in Russia," *International Security* 25, no. 4 (Spring 2001): 85.

[16] This discussion is adapted from Bjornlund, *Beyond Free and Fair*, 283-84.

[17] Bjornlund, *Beyond Free and Fair*, 283.

[18] This section is adapted from Bjornlund, *Beyond Free and Fair*, 290-93.

[19] The PVT advocates were proved correct about the potential for problems in the tabulation of results; after the elections, claims of fraud (generally unsupported) in the ballot tabulation delayed certification of the results for weeks and seriously threatened the credibility and acceptability of the entire process.

[20] Hank Valentino, "Joint Operations Media Center Opening Remarks" (speech, May 18, 1999), cited in Bjornlund, *Beyond Free and Fair*, 289.

[21] Bjornlund, *Beyond Free and Fair*, 289.

[22] See Jamal Jafari, "Mugabe's Revenge: Halting the Violence in Zimbabwe (Strategy Paper)," *Enough,* May 12, 2008, http://www.enoughproject.org/publications/mugabes-revenge-halting-violence-zimbabwe; Nelson Banya, "Zimbabwe Presidential Vote Count Complete," *Reuters*, April 28, 2008; Economist Intelligence Unit, "Country Report: Zimbabwe," *Economist Intelligence Unit,* June 2008.

[23] Zimbabwe Election Support Network, "ZESN Poll Projections On March 29 Presidential Elections," Zimbabwe Election Support Network, http://www.zesn.org.zw/newsflash_view.cfm?nfid=29.

[24] Electoral Institute for the Sustainability of Democracy in Africa (EISA), "Zimbabwe: 2008 Post-Election Parallel Vote Tabulations," Electoral Institute for the Sustainability of Democracy in Africa, Updated April 16, 2008, http://www.eisa.org.za/WEP/zim2008postb.htm.

[25] Ibid.

[26] Sebastian Nyamhangambiri and Wayne Mafaro, "Tsvanigarai Says he beat Mugabe," *ZimOnline*, April 1, 2008, http://www.zimonline.co.za/Article.aspx?ArticleId=2974.

[27] EISA, "Zimbabwe: 2008 Post-Election – Rising Tension and Legal Maneuvers," EISA, August 25, 2008, http://www.eisa.org.za/WEP/ zim2008postc.htm.

[28] Nelson Banya, "Zimbabwe Presidential Vote Count Complete," *Reuters,* April 28, 2008.

[29] Michael Wines, "New Signs of Mugabe Crackdown in Zimbabwe," *New York Times*, April 4, 2008; National Democratic Institute for International Affairs, "NDI Staff Member Held Illegally for Six Days is Released by Zimbabwe Authorities" (press release, April 9. 2008).

[30] See Banya, "Zimbabwe Presidential Vote Count Complete"; Wines, "New Signs of Mugabe Crackdown in Zimbabwe"; National Democratic Institute, "NDI Staff Member Held Illegally for Six Days is Released by Zimbabwe Authorities"; Jamal Jafari; Human Rights Watch, *Bullets for Each of You: State-Sponsored Violence since Zimbabwe's March 29 Elections* (New York: Human Rights Watch, 2008), http://www.hrw.org/node/40484.

[31] Electoral Institute for the Sustainability of Democracy in Africa, *EISA Election Observer Report Zimbabwe*, (Johnannesburg: EISA, 2008, http://www.eisa.org.za/PDF/zimomr08.pdf; EISA, "Zimbabwe: 2008 Post-election parallel vote tabulations."

[32] Garth Theunissen. "Zimbabwe Opposition Accepts Runoff Election with Robert Mugabe," *Bloomberg*, May 10, 2008, http://www.bloomberg.com/apps/news?pid=newsarchive&sid=aaXeM2ZRUhPQ&refer=home.

[33] *EISA Election Observer Report Zimbabwe*, 57.

[34] Ibid, 70.

[35] Economist Intelligence Unit. "Country Report: Zimbabwe," *Economist Intelligence Unit,* September 2008.

[36] J. David Kennamer, "The Polling Business: Argentina: Polling in an Emerging Democracy," *The Public Perspective* 6 (October/November 1995), 62.

[37] E.g., Douglas Schoen, *The Power of the Vote: Electing Presidents, Overthrowing Dictators and Promoting Democracy Around the World* (New York: HarperCollins, 2007), xvii, 331. The late Warren Mitofsky, who introduced exit polls to the media for CBS News in 1967, explains, "Exit polls . . . have been used more than once to dis-

credit elections in emerging democracies where ruling parties were expected to falsify the vote. They can also be used to validate outcomes where there has been an honest count." Warren Mitofsky and Joe Lenski, "Adventure in Baku: Exit-Polling Azerbaijan: A Public Opinion Pros Special Report," National Council on Public Polls, http://www.ncpp.org/?q=node/77.

[38] Steve Freeman and Joel Bleifuss, *Was the 2004 Presidential Election Stolen? Exit Polls, Election Fraud, and the Official Count* (New York: Seven Stories Press, 2006), back cover.

[39] Jimmy Carter, interview with Eric Bjornlund, July 16, 2003, cited in Bjornlund, *Beyond Free and Fair*, 287.

[40] Countries that prohibit the release of opinion poll results until after the close of polling include Albania, Bulgaria, Canada, Czech Republic, France, Italy, Montenegro, Peru, Russia, and Singapore. South Africa and Singapore ban exit polls altogether. Article 19 Global Campaign for Free Expression, "Comparative Study of Laws and Regulations Restricting the Publication of Electoral Opinion Polls," (report, January 2003), 4-9, http://www.article19.org/pdfs/publications/opinion-polls-paper.pdf

[41] "Ecuador Court Bans Quick Counts, Exit Polls for Assembly Vote," *Dow Jones*, September 21, 2007.

[42] Executive Order of the President, "On Improvement of Election Practice in the Republic of Azerbaijan," Presidential Decree, May 11, 2005.

[43] Election Law of Macedonia, *Official Gazette of the Republic of Macedonia*, no. 42/2002, published June 25, 2002, art. 3(2) (unofficial translation by IFES).

[44] International Republican Institute, "IRI Sponsored First-Ever Exit Poll in Macedonia Shows SDSM Coalition Leading" (press release, September 16, 2002).

[45] This discussion of exit polling in Macedonia in 2002 is adapted from Bjornlund, *Beyond Free and Fair*, 284-88.

[46] Election Law of Macedonia, art. 3(2).

[47] Notes from Press Conference, Skopje, Macedonia, September 16, 2002, cited in Bjornlund, *Beyond Free and Fair*, 286.

[48] Williams and Associates, "Exit Poll Analysis: Republic of Macedonia 2002 Parliamentary Elections" (report posted on IRI Web site, November 2002), 4, http://www.iri.org/explore-our-resources/public-opinion-research/public-opinion-polls#four.

[49] IRI, "Statement: Observation Mission to the 2002 Macedonia Parliamentary Elections" (election statement, September 16, 2002).

[50] Bjornlund, *Beyond Free and Fair*, 286.

[51] H. Kaan Nazli, "Azerbaijan," *Nations in Transit 2008: Democratization from Central Europe to Eurasia* (New York: Freedom House, 2008), 98, 102.

[52] U.S. Agency for International Development, "US Government-Supported Exit Poll Update," (press release, September 26, 2005), http://azerbaijan.usembassy.gov/uploads/images/7379zxytH5cq4zFkaIPwTA/PR-092605-Eng.pdf.

[53] Warren Mitofsky introduced exit polling at CBS News in 1967 and later founded Voter News Service, the consortium of major television networks that provided projections and analysis based on exit polls for the U.S. presidential elections. "His missteps during the 2004 presidential elections—in which, based on his research, the exit polls . . . showed Kerry in the lead throughout Election Day—has called into question his methodology." Daria Vaisman, "Is an American Pollster Helping to Steal Azerbaijan's Election?" *The New Republic*, November 3, 2005.

[54] Khadija Ismayilova, "Opinion Still Divided Over Azerbaijani Exit Polls," Eurasianet, November 5, 2005, http://www.eurasianet.org/azerbaijan/news/exitpoll_20051105.html.

[55] British Helsinki Human Rights Group, "Apathy NOT Fraud Undermines Azerbaijan's Parliamentary Election: Preliminary Report" (election report, November 7, 2005).

[56] Khadija Ismayilova, "Azerbaijan: Debate Over Exit Polls Threatens Confidence in Election Results," Eurasianet.org, October 4, 2005, http://www.eurasianet.org/departments/insight/articles /eav100505.shtm l.

[57] Mitofsky and Lenski (see n. 37).

[58] Ibid.

[59] Vaisman (see n. 53).

[60] Author conversation with participant in exit polls.

[61] Mitofsky and Lenski.

[62] Ismayilova, "Azerbaijan: Debate Over Exit Polls Threatens Confidence in Election Results."

[63] Vaisman.

[64] Mitofsky and Lenski. Mitofsky himself reported later that the supervisors could not find interviewers where they should have been at some sample polling places. There were discrepancies in the reports of results from the interviewers and supervisors. Moreover, "The supervisors' reports in many districts were questionable." Explained Mitofsky later, "We learned of the problem almost immediately, as the computer system would not accept a second report from a precinct without a telephone supervisor interceding and canceling the first. . . . Once the problem was discovered, the interviewers were re-contacted to verify their vote reports. We did not project winners for the worst of these districts." Mitofsky and Lenski.

[65] U.S. Embassy, "United States Supports Exit Poll in Azerbaijan" (news release, July 25, 2005) available at http://azerbaijan.usembassy .gov/press_releases_2005.html.

[66] U.S. Agency for International Development, "Azerbaijan Exit Poll, U.S. Government–Sponsored Exit Poll Update" (news release, November 1, 2005).

[67] U.S. Agency for International Development/Caucasus, "Solicitation, Offer and Award," Solicitation No. 112-05-012 (request for pro-

posals for Azerbaijan Exit Polls), Section B.1 (2) (emphasis added).

[68] Mitofsky and Lenski.

[69] Mitofsky and Lenski. "Our condition for conducting the exit polls was that we would release our results to the media soon after poll closing. We said the sponsor could see our results before we posted them, but we would choose what, where, and when to report. So much for good intentions!"

[70] Author interview with participant in exit poll project.

[71] Mitofsky and Lenski. The USAID-PA Consulting poll was not carried out in Districts 9, 20, 21, 31, and 36, which were identified as opposition strongholds. Mitofsky had the opposition winning in Districts 9 and 31 and a close race in District 21.

[72] Mitofsky and Lenski, District 122 did not have any voting, and the election commission reversed its own declaration of a winner in District 9. "Somehow, Saar got the same winner as the election commission even when our exit poll, and sometimes the USAID exit poll, showed a different candidate." Mitofsky and Lenski.

[73] This discussion of Ukraine is adapted from Eric Bjornlund, "Improving Vote Count Verification in Transitional Elections," *Electoral Insight* 8*,* no. 1 (March 2006): 21-22.

[74] Editorial, "Democracy for Ukraine," *Washington Post*, December 2, 2004, A34.

[75] OSCE, "International Election Observation Mission Presidential Election (2nd Round) Ukraine 21 November 2004, Statement of Preliminary Findings and Conclusions" (Kyiv, Ukraine, November 22, 2004).

[76] National Democratic Institute, "Preliminary Statement of the NDI International Election Observation Delegation to Ukraine's November 21, 2004 Second-Round Presidential Election" (Kyiv, Ukraine, November, 23, 2004) (emphasis added).

[77] European Network of Election-Monitoring Organizations, "Statement on 2004 Presidential Elections in Ukraine" (October 31-November 21, 2004) (emphasis added).

[78] Glenn Kessler, "Powell, Russian Clash on Ukraine," *Washington Post*, December 8, 2004, A13, http://www.washingtonpost.com/ac2/wp-dyn/A42522-2004Dec7?language=printer.

[79] More recently, in the February 2010 presidential runoff, early exit polls pointed to a victory for Viktor Yanukovych, the loser of the 2004 elections that precipitated the Orange Revolution over former prime minister,Yulia Tymoshenko, one of the past leaders of the Orange forces. The early predictions caused tension among candidates. According to one report, Tymoshenko "dismissed the exit polls as 'only sociology' and said that the gap [between her and her opponent] was within the margin of error." "Exit Polls hand Yanukovich close win," *Financial Times*, February 5, 2010, http://www.ft.com/cms/s/0/1485ecc0-12a2-11df-9f5f-00144feab49a.html?nclick_check=1; Gregory Feifer, "Yanukovych Heads to Victory in Ukraine Presidential Election," Radio Free Europe Radio Liberty, February 8, 2010, http://www.rferl.org/content/Ukraine_Votes_In_Presidential_Runoff/1950929.html. Thus, it appears that exit polls continue to create controversy in Ukraine, even as they serve as an imprecise method of VCV.

[80] Mike McIntire and Jeffrey Gettleman, "A Chaotic Kenya Vote and a Secret U.S. Exit Poll," *New York Times*, January 31, 2009.

[81] European Union Election Observation Mission, *Kenya Final Report: General Elections 27 December 2007* (postelection report, April 3, 2008), http://www.eueomkenya.org/Main/English/PDF/Final_Report_Kenya_2007.pdf.

[82] Ted Dagne, "Kenya: The December 2007 Elections and the Challenges Ahead," Congressional Research Service, updated April 4, 2008, http://fpc.state.gov/documents/organization/104721.pdf.

[83] McIntire and Gettleman.

[84] International Republican Institute, "IRI Statement on Kenya Exit Poll," (press release, February 7, 2008), http://www.iri.org/news-events-press-center/news/iri-statement-kenya-exit-poll.

[85] McIntire and Gettleman.

[86] Ibid.; Shashank Bengalie, "Kenya Winner Lost, U.S. Poll Indicates, *McClatchy/Tribune*, July 9, 2008, http://www.mcclatchydc.com /2008/07/08/43442/kenyas-president-lost-disputed.html.

[87] McIntire and Gettleman; Memorandum, dated July 7, 2008, from Bob Carpenter at American Viewpoint to Scott Pool at IRI, http://www.iri.org/sites/default/files/7-7-08-memo-from-Bob-Carpenter-American-Viewpoint.pdf. The other review was conducted by Wilson Research Strategies.

[88] Kevin J. Kelley, "U.S.-Funded Exit Poll Says Raila Won Elections," *The Daily Nation*, July 10, 2008, http://www.nation.co.ke/ News/-/1056/435972/-/tifto9/-/index.html

[89] McIntire and Gettleman.

[90] National Democratic Institute for International Affairs, *The October 1990 Elections in Pakistan: Report of the International Delegation* (Washington: National Democratic Institute, 1991).

[91] Ibid., 98.

[92] Mikhail Myagkov, Peter C. Ordeshook, and Dimitri Shakin, *The Forensics of Election Fraud: Russia and Ukraine* (Cambridge: Cambridge University Press, 2009), 23.

[93] Ibid., 31.

[94] Ibid., 159-62; The Carter Center and Democracy International, "Roundtable on Vote Count Verification" (see n. 10); Mikhail Myagkov, Peter C. Ordeshook and Dimitri Shakin. "Fraud or Fairytales: Russia and Ukraine's Electoral Experience." *Post-Soviet Affairs* 21, no. 2 (April-June 2005): 120-26.

[95] Myagkov et al, "Fraud or Fairytales"; The Carter Center and Democracy International, "Roundtable on Vote Count Verification."

[96] Myagkov et al., *The Forensics of Election Fraud*, 31.

[97] Ibid., 32.

[98] Ibid, 159-62; Mikhail Myagkov et al, "Fraud or Fairytales," 120-21.

[99] Myagkov et al., *The Forensics of Election Fraud*, 138-62; Myagkov et al, "Fraud or Fairytales."

[100] Mikhail Myagkov et al, "Fraud or Fairytales," 129-30.

[101] The Carter Center and Democracy International, "Roundtable on Vote Count Verification."

[102] Myagkov et al, *The Forensics of Election Fraud*, 10-11.

[103] Jonathan N. Wand et al., "The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida," *American Political Science Review* 94, no. 4 (December 2001): 793-810, http://www-personal.umich.edu/~wmebane/butterfly.pdf.

[104] Ricardo Hausmann and Roberto Rigobon, "In Search of the Black Swan: Analysis of the Statistical Evidence of Electoral Fraud inVenezuela" (September 3, 2004), available at http://www.hks .harvard.edu/fs/rhausma/new/blackswan03.pdf.

[105] The Carter Center, *The 2004 Venezuelan Recall Referendum* (Atlanta: The Carter Center, undated), 128-33; Jennifer L. McCoy, "The 2004 Venezuelan Recall Referendum," *Taiwan Journal of Democracy* 2, no. 1, 69-70.

[106] Mark Weisbrot, David Rosnick, and Todd Tucker, "Black Swans, Conspiracy Theories, and the Quixotic Search for Fraud: A Look at Hausmann and Rigobon's Analysis of Venezuela's Referendum Vote," Center for Economic and Policy Research, September 20, 2004.

[107] Mebane, "Evaluating Voting Systems to Improve and Verify Accuracy," 1 (see n. 10). Also presented at The Carter Center and Democracy International, "Roundtable on Vote Count Verification."

[108] Mark J. Nigrini, "I've Got Your Number: How a Mathematical Phenomenon Can Help CPAs Uncover Fraud and Other Irregularities," *Journal of Accountancy*, May 1999, http://www.journalofaccountancy .com/Issues/1999/May/nigrini.htm.

[109] Walter F. Mebane Jr., "Election Forensics: The Second-Digit Benford's Law Test and Recent American Presidential Elections," in Michael Alvarez, Thad E. Hall, and Susan D. Hyde, eds., *Election*

Fraud: Detecting and Deterring Electoral Manipulation (Washington: Brookings Institution Press, 2008), 164. Benford's distribution applies to data when it "results from random variables taken from divergent sources" that have gone through some basic mathematical formula that is the same throughout the data set. Take for instance the primary real-world application of Benford's Law, forensic accounting. If an auditor is attempting to determine through statistical analysis if someone has been keeping fraudulent financial records, they will run a Benford's Law test on an accounts receivable ledger, whereby the two random divergent variables are number of items sold and price of the item, and the constant mathematical process is finding the product of the two. The resulting data set could be expected to follow Benford's distribution. In other words, the data needs to be suitably random and complex, while adhering to some identifiable mathematical process. Traditionally, the behavior of voters and the data sets they produce is not considered complex enough to adhere to Benford's Law, because the decision of the voter was reduced to essentially a coin flip. Mebane theoretically solved this dilemma by considering regional demographics, polls, and other indicators of voter behavior to determine the probability that a voter chooses one candidate or another. He then multiplied this variable by the probability that a certain voter would cast a vote, which he determined using expected turnout rates. This function results in a data set that is the product of a mathematical formula, not simply a heads or tails coin-flip, arguably making it complex enough to satisfy Benford's Law. Walter R. Mebane, Jr., "Election Forensics: Vote Count and Benford's Law" (paper prepared for Meeting of the Political Methodology Society, University of California, Davis, July 2006, 3-5, http://www-personal.umich.edu/~wmebane/pm06.pdf.

[110] Voting Rights Institute, Democratic National Committee, *Democracy at Risk: The 2004 Election in Ohio* (Washington, D.C.: Democratic National Committee, 2005); Anita Miller, ed., *What Went Wrong in Ohio: The Conyers Report on the 2004 Presidential Election*" (Chicago: Academy Chicago Publishers, 2005).

[111] Organization for Security and Cooperation in Europe, Office of Democratic Institutions and Human Rights *United States of America 2*

November 2004 Elections: OSCE/ODIHR Election Observation Mission Final Report, (OSCE Office for Democratic Institutions and Human Rights, March 31, 2005), available at http://www.osce.org/documents/odihr/2005/03/13658_en.pdf.

[112] Mebane, "Election Forensics: Statistical Interventions," 3 (see n. 5).

[113] Ibid.

[114] Walter F. Mebane Jr., "Election Forensics: The Second-Digit Benford's Law Test and Recent American Presidential Elections," 163, citing Walter R. Mebane Jr. and Michael C. Herron, "Ohio 2004 Election: Turnout, Residual Votes and Votes in Precincts and Wards," in Democratic National Committee Voting Rights Institute, ed., *Democracy at Risk: The 2004 Election in Ohio* (Washington: Democratic National Committee, June 2005).

[115] European Union Election Observation Mission, "Final Report: Mexico Presidential and Parliamentary Elections, 2 July 2006" (European Union Election Observation Mission, Mexico, 23 November 2006), Mexico City/Brussels, 46-47, cited in Mebane, "Election Forensics: Statistical Interventions," 4 (see n. 5).

[116] Mebane, "Election Forensics: Statistical Interventions," 3-5.

[117] People's Republic of Bangladesh Legislative Election of 1 October 2001, Psephos (Adam Carr's Election Archive) available at http://psephos.adam-carr.net/countries/b/bangladesh/bangladesh20011.txt.

[118] Jimmy Carter, "Postelection Statement by Former U.S. President Jimmy Carter on Bangladesh Elections, October 5, 2001," (postelection statement, 2005), cited in Mebane, "Election Forensics: Statistical Interventions."

[119] Mebane, "Evaluating Voting Systems to Improve and Verify Accuracy," 6 (see n. 10); See also, Mebane, "Election Forensics: Statistical Interventions."

[120] Mebane, "Election Forensics: Statistical Interventions," 6.

[121] Ibid.

[122] Walter R. Mebane, Jr., and Kirill Kalinin, "Electoral Fraud in Russia: Vote Counts Analysis using Second-digit Mean Tests" (paper prepared for presentation at the 2010 Annual Meeting of the Midwest Political Science Association, Chicago, IL, April 22-25), 1, http://www-personal.umich.edu/~wmebane/mw10B.pdf

[123] E.g., Walter R. Mebane, Jr., "Election Fraud or Strategic Voting? Can Second-digit Tests Tell the Difference?" (paper prepared for presentation at Political Methodology Society, University of Iowa, July 22–24, 2010), http://www-personal.umich.edu/~wmebane/pm10.pdf. Although not using the 2BL test specifically, Mebane also studied the House of Representatives election in Sarasota, Florida in 2006, where there was great controversy because of an unusually high proportion of "undervotes"— ballots cast by voters that did not make a choice in the House race (which was for the highest office on the ballot)— that probably changed the election outcome. He found that power failures and problems with the electronic ballots and touchscreen calibration of the machines correlate with the rate of undervotes, and concluded it is "unreasonable to discount the likelihood that mechanical failures contributed substantially to the high numbers of undervotes." Walter R. Mebane, Jr., "Machine Errors and Undervotes in Florida 2006 Revisited" (paper for the 2009 Convention of the Southern Political Science Association, January 5, 2009).

[124] Mebane, "Election Forensics: Statistical Interventions," 7.

[125] Ibid.

[126] Mebane, "Election Forensics" in Alvarez et al, 167.

[127] Ibid., 164.

[128] Ibid., 167.

[129] Ibid.

[130] Ibid., 164.

[131] Walter R. Mebane, Jr., "Election Forensics: The Second-digit Benford's Law Test and Recent American Presidential Elections" (re-

vised paper originally presented at the Election Fraud Conference, Salt Lake City, Utah, September 29–30, 2006), November 3, 2006, 2.

[132] Ibid., 16-17.

[133] This discussion of the audit in Afghanistan is adapted from Democracy International, *U.S. Election Observation Mission to Afghanistan Presidential and Provincial Council Elections 2009* (Washington: Democracy International, Revised and Updated August 2010), 39-42.

[134] Ibid., 39.

[135] Democracy International, *Election Observation Mission to Afghanistan Presidential and Provincial Council Elections 2009*, 3, 41.

[136] Myagkov et al, *Forensics of Election Fraud*, 2 (see n. 92).

[137] E.g., Estok, Nevitte, and Cowan, *The Quick Count and Election Observation*; World Association for Public Opinion (WAPOR), WAPOR Guidelines for Exit Polls and Election Forecasts (report, October 12, 2006), www.unl.edu/wapor/ISSC/ISSC%202006.doc; Myagkov et al., *The Forensics of Election Fraud*; Mebane, "Evaluating Voting Systems to Improve and Verify Accuracy" (see n. 10).

[138] McIntire and Gettleman.

[139] This section is adapted, in part, from Bjornlund, *Beyond Free and Fair*, 238-39.

[140] Robert A. Pastor, "Comment: Mediating Elections," *Journal of Democracy* 9, no. 1 (January 1998), 158, cited in Bjornlund, *Beyond Free and Fair*, 238.

[141] There are some notable exceptions to this. In Indonesia, for example, both Rector's Forum for elections in 1999 and LP3ES for elections in 2004 organized themselves specifically to conduct PVTs. Even in rare cases such as these, however, funders should still cultivate an awareness of budget practices and organizational capabilities through a direct relationship with the local VCV sponsor.

[142] LP3ES is Lembaga Penelitian, Pendidikan dan Penerangan

Ekonomi dan Sosial or the Institute for Social and Economic Research, Education and Information; Yappika is Aliansi Masyarakat Sipil untuk Demokrasi, or Civil Society Alliance for Democracy; and JAMPPI is Jaringan Masyrakat Pemantau Pemilu Indonesia or the People's Election Observation Network of Indonesia.

[143] Ian Schuler, "SMS as a Tool in Election Observation," *Innovations Case Narrative* 3, no. 2 (2008), 150.

[144] Ibid, 151.

[145] Ibid.

[146] Ibid, 150-51.

[147] "Monitoring/Observing By-Elections," Institute for Democracy in Education, http://www.iedafrica.org/section.asp?ID=44.

[148] Foundation for Democratic Progress, "FODEP PVT Consistent with Official Results" (press release, November 2, 2008), http://www.ndi.org/files/2414_zm_fodep_statmt-final_11032008.pdf (does not mention use of SMS); Anneryan Heatwole, "Election Monitoring, Citizen Reporting and Mobile Phones: An Interview with Ian Schuler," MobileActive.org (blog post, February 2, 2010), http://mobileactive.org/q-ian-schuler-election-monitoring-citizen-reporting-and-mobiles.

[149] Kare Vollan, "Observing Electronic Voting," NORDEM Report 15, Norwegian Resource Bank for Democracy and Human Rights, 2005, 4.

[150] Ibid., 8.

[151] E.g., Aviel D. Rubin, *Brave New Ballot: The Battle to Safeguard Democracy in the Age of Electronic Voting* (New York: Morgan Road Books, 2006).

[152] John Fund, *Stealing Elections: How Voter Fraud Threatens Our Democracy* (San Fancisco: Encounter Books, 2004), 118-20; National Research Council, *Asking the Right Questions About Electronic Voting* (Washington, D.C.: National Academies Press, 2006), 39-40. See, Vladimir Pran and Patrick Merloe, *Monitoring Electronic Technologies in Electoral Processes: An NDI Guide for Political Parties and Civic Or-*

ganizations (Washington: National Democratic Institute for International Affairs, 2007) for general information and policy recommendations on the broader issues raised by emerging election technologies.

[153] See Andrew Gumbel, *Steal this Vote: Dirty Elections and the Rotten History of Democracy in America* (New York: Nation Books, 2005), 251-73.

[154] Pran and Merloe, 72-74.

[155] Ibid., 58-62.

[156] Pran and Merloe; The Carter Center, *Developing a Methodology for Observing Electronic Voting* (Atlanta: The Carter Center, October 2007); Organization for Cooperation and Security in Europe, Office of Democratic Institutions and Human Rights (OSCE/ODIHR), "OSCE/ODHIR Discussion Paper in Preparation of Guidelines for the Observation of Electronic Voting," (OSCE, October 2008); Organization of American States, *Observing the Use of Electoral Technologies: A Manual for OAS Electoral Mission*, (OAS, undated); Kare Vollan (see n. 149).

[157] OSCE/ODIHR, *Observation of Electronic Voting*, 6.

[158] The Carter Center, *Developing a Methodology for Observing Electronic Voting,* 5.

[159] General Secretariat of the Organization of American States, *Observing the Use of Electoral Technologies: A Manual for OAS Electoral Observation Missions* (Washington: Organization of American States, 2010), 27

[160] The Carter Center, *Developing a Methodology for Observing Electronic Voting*, 5.

[161] Vollan (emphasis added), 4.

[162] Ibid., 16.

[163] Ibid.

[164] The Carter Center, *Developing a Methodology for Observing Electronic Voting*, 5.

ABOUT THE AUTHORS

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Eric Bjornlund is co-founder and principal of Democracy International. A lawyer and development professional, Mr. Bjornlund has designed, managed, and evaluated democratic development programs over two decades in more than 30 countries in Africa, Asia, Europe and Eurasia, and the Middle East. He has expertise across the full range of democracy and governance programs, including (1) elections and political processes (election monitoring, election systems, election administration, voter education, political party building); (2) governance (legislative strengthening, decentralization, civil-military relations); (3) civil society (civic education, advocacy, women's political empowerment); and (4) the rule of law (constitutional and legal reform, legal profession, anticorruption, human rights), as well as in evaluation methodology and survey research. Mr. Bjornlund is also Adjunct Assistant Professor at Georgetown University where he teaches classes on Democracy Promotion and Democratic Theory and on Post-conflict Stabilization and Political Reconstruction.

From 1989 to 2000, Mr. Bjornlund worked for the National Democratic Institute for International Affairs (NDI) in various senior positions in Washington and overseas, including as Senior Associate and Asia Director and as Country Director in Indonesia and Palestine (West Bank and Gaza). From 2000 to 2001, he was a Fellow at the Woodrow Wilson International Center for Scholars. In

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Mr. Bjornlund has written and spoken extensively about transitional and postconflict elections, democratization, legal reform, and international democracy promotion. He is author of *Beyond Free and Fair: Monitoring Elections and Building Democracy* (Wilson Center Press and Johns Hopkins University Press, 2004) as well as numerous book chapters, articles, essays, and reports. Mr. Bjornlund has testified on a number of occasions before the U.S. Congress as well as at the United Nations. He has spoken at conferences and universities throughout the world and has appeared often on television and radio programs as an expert commentator.

For four years earlier in his career, Mr. Bjornlund practiced corporate and international law at Ropes & Gray in Boston, Massachusetts, one of the largest law firms in the United States. He holds a Juris Doctor from Columbia University, a Master in Public Administration from John F. Kennedy School of Government at Harvard University, and a Bachelor of Arts *magna cum laude* from Williams College.

Glenn Cowan

Glenn Cowan is co-founder and principal of Democracy International. Over the past three decades, he has worked with government agencies, legislatures, political parties, candidates, civil society organizations, trade associations, and corporations in the U.S. and around the world on public opinion research, political organizing, advocacy, legislative processes, local government, election administration and monitoring, and research methodologies. Mr. Cowan has managed, evaluated, and advised on democracy and governance programs in 40 countries. He has advised the U.S. Agency for International Development, the U.S. State Department, the National Democratic Institute, the United Nations, The Carter Center, The Asia Foundation, and the Organization of American States. In the late 1980s, Mr. Cowan invented the path-breaking, sample-based parallel vote tabulation (PVT) election-monitoring methodology. He is co-author of *The Quick Count and Election Observation*, a manual on vote count verification.

Before founding Democracy International in 2003, Mr. Cowan served as Vice President and Washington Director of Opinion Dynamics Corporation, a national survey research firm. Before that, he was Managing Director of Public Strategies, Inc., a public affairs and public relations firm, and he served as Asia Regional Director at NDI from 1999 to 2000. Mr. Cowan managed a public affairs firm, the FMR Group (later Beckel Cowan, a Cassidy Company), from 1984 to 1998.

Mr. Cowan was a senior national staff member in the 1980 Carter and 1984 Mondale presidential campaigns and

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