Appendices & Methodology

This section is an addendum to Section 1, and provides a more in-depth look at issues pertaining to election administration data collection and analysis, including:

- The U.S. Election Assistance Commission's Election Administration and Voting Survey.
- The Census Bureau's Current Population Survey, Voting and Registration Supplement.
- The Survey of the Performance of American Elections.
- Pew's *Being Online Is Not Enough* and *Being Online Is Still Not Enough* reports.
- The residual vote rate.
- Analysis of the Voting Age Population, Voting Eligible Population, and turnout for every presidential election since 1960.

Election Administration and Voting Survey

The Election Administration and Voting Survey (EAVS) is conducted every two years by the U.S. Election Assistance Commission (EAC) to gather data from states and counties throughout the United States, including the District of Columbia and four territories (American Samoa, Guam, Puerto Rico, and the Virgin Islands). The survey was first administered after the 2004 election, and was administered again in 2006, 2008, and 2010. The dataset contains statistics reported by county for all states in 2004 and 2006. In 2008, the EAVS began gathering data at the municipality level for the following New England states where elections are administered locally: Connecticut, Maine, Massachusetts, New Hampshire, and Vermont.

The Help America Vote Act (HAVA) provides that "the Commission shall conduct and make available to the public studies regarding [a series of election administration issues], with the goal of promoting methods of voting and administering elections which (1) will be the most convenient, accessible, and easy to use for voters, including members of the uniformed services and overseas voters, individuals with disabilities, including the blind and visually impaired, and voters with limited proficiency in the English language; (2) will yield the most

accurate, secure, and expeditious system for voting and tabulating election results; (3) will be nondiscriminatory and afford each registered and eligible voter an equal opportunity to vote and to have that vote counted; and (4) will be efficient and cost-effective for use."

HAVA lists 18 subjects about which the EAC shall issue reports, including "methods and mechanisms of election technology and voting systems," "methods of voter registration," "methods of conducting provisional voting, "methods of ensuring the accessibility of voting" and "best methods for establishing voting system performance benchmarks, expressed as a percentage of residual vote in the Federal contest at the top of the ballot."[94]

The EAVS also helps the EAC carry out its mandate to gather data about the functioning of the National Voter Registration Act (NVRA) and the Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA).

Datasets and reports related to the EAVS, including the Statutory Overview described in Section 1 of this report, can be found at the following EAC Web site: http://www.eac.gov/research/election_administration_and_voting_survey.aspx.

The EAVS has struggled to achieve full compliance from states and localities reporting all the information requested on the survey instrument. Although there was a significant difference in the design of the questionnaire between 2006 and 2008, the 2010 instrument remained predominantly unchanged from 2008 in an effort to improve the survey's "item response rate"—the rate at which those who returned the survey completed each item.[95]

Here we discuss efforts undertaken in this report to deal with item nonresponse to the EAVS survey,[96] along with data anomalies that appeared due to factors such as typographic errors, computational mistakes, and misunderstanding about what data were being requested. Because the EAVS contains so many questions, it is not possible to address item nonresponse for all questions. Instead, we focus on the 15 measures of election-administration workflow discussed in Section 1. The same issues we discuss here would likely face anyone analyzing other items in the EAVS.

Data Cleaning and Coding

Although the EAVS project has had a problem with "unit nonresponse" (states or localities not reporting data), Tables 1 and 2 show that unit nonresponse rates have declined over time, with most counties now reporting basic data.

Nonetheless, there are still missing data for each item on the 2008 survey from some counties. Missing data follow four patterns:

- **A state reports statistics at the state level, but does not provide county data.** This has continued to be true of the New York responses, which contain no county data, even for those statistics, such as overall turnout, that are reported by county on the New York State Board of Election's Web site.
- **The structure of elections within a state precludes the reporting of county-level data for some or all measures.** Alaska, which does not have counties, is a prime example.
- **Data could be missing from state reports for administrative reasons.** For example, data might be missing because some counties do not report a requested statistic, even though most other counties do.
- **No data can be reported regarding a specific election procedure because it does not exist in a state**. For example, there can be no registration statistics from North Dakota since it does not require registration, and there are no provisional-balloting statistics in states exempt from the procedure.

For this report, every effort was made to fill in missing data by contacting state elections divisions and, in a few instances, local election boards. When we calculate summary measures of these statistics, such as the number of provisional ballots issued in a state, we include data reported directly from the states, even if they do not appear in the EAVS. However, when we calculate the "completeness" statistics, which is intended to measure how thoroughly the EAVS captured workflow statistics at the county level, we treat as missing any data we had to obtain from sources other than the EAVS.

Where data were missing or incorrect because of what appeared to be obvious typographical errors, we tried to make the appropriate corrections.

Virtually every data element in the EAVS has "data out of bounds" problems—that is, figures that are logically inconsistent or impossible, at least for a few counties. The raw data were generally released by the EAC "as is," resulting in a few figures that are logically inconsistent or even impossible. Five localities reported in 2008 that they accepted for counting more provisional ballots than were submitted; 86 counties and towns reported more absentee ballots returned than had been transmitted to voters; and 249 counties and towns reported accepting more absentee ballots than had been returned. Most of these discrepancies are small, but some are quite large. For the purpose of

this report, we have removed counties with logically inconsistent values, coding them as missing.

The program file in the statistical package Stata that was necessary to account for all the data discrepancies discussed here required more than 1,500 lines of computer code—more than 20 pages of single-spaced printout. This file is available to researchers who want to replicate our results.

Calculating Completeness Statistics

The decentralized nature of American election administration has created considerable variation in the quality of the data submitted through the EAVS. The collection process can delay public release long enough to limit the data's use in promptly addressing election problems. For instance, the EAVS data related to administration of the 2008 elections were not released until fall 2009.

To analyze the completeness of the EAVS data,[97] some judgments must be made about which components to focus on as the core content of the survey. Federal statutes provide some guidance about what that might be. For instance, UOCAVA requires states to report "on the combined number of absentee ballots transmitted to absent uniformed services voters and overseas voters for the election and the combined number of such ballots which were returned by such voters and cast in the election . . ."[98] The UOCAVA language suggests we should regard basic input and output measures related to election-administration workflow as the data most central to the EAVS's mission.

Thus, we begin by dividing the workflow of elections into five major categories: registration, provisional ballots, turnout, civilian absentee ballots, and UOCAVA absentee ballots. We next identify one or two inputs and outputs that allow us to gauge localities' work running elections, the avenues through which voters attempt to cast their ballots, and how successful they are. The following 15 quantities help provide the most basic answers to questions about election-administration workflow:

1. Registration
   - Number of new registrations received
   - Number of new valid registrations
   - Number of registered voters
2. Provisional ballots
   - Number submitted
   - Number accepted for counting
3. Turnout
   - Number of total ballots cast
   - Number cast in person on Election Day
   - Number cast in person early voting
   - Number cast absentee

4. Civilian absentee ballots
   - Number transmitted to voters
   - Number returned for counting
   - Number accepted for counting
5. UOCAVA absentee ballots
   - Number transmitted to voters
   - Number returned for counting
   - Number accepted for counting

Table 1 and Table 2 show which question numbers on the 2006 and 2008 EAVS related to each of these items.

An examination of Tables 1 and 2 reveals an improvement in the 2008 questionnaire compared to the previous version. In 2006, the questionnaire did not explicitly distinguish between three important stages in administering absentee ballots—the number of requests for ballots received, the number of ballots transmitted to voters because of those requests, and the number of ballots received back that were submitted for counting. The 2008 questionnaire makes this distinction, providing a much clearer view of how both domestic and overseas absentee ballots were handled.

In assessing how thoroughly counties report basic election information to the EAC through the EAVS, it is difficult to distinguish whether a zero was entered to indicate a lack of data or that a count was made and the answer was zero.

For instance, 537 counties are recorded in the 2006 EAVS dataset as having zero registered voters,[99] and 898 counties are recorded as having zero voters coming to the polls. Although counties sometimes will have no voters, those are isolated cases. It is safe to treat these instances as indicating that the data are missing.

On the other hand, many entries in the 2006 EAVS that are reported as zero could plausibly mean zero and not indicate a lack of data. For instance, 917 counties reported that they transmitted precisely zero ballots to overseas military voters in 2006. Which of these counties are "real zeroes" and which indicate missing data? One hint to the answer comes from the 2008 EAVS, in which half as many counties (468) reported that they transmitted zero UOCAVA ballots. This suggests that many counties that reported transmitting no overseas military ballots in 2006 were indicating that they did not have the data, rather than that they had not transmitted any. Also, in 2006, 23 percent of counties with more than 100,000 registered voters reported they transmitted zero ballots to overseas military voters; in 2008, this figure was 0.7 percent. Again, this suggests that in 2006 many counties entered zero to mean they did not have the data.

Table 1

Completeness Statistics for the 2006 EAVS

	Registration			Provisional Ballots		Turnout				Absentee Ballots	UOCAVA Ballots		Average
	New registrations received	New valid registrations	Registered voters	Provisional ballots submitted	Provisional ballots rejected	Total ballots cast	Ballots cast on Election Day	Ballots cast early voting	Ballots cast absentee	Absentee ballots transmitted	UOCAVA ballots transmitted	UOCAVA ballots returned	
Alabama	0%	0%	100%	92%	99%	100%	92%	N/A	0%	0%	0%	0%	**44%**
Alaska	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	**100%**
Arizona	100%	100%	100%	100%	100%	100%	100%	0%	100%	100%	99%	87%	**90%**
Arkansas	100%	100%	100%	69%	85%	95%	95%	88%	81%	75%	77%	46%	**84%**
California	89%	83%	96%	95%	99%	96%	96%	63%	95%	95%	65%	68%	**87%**
Colorado	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	86%	**99%**
Connecticut	100%	100%	100%	0%	0%	100%	100%	N/A	0%	0%	0%	0%	**45%**
Delaware	100%	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%	**100%**
Dist. of Columbia	0%	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	0%	**0%**
Florida	100%	100%	100%	100%	100%	100%	100%	100%	89%	97%	97%	89%	**98%**
Georgia	100%	100%	100%	100%	98%	100%	100%	100%	100%	100%	100%	100%	**100%**
Hawaii	100%	86%	100%	100%	100%	100%	100%	100%	100%	100%	100%	88%	**98%**
Idaho	100%	100%	100%	N/A	N/A	100%	100%	100%	100%	100%	100%	100%	**100%**
Illinois	99%	96%	100%	92%	94%	100%	99%	80%	18%	49%	47%	37%	**76%**
Indiana	100%	100%	100%	98%	97%	100%	100%	N/A	99%	100%	100%	99%	**99%**
Iowa	0%	0%	100%	0%	40%	0%	0%	N/A	0%	0%	0%	0%	**13%**
Kansas	100%	100%	100%	100%	100%	100%	100%	100%	0%	0%	100%	0%	**75%**
Kentucky	0%	0%	100%	0%	100%	0%	0%	N/A	0%	100%	7%	0%	**28%**
Louisiana	100%	100%	100%	100%	97%	100%	100%	100%	100%	100%	100%	100%	**100%**
Maine	100%	100%	100%	N/A	N/A	100%	100%	N/A	100%	100%	0%	0%	**78%**
Maryland	100%	100%	100%	0%	0%	100%	0%	N/A	0%	0%	0%	0%	**36%**
Massachusetts	80%	0%	100%	15%	6%	100%	15%	N/A	0%	6%	0%	0%	**29%**
Michigan	100%	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%	**100%**
Minnesota	0%	100%	100%	N/A	N/A	100%	100%	N/A	0%	0%	100%	100%	**67%**
Mississippi	72%	35%	97%	69%	68%	98%	78%	N/A	67%	60%	57%	60%	**69%**
Missouri	100%	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%	**100%**
Montana	100%	100%	100%	100%	100%	100%	100%	N/A	100%	100%	100%	100%	**100%**
Nebraska	100%	100%	100%	98%	89%	100%	100%	N/A	100%	99%	5%	82%	**89%**
Nevada	96%	96%	100%	100%	98%	100%	100%	100%	99%	97%	96%	98%	**98%**
New Hampshire	0%	0%	0%	N/A	N/A	100%	100%	N/A	0%	0%	0%	0%	**22%**
New Jersey	89%	84%	100%	84%	89%	91%	91%	N/A	85%	67%	62%	91%	**85%**
New Mexico	85%	62%	100%	29%	57%	100%	43%	43%	55%	46%	46%	49%	**59%**
New York	0%	0%	0%	0%	0%	0%	0%	N/A	0%	0%	0%	0%	**0%**
North Carolina	100%	16%	100%	100%	100%	100%	100%	100%	99%	86%	100%	100%	**92%**
North Dakota	N/A	N/A	N/A	100%	86%	100%	100%	N/A	100%	100%	100%	100%	**98%**
Ohio	87%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	98%	**99%**
Oklahoma	100%	100%	100%	97%	98%	100%	100%	100%	100%	100%	0%	0%	**83%**
Oregon	100%	100%	100%	100%	100%	100%	N/A	N/A	0%	100%	0%	0%	**70%**
Pennsylvania	100%	100%	100%	0%	0%	95%	68%	N/A	0%	75%	0%	0%	**49%**
Rhode Island	100%	100%	100%	0%	6%	100%	100%	N/A	100%	100%	100%	0%	**73%**
South Carolina	99%	4%	100%	75%	61%	100%	100%	N/A	99%	100%	99%	96%	**85%**
South Dakota	95%	84%	100%	100%	76%	100%	97%	73%	54%	61%	58%	45%	**79%**
Tennessee	100%	100%	100%	0%	77%	0%	0%	0%	0%	62%	34%	0%	**39%**
Texas	100%	100%	100%	99%	79%	100%	100%	100%	98%	87%	64%	98%	**94%**
Utah	94%	50%	100%	99%	98%	100%	100%	100%	99%	99%	58%	87%	**90%**
Vermont	0%	0%	100%	100%	0%	0%	0%	N/A	0%	0%	0%	0%	**18%**
Virginia	0%	0%	100%	91%	75%	100%	100%	N/A	100%	100%	100%	100%	**79%**
Washington	68%	51%	100%	100%	98%	100%	100%	N/A	100%	96%	45%	31%	**81%**
West Virginia	100%	0%	100%	68%	85%	91%	86%	87%	75%	62%	48%	55%	**71%**
Wisconsin	0%	0%	100%	N/A	N/A	0%	0%	N/A	0%	0%	0%	0%	**11%**
Wyoming	58%	100%	100%	N/A	N/A	100%	100%	N/A	66%	92%	73%	68%	**84%**
U.S. average	**76%**	**69%**	**94%**	**73%**	**75%**	**86%**	**79%**	**83%**	**62%**	**69%**	**58%**	**54%**	**72%**

Table 2

Completeness Statistics for the 2008 EAVS

	Registration			Provisional Ballots		Turnout			
	New registrations received	New valid registrations	Registered voters	Provisional ballots submitted	Provisional ballots accepted	Total ballots cast	Ballots cast on Election Day	Ballots cast early voting	Ballots cast absentee
Alabama	100%	100%	100%	74%	0%	100%	0%	N/A	0%
Alaska	100%	100%	100%	100%	100%	100%	100%	100%	100%
Arizona	100%	100%	100%	100%	100%	100%	100%	95%	100%
Arkansas	0%	0%	100%	94%	88%	94%	94%	94%	38%
California	100%	82%	100%	100%	90%	100%	100%	57%	99%
Colorado	100%	100%	100%	98%	98%	100%	100%	100%	100%
Connecticut	100%	100%	100%	100%	99%	100%	100%	N/A	100%
Delaware	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Dist. of Columbia	0%	0%	100%	100%	100%	100%	100%	N/A	100%
Florida	100%	100%	100%	100%	100%	100%	100%	100%	100%
Georgia	100%	100%	100%	100%	100%	100%	100%	100%	100%
Hawaii	100%	100%	100%	100%	100%	100%	100%	100%	15%
Idaho	100%	0%	100%	N/A	N/A	100%	100%	N/A	100%
Illinois	93%	98%	0%	99%	99%	79%	0%	0%	0%
Indiana	100%	100%	100%	66%	65%	100%	100%	100%	0%
Iowa	0%	100%	100%	100%	100%	100%	100%	N/A	100%
Kansas	100%	100%	100%	100%	100%	100%	100%	0%	0%
Kentucky	0%	0%	100%	100%	100%	100%	100%	N/A	100%
Louisiana	100%	100%	100%	100%	100%	100%	100%	100%	100%
Maine	100%	100%	100%	N/A	N/A	100%	100%	N/A	0%
Maryland	0%	100%	100%	100%	100%	100%	100%	N/A	100%
Massachusetts	0%	0%	100%	100%	100%	100%	0%	N/A	0%
Michigan	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Minnesota	100%	100%	100%	N/A	N/A	100%	100%	N/A	100%
Mississippi	48%	36%	55%	47%	43%	51%	40%	N/A	35%
Missouri	100%	99%	100%	100%	94%	100%	94%	N/A	93%
Montana	100%	100%	100%	100%	97%	100%	100%	N/A	100%
Nebraska	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Nevada	100%	100%	100%	100%	100%	100%	100%	100%	100%
New Hampshire	0%	0%	100%	N/A	N/A	0%	0%	N/A	100%
New Jersey	100%	100%	100%	100%	100%	100%	100%	N/A	100%
New Mexico	75%	34%	78%	73%	30%	71%	71%	71%	54%
New York	0%	0%	0%	0%	0%	0%	0%	N/A	0%
North Carolina	100%	100%	100%	100%	100%	100%	100%	100%	100%
North Dakota	N/A	N/A	N/A	100%	100%	100%	100%	N/A	100%
Ohio	98%	87%	100%	100%	96%	99%	100%	81%	96%
Oklahoma	100%	100%	100%	100%	100%	100%	100%	100%	100%
Oregon	100%	100%	100%	100%	77%	100%	N/A	N/A	0%
Pennsylvania	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Rhode Island	0%	0%	100%	100%	100%	0%	100%	N/A	0%
South Carolina	100%	100%	100%	92%	92%	100%	100%	N/A	100%
South Dakota	75%	67%	100%	100%	100%	100%	94%	34%	81%
Tennessee	100%	100%	100%	100%	100%	100%	100%	100%	0%
Texas	100%	100%	100%	99%	98%	98%	99%	96%	82%
Utah	100%	100%	100%	97%	97%	100%	100%	100%	0%
Vermont	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Virginia	100%	100%	100%	100%	100%	100%	100%	N/A	100%
Washington	97%	0%	100%	100%	61%	100%	100%	N/A	100%
West Virginia	77%	66%	100%	83%	81%	100%	90%	100%	80%
Wisconsin	100%	0%	100%	N/A	N/A	100%	100%	N/A	100%
Wyoming	100%	100%	100%	N/A	N/A	100%	100%	N/A	100%
U.S. average	**79%**	**75%**	**95%**	**94%**	**89%**	**92%**	**88%**	**83%**	**72%**

(continued)

Table 2

Completeness Statistics for the 2008 EAVS

(continued)	Absentee Ballots			UOCAVA Ballots			Average
	Absentee ballots transmitted	Absentee ballots returned	Absentee ballots accepted	UOCAVA ballots transmitted	UOCAVA ballots returned	UOCAVA ballots accepted	
Alabama	100%	0%	0%	100%	0%	0%	**46%**
Alaska	100%	100%	100%	100%	100%	100%	**100%**
Arizona	100%	100%	100%	100%	100%	98%	**100%**
Arkansas	90%	60%	84%	93%	91%	75%	**76%**
California	100%	100%	100%	100%	100%	77%	**94%**
Colorado	100%	100%	100%	100%	100%	75%	**98%**
Connecticut	100%	78%	100%	100%	0%	0%	**86%**
Delaware	100%	100%	100%	100%	100%	100%	**100%**
Dist. of Columbia	100%	100%	100%	100%	100%	0%	**75%**
Florida	100%	100%	100%	100%	100%	51%	**97%**
Georgia	100%	100%	100%	100%	100%	100%	**94%**
Hawaii	100%	94%	94%	100%	82%	82%	**92%**
Idaho	100%	100%	100%	100%	100%	100%	**93%**
Illinois	100%	99%	99%	0%	0%	38%	**53%**
Indiana	100%	100%	100%	100%	100%	29%	**85%**
Iowa	100%	100%	100%	100%	100%	74%	**91%**
Kansas	100%	100%	99%	99%	95%	96%	**88%**
Kentucky	100%	96%	100%	100%	100%	1000	**81%**
Louisiana	100%	100%	100%	100%	100%	100%	**100%**
Maine	100%	100%	100%	100%	100%	93%	**91%**
Maryland	100%	100%	100%	100%	100%	100%	**94%**
Massachusetts	100%	100%	100%	100%	100%	68%	**67%**
Michigan	100%	100%	100%	100%	100%	6%	**94%**
Minnesota	55%	100%	100%	100%	100%	72%	**95%**
Mississippi	47%	39%	40%	50%	46%	28%	**44%**
Missouri	100%	94%	94%	100%	100%	78%	**96%**
Montana	100%	100%	100%	100%	100%	100%	**100%**
Nebraska	100%	100%	100%	100%	100%	99%	**100%**
Nevada	100%	100%	100%	100%	100%	97%	**100%**
New Hampshire	100%	100%	100%	100%	100%	100%	**64%**
New Jersey	100%	100%	98%	100%	100%	100%	**94%**
New Mexico	73%	68%	69%	76%	73%	50%	**65%**
New York	0%	0%	0%	0%	0%	0%	**0%**
North Carolina	100%	100%	100%	100%	100%	100%	**100%**
North Dakota	100%	100%	100%	100%	100%	100%	**100%**
Ohio	98%	94%	98%	100%	98%	69%	**95%**
Oklahoma	100%	100%	100%	100%	100%	27%	**96%**
Oregon	100%	2%	100%	100%	0%	0%	**72%**
Pennsylvania	100%	100%	100%	100%	100%	100%	**94%**
Rhode Island	100%	0%	100%	100%	0%	100%	**56%**
South Carolina	100%	100%	0%	100%	100%	100%	**93%**
South Dakota	100%	100%	86%	93%	84%	56%	**86%**
Tennessee	100%	100%	100%	100%	100%	90%	**88%**
Texas	96%	95%	95%	100%	100%	45%	**94%**
Utah	100%	99%	99%	100%	100%	100%	**92%**
Vermont	100%	100%	100%	100%	100%	88%	**99%**
Virginia	100%	100%	100%	100%	100%	100%	**100%**
Washington	0%	0%	100%	100%	100%	28%	**74%**
West Virginia	82%	80%	75%	85%	77%	34%	**82%**
Wisconsin	100%	0%	100%	100%	99%	37%	**74%**
Wyoming	100%	100%	100%	100%	100%	100%	**100%**
U.S. average	**79%**	**75%**	**95%**	**94%**	**89%**	**92%**	**85%**

Current Population Survey's Voting and Registration Supplement

The Voting and Registration Supplement (VRS) is a feature of the Current Population Survey (CPS), conducted immediately after each biennial federal election. The CPS is a monthly study of approximately 50,000 households that the Census Bureau has conducted for approximately 50 years. The sample is designed to represent the non-institutionalized civilian population of the United States. The primary purpose of the CPS is to gather information about the U.S. workforce. The VRS, which has been conducted since 1964, gathers basic information about whether respondents who are eligible to vote did so in the most recent federal election and, if not, why not.

Micro-data from November 1994 to the present can be downloaded through the Census Bureau's DataFerrett service.[100] Earlier data are available through the Inter-University Consortium for Political and Social Research (ICPSR).

Table 3

EAVS Survey Items Included in Completeness Calculations, 2006 (Table 1) and 2008 (Table 2)

These items correspond to the following EAVS variable labels for 2006 and 2008.	2006 EAVS Variable Label	2008 EAVS Variable Label
Registration		
Number of new registrations received	q04total	a5a
Number of new valid registrations	q09total	q5b
Number of registered voters	q022006total	a1
Provisional ballots		
Number of provisional ballots submitted	q33p	e1
Number of provisional ballots accepted for counting	q36total**	e2a
Turnout		
Number of total ballots cast	q33total	f1a
Number of ballots cast in person on Election Day	q33a	f1b
Number of ballots cast in person early voting	q33e	f1f
Number of ballots cast absentee	q33dc*	f1c+f1d
Civilian absentee ballots		
Number of absentee ballots transmitted to voters	q38dc	c1a
Number of absentee ballots returned and submitted for counting	q33dc*	c1b
Number of absentee ballots accepted for counting	q33dc*	c4a
UOCAVA absentee ballots		
Number of absentee ballots transmitted to voters	q39om+q39oc	b1a
Number of absentee ballots returned and submitted for counting	q33om+q33oc*	b2a
Number of absentee ballots accepted for counting	q33om+q33oc*	b8

The weighting variable provided by Census was "PWCMPWGT", which is the "weight-composited final weight." In conducting our analysis, we used this weight while collapsing the data at the statewide level.

Survey of the Performance of American Elections

The Survey of the Performance of American Elections (SPAE) was an Internet-based survey of 10,000 registered voters—200 from each state—conducted during the week immediately after the 2008 presidential election. The survey focused on the voting experience. The survey was supported by the Pew Center on the States, under the Make Voting Work Initiative, along with the JEHT Foundation, and the AARP.

Registered voters were asked whether they voted in 2008. If they did not, they were asked several questions about why not. If they did vote, respondents were asked how they voted (in-person on Election Day, in-person early voting, or absentee/mail voting), and then a series of questions about their experience. Data and the final report can be downloaded here: http://dspace.mit.edu/handle/1721.1/49847.

One of the survey's goals was to develop standardized questions about election administration that could be used across surveys in other settings. The questions were piloted in two surveys that preceded the 2008 presidential election: in the 2007 gubernatorial elections in Kentucky, Louisiana, and Mississippi, and in the February 2008 "Super Tuesday" primaries held in 15 states. The same questionnaire was used to study the 2009 gubernatorial elections in New Jersey and Virginia.

While these tests were useful in developing standardized questions, comparisons of results are best made for the same type of elections—for example, two presidential elections, or the 2008 SPAE compared to the 2008 Cooperative Congressional Election Study (CCES). The intensity of activity at the polls and in county election offices might vary too much for two kinds of elections to make a valid comparison.

Being Online Is Still Not Enough

In 2011, Pew issued an assessment of state election Web sites, conducted in collaboration with the California Voter Foundation, Center for Governmental Studies, and Nielsen Norman Group. *Being Online Is Still Not Enough* evaluated the content, usability, and availability of lookup tools for the voting information Web sites of all 50 states and the District of Columbia, scoring them on their performance and suggesting ways for each state to better inform voters online.

The study followed a 2008 assessment, *Being Online Is Not Enough*.[101]

Leading up to the 2010 election, the assessment covered three major categories:

content, lookup tools, and usability. The project assigned 50 percent of the total score to content, including information on registering to vote, items on the ballot, casting a ballot, absentee and early voting, military and overseas voting, and contacting election officials.

The project assigned 25 percent of the total score to the availability of lookup tools that allow voters to check their polling place location, ballot information, and the status of their voter registration, provisional ballot, or absentee ballot.

Finally, even the best information is of no value if users cannot find it easily or at all, so the last 25 percent of the total potential score was assigned to the usability of the Web site. The analysis scored each site on how easy it is to find the site, navigate and search within it, understand the terms that are used, and access it even if the user has disabilities.

Residual Vote Rate

The residual vote rate is defined using the equation shown in Box C.

Although the residual vote rate can be calculated for any race on the ballot, it has become conventional to use top-of-the-ballot races to measure voting-technology performance. The quadrennial presidential election provides the best opportunity to compare states because the same race is used as a point of comparison.

Box C

RESIDUAL VOTE RATE

$$\frac{\text{Reported Total Turnout} - \text{Total Votes Counted}}{\text{Reported Total Turnout}} \times 100$$

Turnout and vote-count statistics were gathered for this report directly from state election divisions. The residual vote rate can only be calculated for states that report turnout as a separate statistic, distinguishing it from the number of legal ballots cast for a candidate. In 2008, six states did not report turnout rates, or did so inconsistently across counties, making the calculation impossible.

State Voting Age Population, Voting Eligible Population, and Turnout

Voting Age Population

The Voting Age Population (VAP) is the residential population of a state that has reached legal voting age, which has been 18 years old nationwide since the ratification of the 26th Amendment to the U.S. Constitution in 1971. The Census Bureau is required by law to report projections of the VAP to the Federal Election Commission every year.[102]

The Current Population Survey's P20 Population Reports contain the data to prepare statewide turnout figures and statistics on voting age populations. Scanned PDF documents of the Census

statewide VAP estimates from 1960-1976 can be found here: http://www.census.gov/population/www/socdemo/voting/past-voting.html#cps. More recent VAP reports are here: http://www.census.gov/hhes/www/socdemo/voting/index.html.

Voting Eligible Population

The Voting Eligible Population (VEP) adjusts VAP to take into account the number of ineligible voters among the resident population, reflecting estimates of people of voting age who are not U.S. citizens, or who are ineligible because of incarceration or prior felony conviction. The VEP statistic is calculated by Michael McDonald, a professor of political science at George Mason University.[103] Data for turnout, the voting age population, and the voting eligible population for every biennial election from 1980 to the present can be downloaded in .xls format through his Web site: http://elections.gmu.edu/voter_turnout.htm.

The available data are insufficient to calculate the VEP by state before 1980. VEP estimates using the pre-1980s data have been made only for the national and regional levels, not by county.

More information regarding the calculation of VEP and related issues is here: http://elections.gmu.edu/FAQ.html#How%20to%20VEP.

Turnout (prior to 2000)

Consistent turnout and election-return data for elections before 2000 are difficult to acquire directly from state election divisions. Two secondary sources, each based on official returns, are the sources for turnout data prior to 2000. The first is the *America Votes* series, compiled by Richard Scammon since 1956. We validated the *America Votes* data against those contained in David Leip's *Atlas of U.S. Presidential Elections* (www.uselectionatlas.org), which also is based on official election returns.

Table 4

Data in Tabular Form

	Figure 2	Figure 3	Figure 5a	Figure 5b	Figure 6	Figure 7a	Figure 7b	Figure 8a	Figure 8b
	Usage of vote-by-mail in the 2008 election	Illness/disability as a reason for not voting, 2000-2010	Completeness of data report in the 2006 EAVS among 15 core measures	Completeness of data report in the 2008 EAVS among 15 core measures	Average time waiting to vote, 2008	Voter registration rates based on state-reported active registrations and population estimates	Voter registration rates based on responses to the VRS	Voter turnout rates based on election returns and population estimates	Voter turnout rates based on responses to the VRS
Alabama	2.2	20.8	44.0	45.9	14.5	82.1	85.2	61.4	73.2
Alaska	9.6	12.4	100.0	100.0	5.8	102.9	87.6	68.0	75.5
Arizona	44.8	10.5	90.4	99.6	22.7	71.7	82.9	55.7	68.3
Arkansas	2.8	16.4	84.1	75.8	21.7	66.1	74.2	53.1	59.5
California	38.6	13.0	86.8	94.4	13.6	78.5	82.5	61.8	75.2
Colorado	58.9	10.8	98.7	98.1	12.6	77.4	84.0	70.8	78.6
Connecticut	4.7	18.3	45.5	86.1	10.4	85.6	85.5	67.4	76.8
Delaware	3.5	17.6	100.0	100.0	12.4	90.4	85.9	66.7	76.8
Dist. of Columbia	12.7	19.6	0.0	75.0		99.1	90.9	62.0	85.0
Florida	19.1	15.6	97.6	97.1	29.0	89.7	87.7	67.4	77.9
Georgia	7.6	14.2	99.8	94.1	37.9	81.3	84.9	61.9	75.3
Hawaii	24.4	12.1	97.8	92.2	5.7	58.7	69.6	50.7	59.4
Idaho	19.8	13.9	100.0	92.9	6.5	83.8	77.1	64.9	66.4
Illinois	3.8	15.9	75.8	53.1	9.2	86.9	85.2	63.8	74.1
Indiana	6.3	14.8	99.5	84.7	24.2	89.2	81.1	60.5	71.5
Iowa	18.6	10.8	12.7	91.2	5.1	90.9	85.3	70.2	77.1
Kansas	18.0	14.3	75.0	87.5	11.0	79.2	77.2	62.0	69.1
Kentucky	2.8	19.9	27.9	81.0	12.5	92.1	83.1	59.0	70.2
Louisiana	2.2	19.0	99.8	100.0	19.1	84.6	88.0	61.8	78.3
Maine	15.8	12.1	77.8	90.7	4.4	95.7	86.5	72.2	76.7
Maryland	6.6	16.5	36.4	93.8	24.7	88.0	87.0	68.2	79.4
Massachusetts	5.7	19.8	29.3	66.7	5.6	83.1	87.0	66.4	79.0
Michigan	21.1	13.7	100.0	94.1	20.6	102.2	90.4	68.9	78.6
Minnesota	6.8	12.6	66.7	94.7	8.6	92.7	91.8	78.0	85.1
Mississippi	5.9	18.7	69.1	44.2	11.1	49.2	86.8	61.2	78.6
Missouri	4.5	15.9	100.0	96.5	26.6	86.6	85.5	68.7	74.2
Montana	25.6	12.7	100.0	99.5	6.2	76.3	80.2	68.1	72.2
Nebraska	15.2	8.9	88.5	99.9	9.3	91.5	82.7	64.2	73.8
Nevada	7.2	10.0	98.2	99.8	12.7	73.2	77.6	58.8	68.0
New Hampshire	5.7	14.0	22.2	64.3	7.5	95.8	84.3	71.9	78.6
New Jersey	5.3	15.5	84.7	93.7	7.4	85.4	85.5	67.9	75.7
New Mexico	18.7	16.6	59.5	65.5	12.4	55.2	80.8	62.0	71.7
New York	4.0	15.8	0.0	0.0	8.7	82.6	83.9	58.6	72.8
North Carolina	5.6	15.6	91.8	100.0	21.3	89.7	84.5	66.8	74.1
North Dakota	16.4	8.9	98.2	100.0	5.3		88.9	65.3	71.7
Ohio	22.1	14.0	98.6	94.8	15.6	64.5	84.4	67.5	75.0
Oklahoma	3.5	17.0	83.0	95.7	22.7	72.4	81.1	56.3	66.9
Oregon	100.0	7.3	70.0	71.9		79.5	85.0	68.1	77.9
Pennsylvania	3.6	15.0	48.9	93.7	14.7	83.3	81.3	64.3	72.1
Rhode Island	3.9	20.6	73.2	56.3	5.2	85.7	84.2	62.4	74.3
South Carolina	9.7	19.5	84.9	92.6	62.1	77.8	80.6	59.1	69.6
South Dakota	8.6	8.9	78.6	86.4	3.9	89.0	83.6	65.0	72.8
Tennessee	2.2	16.8	39.4	87.7	19.6	80.4	80.3	57.4	67.9
Texas	4.9	12.3	93.8	94.1	12.2	78.7	79.5	54.5	64.3
Utah	7.9	13.2	90.3	91.9	13.9	76.9	75.8	55.6	66.1
Vermont	15.8	12.7	18.2	99.2	2.5	89.1	83.4	67.7	72.7
Virginia	4.5	15.2	78.7	100.0	28.2	89.0	87.3	68.0	78.5
Washington	85.3	6.1	80.9	74.1		79.5	84.2	67.3	77.3
West Virginia	1.9	19.7	71.4	82.2	15.1	82.5	78.2	52.4	62.7
Wisconsin	11.4	14.3	11.1	73.9	7.9	90.8	86.9	72.5	79.8
Wyoming	12.7	13.2	84.2	100.0	5.6	62.0	78.4	65.2	71.6

(continued)

Table 4

Data in Tabular Form

(continued)

	Figure 9	Figure 11	Figure 12	Figure 13	Figure 14	Figure 15	Figure 16	Figure 18	Figure 19a	Figure 19b
	Voter turnout rates, 1960 election	Confidence of voters that their votes were counted as intended, 2008	Percentage of civilian domestic absentee ballots transmitted not returned for counting, 2008	Percentage of civilian domestic absentee ballots returned that were rejected, 2008	Non-return rates of UOCAVA ballots, 2008	Rejection rates of UOCAVA ballots, 2008	Use of provisional ballots, 2008	Provisional ballot rejection rates, 2008	Residual vote rates, 2000	Residual vote rates, 2008
Alabama	30.9	74.4								
Alaska	45.3	62.9	16.5	2.1	15.5	4.5	6.2	1.3		0.3
Arizona	52.8	58.1	6.4	0.6	36.6	1.9	4.6	29.3	1.6	1.2
Arkansas	40.9	70.0			29.5		0.1	64.3		0.9
California	66.3	58.4	16.2	2.2	37.3	6.2	5.0	17.1	1.6	1.3
Colorado	70.2	58.4	9.0	0.5	26.2	6.5	2.0	15.9		0.9
Connecticut	76.6	78.2	7.9	2.1					1.0	
Delaware	73.1	81.9	3.6	1.6	22.6	7.8	<0.1	84.3	1.7	0.3
Dist. of Columbia			3.7	8.6	53.5		4.6	28.3	1.9	0.4
Florida	49.1	71.8	14.1	1.0	21.6	2.4	0.4	51.4	2.9	0.7
Georgia	30.3	72.3	1.6	0.2	31.3	2.2	1.3	51.8	3.5	0.5
Hawaii	50.7	75.0	8.9	0.8	32.3		<0.1	77.1	1.2	0.5
Idaho	79.9	68.9	3.3	0.5	22.7	13.9			2.9	1.9
Illinois	76.1	72.9	7.2	0.2				64.2	3.9	1.0
Indiana	76.8	72.8	3.7	10.9	47.2	32.7			1.5	1.9
Iowa	76.8	76.3	5.1	0.7	25.0	8.8	0.3	9.0	0.9	0.6
Kansas	70.4	78.7	6.6	2.5	24.4	10.2		30.9		
Kentucky	59.1	76.6	6.2	1.7	25.0		<0.1		1.5	1.9
Louisiana	44.7	73.4	2.6	0.7	29.1	6.9	0.1	58.4	0.6	1.1
Maine	72.1	77.6	2.8	0.8	28.7					1.8
Maryland	57.0	71.4	9.3	1.0	17.4	8.6	1.9	33.5	0.5	1.1
Massachusetts	76.1	78.3	9.1	1.0	26.1	8.1		72.0	1.1	0.7
Michigan	72.5	83.4	2.5	0.7	27.3	9.6	<0.1	52.0	1.1	0.7
Minnesota	76.9	80.0		3.2	27.8	6.7			0.8	0.3
Mississippi	25.3	75.8			48.0		1.5	39.6		
Missouri	71.9	69.4	4.3	1.7	19.1	4.8	0.1	74.5		2.2
Montana	70.8	67.3	4.1	0.9	32.5	6.7	0.8	2.7	1.7	1.2
Nebraska	71.1	69.6	4.0	1.1	18.8	7.8		22.0	1.4	1.3
Nevada	58.9	65.7	8.8	6.3	37.4	13.1	0.3	57.9	0.6	0.2
New Hampshire	79.1	81.5	4.7	1.8	18.0	4.4			1.7	1.2
New Jersey	71.1	72.0	43.4		31.6	2.9	1.8	25.2	1.0	1.8
New Mexico	62.2	57.6	14.9	0.8	25.5	2.3	0.6		2.8	0.4
New York	66.7	76.5	8.4	5.4	35.0	7.7	2.2	40.0	2.0	1.1
North Carolina	52.9	64.5	14.5	11.9	33.0	8.1	0.6	50.9	3.5	0.7
North Dakota	78.2	82.9	6.4	0.5	23.4	2.2			1.4	1.6
Ohio	71.1	64.1	5.1	1.6	18.3	5.1	3.1	19.3	1.9	1.3
Oklahoma	63.3	73.3	17.0	2.7	27.7	6.6	0.2	83.4		
Oregon	72.2	64.2					0.2	6.2	1.6	0.9
Pennsylvania	70.5	72.7	11.3	0.7	20.6	0.7	0.2	44.2		1.5
Rhode Island	75.2	74.5							0.7	0.8
South Carolina	30.3	69.8	2.6	0.3	26.3	3.1		57.0	3.5	1.1
South Dakota	78.0	81.7	2.5		13.8		<0.1		1.8	2.5
Tennessee	49.9	72.1		2.3	17.4	5.4		63.1	1.1	0.7
Texas	41.4	71.5	8.7	4.6	30.7	7.2	0.3	77.0		
Utah	78.4	70.5	25.0	2.0	31.2	4.1	3.7	16.2	1.7	1.9
Vermont	72.7	84.5	3.1	1.3	15.5	5.7	<0.1		1.0	0.7
Virginia	33.0	74.3	7.3	1.3	29.9	7.8	0.1	72.0	1.8	0.8
Washington	72.3	52.7			28.2		1.3	21.4	1.1	1.1
West Virginia	77.9	70.1	16.4		20.0		0.6	51.9	1.9	3.2
Wisconsin	73.4	73.5			31.0	4.3				0.4
Wyoming	73.7	76.7	2.8	0.4	23.4				1.5	0.5

Table 5

Summary of Online Data Sources Referenced in This Report

Census Bureau	
Current Population Survey, Voting and Registration Supplement, past reports	http://www.census.gov/population/www/socdemo/voting/past-voting.html#cps
Voting Age Population Reports	http://www.census.gov/hhes/www/socdemo/voting/index.html.
DataFerrett (Census Bureau data download site)	http://dataferrett.census.gov/
Election Assistance Commission	
Election Administration and Voting Survey	http://www.eac.gov/research/election_administration_and_voting_survey.aspx
Federal Voting Assistance Program	
Post-election surveys	http://www.fvap.gov/reference/pesurveyrpts.html
Surveys	
Survey of the Performance of American Elections	http://dspace.mit.edu/handle/1721.1/49847
Cooperative Congressional Election Study	http://projects.iq.harvard.edu/cces/data
Pew Research Center for the People & the Press	http://people-press.org/category/datasets/
National Annenberg Election Survey	http://www.annenbergpublicpolicycenter.org/ProjectDetails.aspx?myId=1
Other Data	
United States Elections Project	http://elections.gmu.edu/voter_turnout.htm
Election Data Services	http://www.electiondataservices.com/
Catalist	http://catalist.us/
Voter Vault	http://www.filpac.com/votervault.htm
Verified Voter, Verifier	http://verifiedvoting.org/index.php
David Leip's Atlas of U.S. Presidential Elections	http://uselectionatlas.org/
State Election Division Web Sites	
Alabama	http://www.sos.state.al.us/election/index.aspx
Alaska	http://www.elections.state.ak.us/
Arizona	http://www.azsos.gov/election/
Arkansas	http://www.sos.arkansas.gov/elections/Pages/default.aspx
California	http://www.ss.ca.gov/elections/elections.htm
Colorado	http://www.sos.state.co.us/pubs/elections/main.htm
Connecticut	http://www.sots.ct.gov/ElectionsServices/ElectionIndex.html
Delaware	http://www.state.de.us/election/default.shtml
District of Columbia	http://www.dcboee.org/index.shtm
Florida	http://election.dos.state.fl.us/
Georgia	http://www.sos.state.ga.us/elections/
Hawaii	http://www.hawaii.gov/elections/
Idaho	http://www.idsos.state.id.us/elect/eleindex.htm
Illinois	http://www.elections.state.il.us/

Table 5

Summary of Online Data Sources Referenced in This Report

State Election Division Web Sites	
Indiana	http://www.in.gov/sos/elections/index.html
Iowa	http://www.sos.state.ia.us/elections/
Kansas	http://www.kssos.org/elections/elections.html
Kentucky	http://sos.ky.gov/elections/
Louisiana	http://www.sec.state.la.us/elections/elections-index.htm
Maine	http://www.maine.gov/portal/government/edemocracy/elections_voting
Maryland	http://www.elections.state.md.us/
Massachusetts	http://www.sec.state.ma.us/ele/eleidx.htm
Michigan	http://www.michigan.gov/sos/1,1607,7-127-1633---,00.html
Minnesota	http://www.sos.state.mn.us/index.aspx?page=4
Mississippi	http://www.sos.ms.gov/elections.aspx
Missouri	http://www.sos.mo.gov/elections/
Montana	http://sos.mt.gov/Elections/index.asp
Nebraska	http://www.sos.ne.gov/dyindex.html
Nevada	http://nvsos.gov/index.aspx?page=3
New Hampshire	http://www.sos.nh.gov/electionsnew.html
New Jersey	http://www.nj.gov/state/elections/
New Mexico	http://www.sos.state.nm.us/sos-elections.html
New York	http://www.elections.state.ny.us/
North Carolina	http://www.sboe.state.nc.us/
North Dakota	http://www.nd.gov/sos/electvote/
Ohio	http://www.sos.state.oh.us/
Oklahoma	http://www.ok.gov/elections/
Oregon	http://www.sos.state.or.us/elections/
Pennsylvania	http://www.dos.state.pa.us/bcel/site/default.asp
Rhode Island	http://www.elections.ri.gov/
South Carolina	http://www.scvotes.org/
South Dakota	http://www.sdsos.gov/electionsvoteregistration/electionsvoteregistration_overview.shtm
Tennessee	http://www.state.tn.us/sos/election/index.htm
Texas	http://www.sos.state.tx.us/elections/index.shtml
Utah	http://elections.utah.gov/
Vermont	http://vermont-elections.org/soshome.htm
Virginia	http://www.sbe.virginia.gov/cms/
Washington	http://www.sos.wa.gov/elections/Default.aspx
West Virginia	http://www.wvsos.com/elections/main.htm
Wisconsin	http://gab.wi.gov/
Wyoming	http://soswy.state.wy.us/Elections/Elections.aspx

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Endnotes

1. Pew Center on the States, *Data for Democracy: Improving Elections through Metrics and Measurement* (Washington, D.C.: Pew Center on the States, 2008).

2. For a general discussion of the use of under- and over-votes (i.e., residual votes) as a diagnostic tool, see Paul Gronke, Charles Stewart III, and James Hicks, *Residual Voting in Florida* (Washington, D.C.: Pew Center on the States, 2010).

3. Information about North Carolina's election returns can be found at http://www.sboe.state.nc.us/content.aspx?id=69.

4. Kurt Bauman and Tiffany Julian, "A Summary of Data Collection Procedures and Reports of Voter Turnout from the Current Population Survey," Social, Economic and Housing Statistics Working Paper 2010-11 (Washington, D.C.: U.S. Census Bureau, Housing and Household Economic Statistics Division, November 1, 2010), http://www.census.gov/hhes/www/socdemo/voting/publications/other/CPS_Turnout_11-2010.pdf.

The interviews are conducted whenever the calendar week falls on the19th, and follows a "4-8-4" sampling method. The survey analyzes each household for four months, and following an eight month hiatus, revisits the respondents in the survey for an additional four months.

In prior years, the VRS was known as the "Voter Supplement." Although the VRS has been conducted since 1964, the Census Bureau has only retained micro-data beginning with the 1972 study. Therefore, prior to 1972, the only data available are tabulations produced using the data. These tabulations are generally marginal frequencies, that is, aggregated counts, often broken down at the state level. Therefore, these earlier reports do not allow as thorough an exploration of voting-related issues as is possible in more recent years.

5. The Census Bureau's CPS can be accessed at http://www.censu.gov/cps.

6. Although question wording and response categories have changed somewhat, the current battery of questions has been relatively stable since 1996. Previously, the voter supplement generally recorded only whether the respondent voted and, for non-voters, whether the respondent was registered. Occasionally, other questions would be added, such as the time of day when the respondent voted.

7. The most widely cited academic study to rely heavily on the VRS to study voting participation patterns is Raymond E. Wolfinger and Steven J. Rosenstone, *Who Votes?* New Haven, Yale University Press, 1980.

8. For the sake of comparability across time, Figure 1 is based on the *Current Population Report* publications issued by the Census Bureau, rather than the micro-data, when available. The Census Bureau maintains an online archive of the voting and registration series of the Population Characteristic (P20) reports at the following URL: http://www.census.gov/hhes/www/socdemo/voting/publications/p20/index.html. Note that racial categories used by the Census have changed over time. For 1964 and 1968, the comparison is between whites and non-whites. (Also, for 1964, the participation rate of whites had to be calculated from the data provided in the P20 report.) For 1972–2000, the comparison was between (non-Hispanic) whites and blacks. For 2004 and 2008, the comparison is between whites and blacks who only reported one racial category.

9. See Charles Stewart III, "Adding up the Costs and Benefits of Voting by Mail," *Election Law Journal* 10, no. 3 (September 2011).

10. See Stewart and Westgaard, "Data Dispatches: Exploring the Census' Voting & Registration Supplement" May 5, 2011.

11. One measure of the dearth of official statistics about the challenges facing the disabled in voting is the fact that the CPS only recently began asking about disability status for all respondents in 2009. Therefore, starting with the 2010 VRS, researchers will be able to track more precisely the experience of people with disabilities in voting.

12. The most common response was "too busy, conflicting work or school schedule," given by 17.5 percent of non-voters. See U.S. Census Bureau, *Voting and Registration in the Election of November 2008*. P20-562.

13. Kurt Bauman and Tiffany Julian, "A Summary of Data Collection Procedures and Reports of Voter Turnout from the Current Population Survey," in *Workshop on Overreporting of Voter Turnout* (McGill University, Montreal: 2010).

14. Ibid.

15. See Barry C. Burden, "Voter Turnout and the National Election Studies," *Political Analysis* 8, no. 4 (2000); Michael P. McDonald, "On the Overreport Bias of the National Election Study Turnout Rate," *Political Analysis* 11, no. 2 (2003).

16. Ibid.

17. Benjamin Highton, "Self-Reported Versus Proxy-Reported Voter Turnout in the Current Population Survey," *Public Opinion Quarterly* 69, no. 1 (2005).

18. The American National Election Study (ANES), currently a collaboration between the University of Michigan and Stanford University, funded by the National Science Foundation, is the longest-running national academic survey of public opinion that focuses on politics and elections. The core of the ANES is an in-person time-series study, which asks respondents a set of questions, some of which have been unchanged since 1948. These questions include items such as party identification, ideology, vote choice for federal offices, and attitudes toward the political parties. The sample size of the time-series study has ranged from 662 in 1948 to 2,705 in 1972. Detailed information about the ANES is available through its Web site: http://electionstudies.org/index.htm.

19. See Aage Clausen, "Response Validity: Vote Report," *Public Opinion Quarterly* 41, no. (1968); Brian D. Silver, Barbara A. Anderson, and Paul R. Abramson, "Who Overreports Voting?" *The American Political Science Review* 80, no. 2 (1986); Michael W. Traugott and John P. Katosh, "Response Validity in Surveys of Voting Behavior," *The Public Opinion Quarterly* 43, no. 3 (1979).

20. HAVA Section 241.

21. 42 USC 1973gg-7.

22. Datasets and reports related to the EAVS may be found at the following EAC Web site: http://www.eac.gov/research/election_administration_and_voting_survey.aspx.

23. States vary in handling provisional ballots cast outside a voter's assigned precinct. Although many states discard them, a few states count the votes from these ballots for statewide offices that are on all ballots in the state, or county offices that are on all ballots in the county, regardless of precinct.

24. Oregon does allow voters to return ballots in-person, but only a small fraction of voters do so.

25. Alaska, which has no counties, reported its data at the state level. New York, which does have counties, likewise reported statistics only aggregated at the state level.

26. This non-compliance has led to several legal actions initiated by the U.S. Justice Department. U.S. Department of Justice, "Voting Section Litigation," http://www.justice.gov/crt/about/vot/litigation/caselist.php (accessed May 26, 2011).

27. To allow for the fact that county populations vary dramatically in size, these averages are weighted by the number of registered voters in each county. In North

Dakota and counties that did not report registration statistics, we substituted a proxy measure, usually turnout in the general election.

28. In the 2010 NVRA data that were released in the summer of 2011, registration workflow data were reported at a much higher level. Preliminary analysis reveals that virtually all jurisdictions reported the number of registered voters, 97 percent reported how many registration forms they had processed, and 88 percent reported how many of these registration forms were valid.

29. These counties do not include those in North Dakota, which does not have voter registration.

30. In 2008, Georgia, New Jersey, and New Mexico did not submit information for the EAVS Statutory Overview. Although Maine and Tennessee did not submit information in time for publication in EAVS Statutory Overview, they nevertheless submitted information after the publication deadline. Therefore, those interested in adding these states can do so by coding the data for themselves. In 2010, all the states responded to the statutory overview survey, with data missing only from Guam.

31. These terms are over vote, under vote, blank ballot, void ballot, spoiled ballot, provisional ballot, challenged ballot, absentee voting, and early voting.

32. The dataset may be accessed through the following URL: http://www.eac.gov/research/election_administration_and_voting_survey.aspx.

33. The SPAE was conducted by researchers associated with the Caltech/MIT Voting Technology Project, supported by the Pew Center on the States under the Make Voting Work Initiative, along with the JEHT Foundation and the AARP.

34. Data and the final report can be downloaded at the following site: http://dspace.mit.edu/handle/1721.1/49847.

35. In addition to the Internet survey that was conducted nationwide, the SPAE conducted a parallel telephone survey in 10 states to allow comparison between this newer (and less expensive) survey research mode and the more established telephone mode based on random digit dialing.

The questions on the SPAE were piloted in two surveys that preceded the 2008 presidential election: in the 2007 gubernatorial elections in Kentucky, Louisiana, and Mississippi, and in the February 2008 "Super Tuesday" primaries held in 15 states. In addition, the same instrument was used to study the 2009 gubernatorial elections in New Jersey and Virginia.

36. The SPAE was designed to have a voter validation analysis performed. Because of delays with the vendor performing the validation, that analysis has yet to be done.

37. The CCES, originally sponsored by MIT, is currently housed at Harvard University. The principal investigator is Professor Stephen Ansolabehere of the Harvard Government Department. Funding for the CCES comes from a variety of sources, including the host universities, the National Science Foundation, The Pew Charitable Trusts and the universities that buy specialized modules. More information may be found at the CCES's Web site: http://projects.iq.harvard.edu/cces/.

38. CCES data, including the AEI/Brookings module, can be downloaded at the following URL: http://projects.iq.harvard.edu/cces/data.

39. Information about the National Annenberg Election Survey, including data available for download, may be found at the following URL: http://www.annenbergpublicpolicycenter.org/ProjectDetails.aspx?myId=1.

40. Raw datasets from the Pew Research Center for the People & the Press may be downloaded at the following URL: http://people-press.org/category/datasets/.

41. Information about Freedom in the World reports can be found at http://www.freedomhouse.org/template.cfm?page=15.

42. Country Experts answer questions on a seven-point scale. An example of a checklist question is "Is the head of government or other chief national authority elected through free and fair elections?" Examples of sub-questions below this include, "Did established and reputable national and/or international election monitoring or-

ganizations judge the most recent elections for head of government to be free and fair?" and "Have there been undue, politically motivated delays in holding the most recent election for head of government?"

43. Pew Center on the States, *Being Online Is Still Not Enough: Reviews and Recommendations for State Election Websites 2010* (Washington, D.C.: Pew Center on the States, 2011).

44. The data and supporting documentation for the 2008 surveys can be found at the following URL: http://www.fvap.gov/reference/18threport.html. Several decades of reports can be downloaded from the following site: http://www.fvap.gov/reference/pesurveyrpts.html.

45. These populations are local election officials, voting assistance officers (state and military), active-duty military personnel, and all overseas citizens (federal and non-federal employees).

46. The URL of Election Data Services is http://www.electiondataservices.com.

47. The URL for Catalist is http://catalist.us. An example of a study that uses data such as these to analyze the quality of voter registration lists is Stephen Ansolabehere and Eitan Hersh's "The Quality of Voter Registration Records: A State-by-State Analysis." Caltech/MIT Voting Technology Project Working Paper, 2010.

48. Information about VerifiedVoting.org can be found at http://verifiedvoting.org/article.php?id=5617.

49. The URL for The Verifier is http://verifiedvoting.org/index.php.

50. The exception is North Dakota, which does not have voter registration.

51. Some states did tighten registration requirements in 2011 which flowed against this trend. See "Voter Registration and Requirements," http://topics.nytimes.com/top/reference/timestopics/subjects/v/voter_registration_and_requirements/index.html, last accessed July 14, 2011; Lizette Alvarez, "Republican Legislators Move to Tighten Rules on Voting," *New York Times*, May 29, 2011.

52. *Upgrading Democracy*, Pew Center on the States, 2010, 2.

53. Stephen Ansolabehere and Eitan Hersh, *The Quality of Voter Registration Records: A State-by-State Analysis* (Caltech/MIT Voting Technology Project, 2010).

54. U.S. Election Assistance Commission, *The Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office 2007-2008*.

55. *National Voter Registration Act. Sec. 1973gg-6* http://www.justice.gov/crt/about/vot/42usc/subch_ih.php#anchor_1973gg-6.

56. It is possible to adjust the nationwide VAP estimate using estimates of the eligible overseas population. It is not possible, however, to make these adjustments on a state-by-state basis.

Professor Michael McDonald at George Mason University regularly updates statistics on voting-eligible populations. See http://elections.gmu.edu/voter_turnout.htm.

57. To make the VRS rate comparable to the rate that uses VEP as the denominator, we discard answers from respondents to the VRS who stated said they were not registered because they were ineligible, which removes about 8 percent of self-reported non-registrants.

58. The standard deviation of the VEP-produced registration rates is 11.3, compared to 4.3 for the VRS-produced rates.

59. The correlation coefficient associated with the two rates is .57. It is clear that this correlation is depressed by the presence of two outliers, Mississippi and New Mexico. If they are removed from the analysis, the correlation jumps to .72.

60. To make this discussion manageable, we confine ourselves to general elections in even-numbered years, which can also be called federal elections, because there is always at least one federal office, U.S. House of Representatives, on every ballot.

61. State election division Web sites and personal communications from state election officials.

62. The correlation coefficient between the two series is .80, and .86 when weighted by voting eligible population.

63. The CSES is an international collaborative project that now involves researchers from approximately 50 nations. One part of this project is a common core of public opinion questions that are administered to voters in all the nations being studied, following each nation's national election. The CSES is managed collaboratively by the Center for Political Studies at the University of Michigan and GESIS – Leibniz Institute for the Social Sciences, with support from the American National Science Foundation, German Federal Ministry of Education and Research, University of Michigan, and governments of several German Länder (states). For more information about the CSES, see its Web site: http://www.cses.org/.

64. The results reported here are from Sarah Birch, "Perceptions of Electoral Fairness and Voter Turnout," *Comparative Political Studies,* vol. 43, no. 12 (2010), pp. 1601–22.

65. Pew Research Center for the People and the Press, "November 2008 Re-Interview Survey, Final Topline," (November 6-9, 2008), http://people-press.org/files/legacy-questionnaires/471.pdf; Pew Research Center for the People and the Press, "High Marks for the Campaign, a High Bar for Obama: Republicans Want More Conservative Direction for GOP," (November 13, 2008), http://www.people-press.org/2008/11/13/high-marks-for-the-campaign-a-high-bar-for-obama/.

66. R. Michael Alvarez, Thad E. Hall, and Morgan H. Llewellyn, "Are Americans Confident Their Ballots Are Counted?," *The Journal of Politics* 70, no. 03 (2008).

67. Part of the explanation also rests with the rise in mandated vote-by-mail. See Charles Stewart, III, "Losing Votes by Mail," *Journal of Legislation and Public Policy* 13, no. 3 (2010).

68. Nathan Cemenska et al., *Report on the 1972-2008 Early and Absentee Voting Dataset* (Washington, D.C.: Pew Center on the States, 2009).

69. U.S. Census Bureau, Current Population Survey, Voting and Registration Supplement.

70. As mentioned in Section 1, in dealing with information from the EAVS, one must carefully sift through the raw data so that anomalies can be spotted and addressed. In the case of the 2008 EAVS, 86 jurisdictions reported more ballots returned for counting than were transmitted. Of these, 32 were from Oregon and 37 from Connecticut. These observations have been omitted from the calculations that follow. On the other hand, more than 90 percent of absentee ballots were reported unreturned by Wisconsin, 43 percent by New Jersey, and 25 percent by Utah. The Wisconsin figures are clearly in error, so these states have been excluded from the analysis that follows. New Jersey and Utah remain in this analysis, but their reports deserve further scrutiny. Finally, Tennessee reported that all absentee ballots transmitted by counties in the state were returned, which is also likely in error. Therefore, Tennessee has been removed from the analysis, pending further investigation.

Anomalies in the statistics pertaining to rejected absentee ballots are dealt with as follows: Seventy-six counties report rejection rates greater than or equal to 100 percent of returned absentee ballots. Sixty-six of these are from Wisconsin. We have removed these jurisdictions from the analysis.

71. The U.S. Postal Service apparently does not release estimates of the number of letters that are never delivered. However, in its 2011 second-quarter statistical report, the USPS did report that the average days-to-delivery of a pre-sorted piece of first-class mail was 2.4, with 99.9 of mail delivered within 10 days. Even in the mail classes with the slowest delivery times, parcel post and media mail, 96 percent and 97 percent of packages, respectively, were delivered within 10 days. See http://www.prc.gov/Docs/75/75035/fy2011-q2.pdf, Table 4.

72. The data missing from Oregon and Washington are themselves an anomaly because of the universal vote-by-mail systems in those states. Oregon does have a separate absentee-ballot procedure, mostly for out-of-state residents. On the whole, though, the EAVS survey does not account for either states' election systems very well, which makes missing data from these states different from those from the other states.

73. Furthermore, an examination of the EAVS dataset itself reveals that many of the responses that are categorized as "other" could easily have been included in the standard categories. For instance, Los Angeles County reported 16,443 ballots as "undeliverable," which is a response category related to the statistics concerning ballots mailed and not returned.

74. Pew Center on the States, *Moving Toward a Better Election System for Military and Overseas Voters* (Washington, D.C.: Pew Center on the States, 2010).

75. Public Law 111-84. Also see the "NASS Summary of the Military and Overseas Voter Empowerment Act (MOVE Act)" at http://nass.org/index.php?option=com_docman&task=doc_download&gid=816.

76. Testimony of Bob Carey, NIST TGDC Plenary Meeting, January 13, 2011.

77. "2008 Election Administration and Voting Survey: A Summary of Key Findings," U.S. Election Assistance Commission, November 2009, p.11, http://www.eac.gov/assets/1/Documents/2008%20Election%20Administration%20and%20Voting%20Survey%20EAVS%20Report.pdf.

78. Four states are exempt from this regulation in HAVA and do not issue provisional ballots. Idaho, Minnesota, and New Hampshire are exempt because they allow Election Day registration. North Dakota is exempt because the state does not have voter registration. Other states that allow Election Day registration—Iowa, Maine, Montana, Wisconsin and Wyoming—issue provisional ballots, although generally they do not issue many.

79. Pew Center on the States, *Provisional Ballots: An Imperfect Solution* (Washington, D.C., Pew Center on the States, 2009).

80. The provisional-ballot data from the EAVS in 2008 are fairly complete—the number cast is missing in 31 percent of the jurisdictions; however this represents just 14 percent of the electorate. For rejection rates, the most frequent missing variable is the number of provisional ballots cast, in 28 percent of the cases, which represent about 8 percent of the electorate.

81. Gerken, Heather. "Provisional Ballots: The Miner's Canary for Election Administration," prepared for the Pew Charitable Trusts, July 2009, http://www.pewcenteronthestates.org/report_detail.aspx?id=54807.

82. These could not be calculated because an insufficient number of counties reported how many provisional ballots were cast.

83. "Best Practices on Provisional Voting," *Election Assistance Commission*, complement to Advisory 2005—006, 2006, http://www.eac.gov/assets/1/workflow_staging/Page/56.PDF.

84. In approximately 30 states and the District of Columbia, provisional ballots cast in the wrong precinct will be rejected.

85. See "Provisional Ballots: An Imperfect Solution." The second most common reason for provisional ballot rejection according to the 2008 EAC data are other/miscellaneous.

86. These have been suggested by the EAC best practices as well as by Ohio Secretary of State Husted (R) and groups including the League of Women Voters.

87. Much of the following discussion was taken from Paul Gronke, Charles Stewart III, and James Hicks, *Residual Voting in Florida* (2010).

88. "Chad" is defined as the small pieces of card stock punched out of a punch card ballot. Many of the controversies surrounding the 2000 recount in Palm Beach County, Fla., derived from the fact that the punches did not always break free of the ballot card, leading to ambiguities in interpreting voter intent. "Pregnant" chad referred to cases where chad was not punched clear of the ballot card, but was bowed outward, the result of the stylus meeting resistance behind the card. "Hanging" chad referred to cases where chad was still attached to the card. On the physical properties of punch cards that lead to these problems, see, Douglas W. Jones, "Chad—From Waste Product to Headline," http://www.cs.uiowa.edu/~jones/cards/chad.html, accessed September 26, 2010.

89. A "butterfly ballot" refers to a ballot design that is uniquely used with Votomatic punch cards. Such a ballot places the names for an office on facing pages, with the associated punch locations in the middle. This design confuses some voters because the sequence of the names on the ballot does not correspond with the sequence of the punch-positions on the ballot card. On the effects of the butterfly ballot in Florida see Jonathan N. Wand et al, "The Butterfly Did It: The Aberrant Vote for Buchanan in Palm Beach County, Florida," *American Political Science Review,* 2001, vol. 95(4):793-810.

90. Standards Governor's Select Task Force on Election Procedures, and Technology, *Revitalizing Democracy in Florida* (Miami: Collins Center for Public Policy, 2001). pp. 31-32.

91. Stephen Ansolabehere and Charles Stewart III, "Residual Votes Attributable to Technology," *Journal of Politics* 67, no. 2 (2005); Caltech/MIT Voting Technology Project, *Voting: What Is/What Could Be* (Pasadena, Calif. and Cambridge., Mass.: Caltech and MIT, 2001).

92. Gronke, Stewart III, and Hicks, *Residual Voting in Florida*.

93. Charles Stewart, III, "Residual Vote in the 2004 Election," *Election Law Journal* 5, no. 2 (2006).

94. P.L. 107-252, §241.

95. See the 2010 Election Administration and Voting Survey Change Log which cites minor revisions to the survey at http://www.eac.gov/assets/1/AssetManager/2010%20EAVS%20Change%20Log.pdf.

96. "Item nonresponse" occurs when a questionnaire is returned but some items have not been answered. It is distinguished from "unit nonresponse," which is when a person does not respond to the questionnaire at all. Item nonresponse has been a longstanding topic of concern and research within the public opinion field. For the classic discussion of the issue, see Robert Ferber, "Item Nonresponse in a Consumer Survey," *Public Opinion Quarterly* 30, no. 3 (1966).

97. We do not examine the thoroughness of the 2004 EAVS because difficulties in using the data are so great that it seems unlikely that researchers will use that dataset. For a discussion of some limitations of the 2004 study, see Kimball W. Brace and Michael P. McDonald, *Final Report of the 2004 Election Day Survey* (Washington, D.C.: Election Assistance Commission, 2005).

98. "The Uniformed and Overseas Citizens Absentee Voting Act," in *U.S. Code* (U.S.: 1986)., sec. 1973ff-1(c).

99. This does not include North Dakota, which does not have voter registration.

100. Information about the DataFerrett tool can be found at http://dataferrett.census.gov.

101. Pew Center on the States, *Being Online Is Not Enough: State Elections Web Sites* (Washington, D.C.: Pew Center on the States, 2008). Pew Center on the States, *Being Online Is Still Not Enough: Reviews and Recommendations for State Election Websites 2010* (Washington, D.C.: Pew Center on the States, 2011).

102. "Census Bureau Releases State Estimates of Voting-Age Population," (Washington, D.C.: U.S. Census Bureau, January 31, 2008), http://www.census.gov/newsroom/releases/archives/population/cb08-21.html.

103. Michael P. McDonald and Samuel L. Popkin, "The Myth of the Vanishing Voter," *American Political Science Review* vol. 95, no. 4 (2001), pp. 963–74.