IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

UNITED STATES OF AMERICA, Plaintiff, v. THE STATE OF NORTH CAROLINA, *et al.*, Defendants.	Civil Action No. 1:13-CV-861

Declaration of Charles Stewart III, Ph.D.

Pursuant to 28 U.S.C. § 1746, I, Charles Stewart III, make the following declaration:

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1. My name is Charles Stewart III. I am the Kenan Sahin Distinguished Professor of Political Science at the Massachusetts Institute of Technology, where I teach graduate and undergraduate subjects and do research in the fields of American politics, elections, voting technology, political history, and research methods. I am currently the co-director of the Caltech/MIT Voting Technology Project, and have been involved as a leader and team member of numerous research projects concerning election administration and voting technology.

2. I received a B.A. degree from Emory University in 1979, and an S.M. and Ph.D. degrees from Stanford University in 1982 and 1985, respectively.

3. I joined the faculty at MIT in 1985 as an assistant professor, was promoted to associate professor with tenure in 1992, and then was promoted to full professor in 1999.

4. I served as the Head of the MIT Department of Political Science from January 2005 to June 2010. Previously I had served three years as Associate Dean of the School of Humanities, Arts, and Social Sciences.

5. I am a Fellow of the American Academy of Arts and Sciences.

6. During my twenty-nine years at MIT, I have been responsible for a variety of subjects in American politics and research methods. At the graduate level, I have taught advanced seminars in American politics, congressional politics, election reform and technology, and statistical methods. At the undergraduate level, I have taught classes in American politics, congressional politics, presidential elections, research design, and quantitative analysis. I am currently teaching a class called "The Political Science Laboratory," which is required of all political science majors at MIT; this class introduces MIT students to the foundations of dataset creation and management, statistical methods, and the reporting of quantitative findings in political science.

7. For nearly four years I have been a consultant with the Pew Charitable Trusts, in which I have been providing advice about the use of elections data to help assess the quality of election administration in the United States, including assistance in their work to develop the Elections Performance Index (EPI). As a part of the EPI project, I played a significant role in the drafting of a report, *Election Administration by the Numbers,* which reviewed data sources that could be used to analyze election administration in the United States. Prior to my involvement with the EPI project, I was a grantee on two projects funded by Pew that examined the performance of American election administration using both survey research and official election data reported by national, state, and local election officials.

8. I recently was asked to testify three times before the Presidential Commission on Election Administration, on the topics of line length at polling places, the use of data for the improvement of election administration, and a national survey of local election officials about their perspectives on challenges concerning local election administration.

9. I have authored (or coauthored) seven books, 20 articles in refereed journals, 16 book chapters, five law review articles, and 18 other publications.

10. I have won five "best paper" or "best journal article" awards for my research into elections, Congress, and political history from the American Political Science Association (including three of its sections — Politics and History, Legislative Studies, and Political Organizations and Parties) and from the Midwest Political Science Association.

11. The publications most relevant to the issues discussed in this declaration include the following: Measuring American Elections (co-edited with Barry C. Burden, Cambridge University Press, forthcoming); "*Introduction to Measuring American Elections,"* in Measuring American Elections (Barry C. Burden and Charles Stewart III eds., Cambridge University Press,

forthcoming); *"The Performance of Election Machines and the Decline of Residual Votes in the U.S."* in Measuring American Elections (Barry C. Burden and Charles Stewart III eds., Cambridge University Press, forthcoming); Electing the Senate: Indirect Democracy before the 17th Amendment (co-authored with Wendy Schiller, Princeton University Press, forthcoming); "*U.S. Senate Elections before the 17th Amendment: Party Cohesion and Conflict, 1871–1913,"* (with Wendy Schiller and Benjamin Xiong) 75 Journal of Politics 835–847 (2013); *"Waiting to Vote,"* 28 Journal of Law and Politics 439–463 (2013); *"Voter ID: Who Has Them? Who Shows Them?"* 66 Oklahoma Law Review (2013); *"Regional Differences in Racial Polarization in the 2012 Presidential Election: Implications for the Constitutionality of Section 5 of the Voting Rights Act,"* (with Stephen Ansolabehere and Nathaniel Persily) 126 Harvard Law Review Forum 205–220 (2013); *"Voting Technology, Vote-by-Mail, and Residual Votes in California, 1990-2010"* (with Dustin Beckett and R. Michael Alvarez) 66 Political Research Quarterly 658–70 (2013); 2012 Survey of the Performance of American Elections: Final Report (2013); "*What Hath HAVA Wrought? Consequences, Intended and Unintended, of the Post-Bush v. Gore Reforms*," in Bush v. Gore Ten Years Later (R. Michael Alvarez and Bernard Grofman, eds., forthcoming); Fighting for the Speakership: The House and the Rise of Party Government (co-authored with Jeffery A. Jenkins, Princeton University Press, 2012); "*Function Follows Form: Voting Technology and the Law*," in America Votes! (Benjamin E. Griffith, ed., American Bar Association 2008); "*Improving the Measurement of Election System Performance in the United States*," in Mobilizing Democracy: A Comparative Perspective on Institutional Barriers and Political Obstacles (Margaret Levi, James Johnson, Jack Knight, and Susan Stokes eds., Russell Sage 2008); "*Residual Voting in Florida*," Pew Charitable Trusts (with Paul Gronke and James Hicks) (2010); "*Early- and Late-Adopters of Provisional Ballots*," in Pew Report on Provisional

Ballots (2009); "*Residual Vote in the 2004 Election*," 5 Election Law Journal 158–169 (2006); "*Studying Elections: Data Quality and Pitfalls in Measuring the Effects of Voting Technologies*" (with R. Michael Alvarez and Stephen Ansolabehere), 33 The Policy Studies Journal 15–24 (2005); "*Residual Votes Attributable to Technology*" (with Stephen Ansolabehere), 67 Journal of Politics 365–389 (2005); "*Basic Principles of Data Collection*," in Data for Democracy: Improving Elections through Metrics and Measurement (Pew Charitable Trusts 2008); "*Voting in Massachusetts*" (Report by the Caltech/MIT Voting Technology Project 2003); and "*Race, Region, and Vote Choice in the 2008 Election: Implications for the Future of the Voting Rights Act*" (with Stephen Ansolabehere and Nathaniel Persily), 123 Harvard Law Review 1385–1436 (2010).

12. Immediately following the 2000 presidential election, I responded to a request from the President of MIT, Charles M. Vest, to participate in the Caltech/MIT Voting Technology Project. As a leader and member of that project, I have focused my research on the performance of voting technologies and on strategies to best measure the performance of voting systems.

13. I have testified in Florida state court as an expert witness in the disputed election in 2006 in the 13th congressional district of Florida, and co-authored an amicus brief on behalf of neither party in the Supreme Court case *Northwest Austin Municipal Utility District Number One v. Eric H. Holder, Jr.*, 557 U.S. 93 (2009). I have served as an expert witness in the case *State of Florida v. United States of America*, No. 1:11-CV-01428 (D.D.C.), a Section 5 preclearance case concerning among other issues, changes to Florida's early voting laws, and in the case of *State of South Carolina v. United States of America,* No. 1:12-CV-203 (D.D.C.), a Section 5 preclearance case concerning changes to South Carolina's voting laws.

14. I have also been retained by the United States of America to provide expert testimony in this case. I am compensated for my time at the rate of $350 per hour. See Exhibit 1 for my full curriculum vitae.

Summary of the Analysis

15. I was asked by attorneys at the U.S. Department of Justice to provide a report about whether various changes to North Carolina's election laws reflected in House Bill 589 (2013) ("HB 589") would create a disproportionate burden on black voters in the state.

16. At the request of the Department of Justice attorneys, I have focused my attention in this report on these provisions of the law:

- Reducing the number of days when voters may cast one-stop absentee ballots (popularly referred to as "early voting").
- Ending the practice by which voters may simultaneously register to vote and cast a one-stop absentee ballot (which I will refer to as "same-day registration").
- Ending the practice by which voters who cast provisional ballots outside their precinct of residence might still have their ballots counted (which I will refer to as "out-of-precinct voting").

17. I find that in each particular, the changes wrought by HB 589 will disproportionately burden black voters in North Carolina. The likely outcome of these changes is that fewer voters will be registered in future elections, early voters will endure longer waits and will be more likely to be deterred from voting, and more voters who have gone to a precinct on Election Day that is not their precinct-of-residence will not cast a ballot that will be counted. Because African Americans have shown a preference (compared to whites) for registering during the "same-day registration" period, voting during the early voting period, and availing themselves of the ability to vote out-of-precinct, new burdens imposed on voters because of HB 589 will fall disproportionately on blacks.

18. Furthermore, when we combine together the HB 589 changes, we see that the effects are cumulative, persistently disadvantaging blacks from voting. The power of the effects of HB 589 is even greater when we consider the package as a whole.

19. Based on the calculations I perform below, I estimate that had the provisions of HB 589 that I explore been in effect for the presidential election of 2012, thousands of blacks would have been burdened by them. Among these would have been these:

- 31,127 African Americans would no longer have been able to register during the same-day-registration period, which was revoked by HB 589; [1]
- 736,286 African American early voters would have been burdened either by the elimination of the first seven days of early voting or by enduring the additional congestion at early voting sites brought on by more people voting on a daily basis during the early voting days that remain;[2] and
- 2,079 black voters would have lost the ability to use the provisional balloting process to vote out-of-precinct.[3]

20. A total of 1,046,424 blacks voted in the 2012 presidential election. Using this turnout figure as the denominator, the raw numbers in the previous paragraph can be expressed in the following percentage terms: Burdens on registration would have affected 3.0% of the number of African Americans who turned out to vote; burdens on early voting would have impacted 70.4% of African American voters who turned out; and burdens imposed because of changes to out-of-precinct voting procedures would have affected 0.2% of African American voters who turned out.

[1] Exhibit 31, 2012 data, subtotal of black registrants during the early voting period.
[2] Exhibit 41, subtable b, 2012 data, total of black early voters.
[3] Exhibit 49.

21. Because turnout in North Carolina's midterm federal elections (i.e., federal elections without the President at the top of the ballot) tends to be about 40% less than on-year presidential elections,[4] the effects of HB 589 during midterm elections will be of a lesser magnitude, when we consider raw numbers. This report shows that had HB 589 passed before the last midterm election in 2010, 7,460 African Americans would no longer have been able to register during the same-day-registration period revoked by HB 589;[5] 195,020 African American early voters would have been burdened either by the elimination of the first seven days of early voting or by enduring the additional congestion at early voting sites brought on by more people voting on a daily basis during the early voting days that remain;[6] and 2,479 African Americans would have had their out-of-precinct provisional ballots left uncounted.[7] With 543,590 African Americans voting in the 2010 November General Election, these raw numbers amount to 1.4%, 35.9%, and 0.5% of African American turnout, respectively.

22. Because white voters outnumber black voters by a ratio of approximately 3:1, the raw numbers of white voters affected by the changes wrought by HB 589 are greater, but in percentage terms, they are considerably less. Using the same analysis that derived the estimates of black voters burdened, I estimate that 49,758 white voters would have been burdened in 2012 by eliminating same-day registration,[8] 1,118,612 by severely limiting the days of early voting,[9] and 3,749 by eliminating opportunities to vote out-of-precinct using a provisional ballot.[10]

23. With 3,240,325 white voters turning out in 2012, these percentages amount to only 1.5% of whites affected by the elimination of same-day registration (compared to 3.0% of

[4] Exhibit 21. Total turnout for 2008 and 2012 averaged 4,454,337; turnout for 2006 and 2010 averaged 2,364,955. The 2006/2010 average is 46.9% less than the 2008/2012 average.
[5] Exhibit 31, 2010 data, subtotal of black registrants during the early voting period.
[6] Exhibit 41, subtable b, 2010 data, total of black early voters.
[7] Exhibit 49.
[8] Exhibit 31, 2012 data, subtotal of white registrants during the early voting period.
[9] Exhibit 41, subtable b, 2012 data, total of white early voters.
[10] Exhibit 49.

blacks), 51.8% impacted by the cut in early voting (compared to 70.4% of blacks), and 0.1% of whites affected by the ban on counting out-of-precinct ballots (compared to 0.2% of blacks).

24. When we do a similar analysis for the effects on whites for the 2010 midterm, the results are similar. I estimate that had HB 589 been in effect for the 2010 midterms, 20,338 white voters would have been burdened by changes to same-day registration,[11] 686,380 by changes to early voting, and 3,749 by eliminating out-of-precinct provisional balloting. In percentage terms, out of the 2,075,139 white voters who turned out in the 2010 general election, these amount to 1.0% of white voters for same-day registration (compared to 1.4% of black voters), 33.1% of white voters (compared to 35.9% of black voters) for early voting, and 0.2% of white voters (compared to 0.5% of black voters) for out-of-precinct voting.

25. HB 589 represents the first major constriction of access to the polls in North Carolina since the passage of the 1965 Voting Rights Act. Coupled with other features of this legislation that I have not examined in this report, including highly restrictive voter identification provisions,[12] the law is unprecedented in recent times in the range of policy changes that erect barriers to voting in North Carolina.

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[11] Exhibit 31, 2010 data, subtotal of white registrants during the early voting period.

[12] While I have not prepared a detailed statistical analysis of the effects of the voter identification provisions of HB 589, I am aware that the North Carolina State Board of Elections has performed its own matching of the state voter registration list against records of the state Division of Motor Vehicles (DMV) database. One such analysis, reported in a memo dated April 17, 2013, states that blacks constituted 33.8% of those on the voter registration rolls who could not be matched to the driver's license rolls; in Exhibit 20, I report that only 22.5% of registered voters in the 2012 voter snapshot file (i.e., a file of registered voters eligible to vote as of that date) were African American. Similarly, although whites constitute 71.1% of the same snapshot file, they only constituted 54.2% of the non-matches on the driver's license list.

The April 17, 2013 memo did not report the overall racial distribution of the voter registration list, so I cannot calculate a "no-match rate" of registered voters to the DMV database, by race. However, using the registration statistics in Exhibit 20 as a close approximation of the racial composition of the voter registration list analyzed in the April 17, 2013 memo, I calculate a no-match rate of 7.4% for blacks and 3.8% for whites. (See the next paragraph for the details of the calculation). In other words, the no-match rate is 1.9 times greater for blacks than for whites. This is a greater disparity in no-match rates than what I found in my expert report in the case of *South Carolina v. Holder*, 12-cv-203 (D.D.C.), at page 36. (In that case, the black no-match rate was 9.5% and the white no-match rate was 5.5%, which means that black registered voters in South Carolina were 1.7 times more likely [i.e., 9.5%/5.5%] than whites not to have a driver's license.)

26. To conduct this research, I primarily examined election data files, provided by the North Carolina State Board of Elections (SBOE) through the Department of Justice, to explore voting patterns in North Carolina prior to the passage of HB 589. I supplemented this analysis with data available for public download from the SBOE's file transfer protocol (ftp) site, data from the U.S. Census Bureau, and survey research data from a large national study about election administration that I helped lead in 2008 and 2012.

27. My report is divided into three major substantive sections, as follows:

- Voter registration changes, ¶¶ 50–128
- Early voting changes, ¶¶ 129–214
- Provisional ballot changes, ¶¶ 215–245

Preceding these substantive sections, I review the datasets I analyzed, including the procedures I followed to prepare the analysis, beginning on paragraph 28.

Databases Used in This Report

28. This section identifies the data files I used to perform my analysis. The data I explored fell into two major categories. The first was data that arose directly from the administration of elections in North Carolina. The bulk of this election administration data was provided by the state Board of Elections, through the U.S. Department of Justice, via the discovery process. I augmented this information with data I downloaded from the SBOE's

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Here is how I calculated the no-match rate for the data analyzed in the April 17, 2013 memo. The number of registered voters in the registration list analyzed was 6,425,820 (p. 2). The memo does not report a breakdown by race. However, because the list was generated only three months after the 2012 election, it is reasonable to assume that the racial distribution of registered voters was very close to that reflected in Exhibit 20 (i.e., 22.5% black and 71.1% white). Applying these percentages to the number of people on the registration list analyzed in the April 17, 2013 memo yields an estimate of 1,445,810 blacks and 4,568,758 whites. If 107,681 blacks in the registration list did not match to the DMV list (p. 9), this means that the no-match rate for blacks was 7.4% (i.e., 107,681/1,445,810 = 7.4%). If 172,613 whites on the registration list did not match to the DMV list, this calculates out to a 3.8% no-match rate for whites (i.e., 172,613/4,568,758 = 3.8%). This means that the no-match rate for blacks is approximately 1.9 times greater for blacks than for whites.

public ftp site.[13] The second major category of data came from two major public opinion surveys, the Voter and Registration Supplement of the Current Population Survey (conducted by the U.S. Census Bureau) and the Survey of the Performance of American Elections (conducted by a research team I have led).

29. In this section, I first describe the state election management system, which is the source of much of the data I analyze. I then introduce the datasets themselves, starting with the state-provided data, and then moving to the survey research data. I provide more detail about these data sets, and particularly address the preparation of the state-provided election administration data, in Exhibit 2.

The State Elections Information Management System (SEIMS)

30. The computer system used by North Carolina to manage elections is called the State Elections Information Management System (SEIMS). The system was created following a law passed by the General Assembly in 1994 to implement a statewide computerized elections management system to support the work of the state and county boards.[14] To comply with the Help America Vote Act of 2002 (HAVA),[15] which requires that states maintain a single computerized voter registration list, North Carolina brought all counties fully within SEIMS beginning in 2006.

31. The core function of SEIMS is to support the maintenance of the voter registration rolls in the state. Voter registration rolls generally consist of two parts, which is the case with SEIMS. First, there are registration records themselves, which record relevant

[13] This ftp site can be found at ftp://alt.ncsbe.gov/.
[14] See S.L. 1993-762.
[15] 42 U.S.C. 15301 et seq.

identifying information about voters — names, addresses, etc. Second, there is a record of the voting participation of each voter, which is generally called the "voter history file."

32. Voter registration records can be fluid. Even though the bulk of new registrations occur in close proximity to elections, in theory voter registration records can change at virtually any time, depending on the changing life circumstances of voters (and potential voters) and when they notify the state or county of these changes. Leaving aside the fact that some voter information systems retain obsolete records for archival purposes, voter registration rolls in general might expand or contract, depending on whether the number of new registrants outpaces the number of people moving away and dying. The information associated with any given voter might change, too, in response to life events, such as when a voter changes address or changes a name because of marriage.

33. Voter history records change, too, but only in response to very discrete events — when an election requires the county boards of election to update the voter history file to reflect who voted in a particular election. In general, voter history files only get larger, as new instances of voter participation are recorded and appended to the end of the existing voter history file.[16]

34. Voter registration and voter history files are used together to perform an important part of list maintenance, the removal of individuals who have left the electorate. According to the National Voter Registration Act (NVRA), voters may not be removed from the voter rolls simply because they have not voted, unless they have failed to vote in two consecutive federal

[16] As a practical matter, voter history files change, and even sometimes shrink, due to the fixing of errors that crop up in the database. In the case of North Carolina, such clerical changes appear to be trivial and do not affect my substantive analysis.

elections.[17] The voter history file is the primary source of information about whether someone on the voter roll has met this criterion.

35. To ensure that the records of individuals in the voter rolls and voter history files are accurately paired up, both lists must use unique identification numbers to associate individuals across the two files. In the particular case of North Carolina, there are two sets of identification numbers in SEIMS that can serve to link voters across lists. The first is a combination of the county of registration plus a voter registration number supplied by the county. (I call this the "county ID + registration number" system.) The second is a single statewide identification number termed the "ncid," generated by the SEIMS system itself, which is intended to identify a voter even if he or she moves between counties.[18] From my exploration of the data files described below, I have learned that the county ID + registration number combination effectively identifies voters uniquely.[19] Therefore, in the analysis that follows, matching between datasets generated by SEIMS is done using the county ID + registration number system. The *ncid* identifier is used in only one analysis that uses information from the voter registration list alone to analyze multiple registration records that apply to the same individual.[20]

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[17] 42 U.S.C. § 1973gg-6. This provision of the NVRA has further restrictions on this procedure for non-voting in two consecutive federal elections. The following document provides a description of North Carolina's procedures to remove voters due to "no contact": Memo of Gary O. Bartlett to the North Carolina House Elections Committee, Subcommittee on General Government, March 11, 2013, Attachment B., p. 3, available at http://www ncleg net/documentsites/committees/JointAppropriationsGeneralGovernment2013/2013%20Session/03-07-13%20Meeting/sbe_GA_response_with_attachments.pdf.

[18] Memo from Marc Burris (IT Director, State Board of Elections) to Director, County Board of Elections, Subject: DL# Validation, SSN Validation and Unique ID Processing (SEIMS Numbered Memo: 2009-0003), January 12, 2009, ftp://www.app.sboe.state nc.us/seims/numbermemo/2009-0003%20%20-%20%20HAVA%20ID%20Validation.pdf.

[19] An e-mail from Alexander Peters of the North Carolina Department of Justice to David Cooper (USDOJ) dated Feb. 24, 2014 conveyed an answer to the following question, "Can a single county-issued voter registration number ever be assigned to more than one individual?" The answer was, "No. County registration numbers are unique to the county and are not reused."

[20] In that analysis, the "multiple registration records that apply to the same individual" are primarily archived records that might, for instance, reflect former addresses of a voter who has moved.

36. It is important to recognize that the data generated by the SEIMS system is useful for my report beginning only with the 2006 election, because of the failure of some counties to participate before then. As a consequence, the analysis that follows which relies on individual voter records generally starts with 2006.

37. Although the core function of SEIMS is the management of the voter registration and voter history records, counties also use SEIMS to perform other functions, such as tracking information about absentee voters and provisional ballots, or recording information about sites used for early voting.

Election administration data provided by the State Board of Elections

38. The core analysis in this report focuses on racial disparities in same-day registration, early voting, and provisional ballot use in North Carolina. To perform this analysis, I required data that recorded voter registration, voter history, absentee voting, and provisional voting in the state. In addition, I required data about the racial characteristics of North Carolina voters and their place of residence.

39. On February 6, 2014 I received from the Department of Justice an encrypted hard disk with a set of files from the North Carolina State Board of Elections (SBOE). The most critical of these were a series of "snapshot files" that recorded voter registration records at set points in time associated with general elections in 2006, 2008, 2010, and 2012; a voter history file dated January 27, 2014 in the file name; an "absentee correspondence" file dated January 27, 2014; and a provisional voter file also dated January 27, 2014.[21] In addition, I received a series of "link files" that provide the codes that allowed me to decode information in the main data

[21] The system information recording when these files were last modified generally bore the date of 1/28/2014 and 1/30/2014. As a general matter, when I refer to the date of a file in this analysis, I rely on the date that is reflected in the file name. In addition, I received other data files at the same time, some of which I used in the preparation of this report. I make note of these files when the analysis involves them.

files. Finally, I received a series of files that identified county one-stop voting sites, with information primarily beginning with the 2012 general election.

40. For the sake of simplicity, I will refer to the data files I received on the encrypted hard disk on February 6, 2014 as the "state-provided data files."

41. In addition, the SBOE maintains a file-transfer-protocol (ftp) site that is accessible to the public. This ftp site contains datasets that are, to the best of my knowledge, extracts of the official datasets maintained by the SBOE for the administration of elections in North Carolina. In a few cases identified below, I made use of the data available on the ftp site, when data on the state-provided files were incomplete. As a general matter, these ftp files contain data from earlier elections, when SEIMS was not used in all counties.

42. For the sake of simplicity, I will refer to the data files I downloaded from the public ftp site as the "downloaded ftp files."

43. In all cases, the analysis relating to the 2008, 2010, and 2012 federal elections relies on the state-provided data file; in most cases, analysis for 2006 does also. Analysis that discusses official state data from before 2006 is generally taken from the ftp site.

44. In all cases in this report, registered voters are considered to be all voters who are assigned to either the "active" or "inactive" administrative status, because both may vote in North Carolina elections.

45. The voter registration files I examined continue to hold records that are not associated with active or inactive voters. The most common of these are "removed" records (3,332,141 in the 2012 snapshot file), followed by "denied" (68,054), and "temporary" (6,957).

46. Table 1 summarizes the major state data files used in this analysis. Details about the preparation of these files appear in Exhibit 2.

Table 1. Primary data from North Carolina used in this report		
a. Provided by the state through discovery		
File name[22]	Description	Variables utilized[23]
voter_snapshot_20061020 voter_snapshot_20081104 voter_snapshot_20101102 voter_snapshot_20121106	Voter registration records as of the general elections of the indicated dates. In addition to contemporaneous records, each file also contains obsolete records about current registrants and records about registrants who have been removed from the voter rolls	Registration status Voter race Voter ethnicity Voter party Registration date
voter_history_20140127	Voter history file containing the mode voters used to vote	Voting method Voter party
abs_corr_20140127	Absentee correspondence file containing information about all absentee ballots distributed, including one-stop absentee ballots (early voting)	Type of absentee ballot Date of ballot return/one-stop voting
provisional_voter_20140127	Provisional voter file containing information about all provisional ballots distributed and their resolution	Voter party Reason voted provisional Whether ballot counted Whether voted out-of-county
epb_site_assignment_hours	File containing information about the hours when early voting sites were open for voting	Date early voting site was open Opening time Closing time
b. Downloaded from public ftp site		
File name	Description	Variables utilized
absentee11xx07xx2006	File containing information about absentee ballots in the 2006 general election	Type of absentee ballot Date of ballot return/one-stop voting

Survey research data used in this report

47. The core of my conclusions rests on the official data files provided by the SBOE. However, I also relied on two other datasets, primarily to help provide broader context for the North Carolina data. These are the Voting and Registration Supplement of the Current Population Survey and the Survey of the Performance of American Elections. I briefly describe both of these datasets here, providing more detailed information about each in Exhibit 19.

[22] Most of the files provided by the state were marked "HIGHLY CONFIDENTIAL" in the file name. This part of the file names is omitted here to save space.
[23] In addition, from each file I utilized identifying information: county, voter registration number and ncid (where it existed).

48. The *Voting and Registration Supplement (VRS) of the Current Population Survey* is, as the name implies, a survey supplement to the monthly Current Population Survey (CPS) conducted by the U.S. Census Bureau. The primary function of the CPS is to gather data about the labor force participation of American households. The VRS is administered as part of the CPS in November following each federal election. The voting questions relevant to this report ask respondents how they voted (in-person on Election Day, in-person at an early voting site, or by mail) and, if they did not vote, whether they are registered. The rich demographic information contained in the larger CPS survey allows us to study demographic features of the electorate. The large nationwide sample size of respondents who are administered the VRS instrument, which has averaged over 80,000 since 1996, and the large sample size within North Carolina, which has averaged nearly 1900 since 1996, provides a degree of statistical precision about the eligible electorate unavailable through other national surveys.

49. The *Survey of the Performance of American Elections (SPAE)* is a national survey performed following the presidential elections of 2008 and 2012 that focused specifically on the experience of voters with the process of voting, and election administration issues more generally. With 200 respondents in each state, there are 10,000 respondents overall in 2008 and 10,200 in 2012 (with the addition of Washington, D.C.). This is the only national survey devoted specifically to the experience with the electoral process. For purposes of this report, the SPAE is specifically useful in identifying how long voters waited in line to vote, and the times of day they went to the polls.

The End of Same-Day Registration in North Carolina

50. HB 589 makes important changes to the voter registration system in North Carolina by putting an end to same-day registration, that is, the ability to register during the early voting period and cast a ballot in one simultaneous process.

51. The registration rate of African Americans has surged in North Carolina since 2000, to the point that the registration rate of African Americans now exceeds that of whites. This is a significant development, given the history of racial discrimination in voting that cast a pall over the South for over a century. Because voter registration is a necessary condition for electoral participation in North Carolina — indeed, registration laws were a keystone of notorious race-based barriers to voting in the past — the parity of whites and blacks on the measure of voter registration in North Carolina suggests that the state is on the threshold of a surge in black political influence via the ballot box.

52. Same-day registration has become the registration method of choice among many North Carolina voters, but especially among blacks. In the four-year period leading up to the 2012 presidential election, for instance, the 17-day same-day registration window preceding the election accounted for only 1.2% of all the days available for registration, yet the 95,689 new registrants during these 17 days accounted for 5.8% of all registrations during the four-year cycle.[24] Furthermore, African Americans are over 35% more likely to register during the same-day registration period than whites,[25] which means the burdens placed on new registrants by this change in registration law will clearly be disproportionately felt by blacks in North Carolina.

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[24] This analysis is based on data reported in Table 6 on p. 45 below. The time period covered in the calculations in this paragraph stretches from October 11, 2008 to November 3, 2012, which is when new registrants would first be eligible to vote for president in 2012, depending on factors of the law that are discussed below when Table 6 is introduced.

[25] In Exhibit 31 I show that in 2012, 10.1% of all black registrations in the two-year period leading up to the general election occurred during the same-day registration period, compared to 7.5% for whites. This difference means that

53. There is no doubt that the same-day registration vehicle has been an important part of the laudable parity in black-white registration rates recently achieved in North Carolina; there is equally no doubt that revoking same-day registration threatens that parity.

54. The remainder of this section is organized as follows. First, I review recent trends in North Carolina voter registration rates, documenting the rise in overall registrations that has been fueled primarily by an increase in the registration of non-whites, and documenting the high degree of turnover in the registration rolls that makes the composition of those rolls sensitive to shifts in the demographics of the state (¶¶ 55–75). Second, I drill down into the details of *when* North Carolinians register to vote, to demonstrate that same-day registration has become an important feature in the electoral landscape of the Old North State (¶¶ 76–89). Third, I demonstrate that African Americans have come to rely on the same-day registration period to a much greater extent than whites (¶¶ 90–93). Finally, I provide a detailed accounting of how the precise timing of voter registration behavior interacts with the abolition of same-day registration, demonstrating the real possibility that eliminating same-day registration will affect approximately 100,000 potential registrants through the next presidential election (¶¶ 94–107).

Voter registration patterns in North Carolina

55. Registration is a necessary condition for voting in every state, except North Dakota. While many commentators often worry that voter turnout in the United States is below that of almost every other democracy in the world, we also know that when Americans are registered, they will vote.[26]

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the likelihood of blacks registering during the same-day registration period is 35% greater, because (10.1-7.5)/7.5 = 35%.

[26] Robert S. Erikson, "Why do people vote? Because they are registered." *American Politics Quarterly* 9 (1981): 259–276; Peverill Squire, Raymond E. Wolfinger, and David P. Glass, "Residential mobility and voter turnout," *American Political Science Review* 81 (1987): 45–65; Raymond E. Wolfinger, David P. Glass, and Peverill Squire,

56. Knowing that registration was a precursor to voting motivated many of the notorious first-generation barriers to voting, such as poll taxes, literacy tests, and outright intimidation.[27] Political scientists who are students of southern politics have long argued that racial animus was an insufficient explanation for these first-generation barriers, insofar as white racial attitudes in the region were largely constant (to a first approximation), while the barriers to voting varied considerably, in terms of their details and timing.[28] Voting restrictions often arose at moments when a segment of white political leadership joined with African American political leaders to create a force that was capable of winning electoral majorities. A classic example involved the Democratic Party's reaction to the successful Republican-People's Party fusion in North Carolina in the 1890s.[29] First-generation restrictions on blacks voting in these instances became a strategic maneuver by all-white political movements that were unwilling to form coalitions with blacks, in order to consolidate power on their own.

57. Being familiar with this classic literature on how racial and Progressive reform politics interacted to protect the hold of whites over the levers of political power in the South,

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"Predictors of electoral turnout: An international comparison," *Policy Studies Review* 9 (1990: 551–574); Richard J. Timpone, "Structure, behavior, and voter turnout in the United States," *American Political Science Review* 92 (1998): 145–158.

[27] I use the term "first-generation barriers to voting" to denote those practices in place in much of the South when the 1965 Voting Rights Act was passed that were intended to keep African Americans from voting. These practices were augmented by laws intended to exempt whites who might have been captured in the net of these barriers, the best-known of which was the "grandfather clause." These practices were notable both for their effectiveness in denying the vote to African Americans, and for the persistence and creativity used by state and local officials as they strove to retain these barriers in the face of successful challenges in federal courts. *South Carolina v. Katzenbach* 383 U.S. 301, 308–313 (1966); Lani Guinier, "The Triumph of Tokenism: The Voting Rights Act and the Theory of Black Electoral Success," 89 *Michigan Law* Review 1077 (1991), p. 1093 footnote 75. First-generation barriers to voting are distinguished from "second-generation" voting barriers, which include "indirect structural barriers such as at large, vote-diluting elections." Guinier, "Triumph of Tokenism," p. 1093.

[28] V.O. Key, *Southern Politics,* New York: Vintage Books, 1949; C. Vann Woodward, *The Strange Career of Jim Crow,* New York: Oxford University Press, 1955; Samuel Issacharoff and Richard H. Pildes, "Politics as markets: Partisan lockups of the democratic process," 50 *Stanford Law Review* 643 (1998), pp. 655–656; Alexander Keyssar, *The Right to Vote,* New York: Basic Books, 2000.

[29] Helen G. Edmonds, *The Negro and Fusion Politics in North Carolina, 1894–1901,* Chapel Hill: University of North Carolina Press, 1951; J. Morgan Kousser, *The Shaping of Southern Politics: Suffrage Restriction and the Establishment of the One-Party South, 1880–1910,* New Haven: Yale University Press, 1974, 182–194; Eric Anderson, *Race and Politics in North Carolina, 1872–1901,* Baton Rouge: Louisiana State University Press, 1981;

one cannot help but notice parallels to contemporary North Carolina. One central characteristic that the current roll-back of registration opportunities shares with the past is that it comes at a time when African American registration levels are surging in North Carolina, and thus coincides with the growth in opportunities for African Americans to exert political power through the ballot box.

58. Therefore, in assessing the significance of the registration restrictions in HB 589, it is important to begin with an understanding of current trends in voter registration in the state.

Who is registering to vote in North Carolina?

59. Voter registration in North Carolina has grown over the past two decades, both in terms of the total number of registered voters and the percentage of the Voting Age Population (VAP) that is registered. The most comprehensive source of information about trends in voter registration across several decades is the biennial report by the U.S. Election Assistance Commission (EAC) on the impact of the National Voter Registration Act (NVRA). According to data contained in the most recent NVRA report, the number of people registered to vote in North Carolina has risen from 3.6 million in 1994, to 5.2 million in 2000, to 6.7 million in 2012. This constitutes a rise from 68.2% of VAP in 1994, to 85.3% in 2000, to 89.1% in 2012.[30]

60. Using the voter files described in Exhibit 2, supplemented by online data reports downloaded from the SBOE ftp site, it is possible to document the rise in voter registration rates by race over the past decade using North Carolina state data.[31] As Table 2 below demonstrates, the total number of voters registered in North Carolina has grown from almost 5.2 million in

[30] U.S. Election Assistance Commission, *The Impact of the National Voter Registration Act of 1993 on the Administration of Elections for Federal Office 2011–2012* ("EAC 2011-2012 NVRA Report"), June 30, 2012, p. 24.
[31] I calculated the data in Table 2 for 2006–2012 from the voter files described in Exhibit 2. Data for the years 2000, 2002 and 2004 were taken from the files Oct2000Registration.xls, voterstats11xx05xx2002, and voterstats11xx02xx2004.txt on the ftp site.

2000 to over 6.6 million in 2012. This growth represents a 28.2% increase in the voter registration rolls during this time.

Table 2. Voter registration in North Carolina, by race, 2000-2012
(Source: U.S. Election Assistance Commission)

	Number of registered voters				As pct. of total registered voters		
Year	Total	Black	White	All other races	Black	White	All other races
2000	5,186,094	988,134	4,082,850	115,110	19.1%	78.7%	2.2%
2002	5,045,586	972,866	3,937,676	135,044	19.3%	78.0%	2.7%
2004	5,527,413	1,114,798	4,226,473	186,142	20.2%	76.5%	3.4%
2006	5,566,249	1,116,818	4,248,469	200,962	20.1%	76.3%	3.6%
2008	6,264,730	1,354,976	4,596,476	313,278	21.6%	73.4%	5.0%
2010	6,200,723	1,339,180	4,534,617	326,926	21.6%	73.1%	5.3%
2012	6,649,208	1,492,839	4,728,853	427,516	22.5%	71.1%	6.4%
Change from 2000 to 2012	1,463,114	504,705	646,003	312,406			
Percentage change from 2000 to 2012	28.2%	51.1%	15.8%	271.4%			

61. As reflected in Table 2, the growth in voter registration in North Carolina has been unevenly distributed across racial groups in the state. From 2000 to 2012, the number of whites on the registration rolls rose by 646,003, while the number of blacks rose by 504,705. The number of voters who are classified as neither white nor black (including those unclassified) rose by 312,406. These increases represent a 51.1% growth in the number of black registrants in North Carolina, compared to a 15.8% growth in the number of white registrants. As a consequence, the percentage of whites among the registered population has dropped from 78.7% in 2000 to 71.1% in 2012, while the percentage of blacks among the registered population has grown from 19.1% to 22.5%. The share of voters classified as neither black nor white has grown from 2.2% to 6.4%

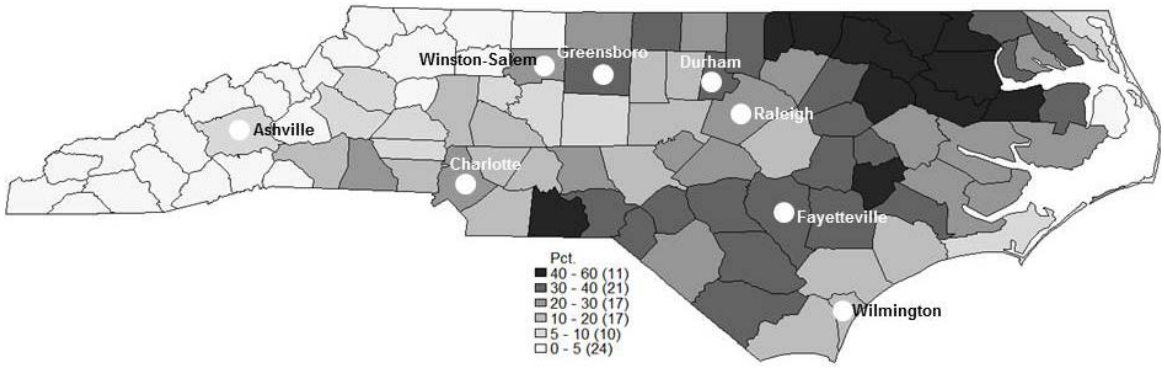
62. The North Carolina voter file only began accounting for Hispanic ethnicity in 2004. Hispanic ethnicity is recorded in a separate data field from race information. Using data prepared for this report, in 2006 there were 33,569 Hispanics on the voter registration rolls. This number increased to 68,053 in 2008, reaching 113,782 in 2012. Thus, from 2006 to 2012, the rate of growth among Hispanics on North Carolina's voter rolls was ten times that of the voter rolls overall — the number of Hispanics on the North Carolina voter rolls increased by 67.2% over a period in which the statewide voter registration rolls grew by 6.1%.

63. For the purpose of reference, I report the racial and ethnic distribution of registered voters (Active and Inactive status)[32] who appear in the 2012 snapshot file in Exhibit 20. Furthermore, I report the racial and ethnic distribution of registered voters and voters who turned out to vote in the 2006, 2008, 2010, and 2012 elections, broken down by political party, in Exhibits 21–25.

64. Also for reference, the following map in Figure 1 notes the racial distribution of North Carolina's registered voters at the time of the 2012 presidential election. In 2012, 22.5% of the registered population was African American. As a general matter, African Americans compose the greatest fractions of the electorate in the Inner Coastal Plain region, a historically agricultural part of the state, and cities in the Piedmont region, which historically held the manufacturing and business centers of the state. African American voters are least likely to reside in the counties of the Mountain region, with the notable exception of Buncombe County (Asheville).

[32] In all the reports I have examined from the state of North Carolina that make reference to registered voters as a whole, without specific reference to active and/or inactive registrants, statistics about registered voters include both active and inactive registrants. In the EAC's biennial report on the impact of the NVRA, statistics about the number of "reported registrations" in North Carolina are noted as combining active- and inactive-status registrants. Table 1c of the EAC 2011–2012 NVRA report (p. 34), further notes that states can report total registrations one of three ways — only active-status voters, combining active- and inactive-status voters, or some "other" set of methods.

Figure 1. Percentage of registered population that is black
(Source: State-provided 2012 snapshot file)



65. An important trend in North Carolina voter registration over the past decade is not only the *number* of minority and white voters who are registered, but the *percentage* of voting-age residents who are registered. Taking this perspective, we see that during this period the voter registration *rates* of African Americans have climbed, to the point that African Americans are now more likely to be registered to vote in North Carolina than are whites.

66. In Table 3 below I have reported the voter registration rates for blacks and whites from 2000 to 2012 as a percentage of voting age population (VAP).[33] Between 2000 and 2012, the voter registration rate for whites fell 2.4 percentage points, from 90.2% to 87.8% of VAP; at the same time, the registration rate among blacks rose 14.2 percentage points, from 81.1% to 95.3% of VAP.

[33] Registration data (the numerator) were taken from the online summary file of voter registration statistics discussed in Exhibit 2, with the exception of 2000. In that case, the registration data are taken from the following written report, available online at the SBOE ftp site: ftp://www.app.sboe.state.nc.us/data/voterstats/20001013_by_pct.pdf. VAP estimates by race were taken from the 2000 and 2010 decennial census (100% count) and one-year American Community Survey estimates for the remaining years. The years 2002 and 2004 are not included in Table 3 because the voter registration data from these years that were available for download from the SBOE ftp site were dated either two months before the election (2002) or one month after (2004).

Table 3. Comparison of black and white voter registration rates, using state registration statistics (numerator) and Census VAP estimates (denominator).

	Black			White			
Year	VAP	Number registered	Percent registered	VAP	Number registered	Percent registered	Black pct. minus White pct.
2000	1,218,470	988,134	81.1%	4,527,155	4,082,850	90.2%	-9.1%
2006	1,356,761	1,116,818	82.3%	4,860,639	4,248,469	87.4%	-5.1%
2008	1,427,617	1,354,976	94.9%	5,067,215	4,596,476	90.7%	4.2%
2010	1,502,563	1,339,180	89.1%	5,240,438	4,534,617	86.5%	2.6%
2012	1,566,467	1,492,839	95.3%	5,385,029	4,728,853	87.8%	7.5%

67. Table 3 also reports the percentage-point difference in VAP registration rates for blacks and whites in each election year. The change in this difference from 2000 to 2012 is significant, moving from a 9.1 percentage point deficit for African Americans to a 7.5 percentage point advantage. Calculated another way, the percentage point difference in registration rates (as a percentage of VAP) has swung 16.6 percentage points in just over a decade.

68. Since 2000, the voter registration rolls in North Carolina have grown steadily, led by a surge of African American registrations. Using North Carolina's own voter registration statistics, the number of registered voters rose by 1,463,114 between 2000 and 2012.[34] The net increase of 504,705 black registrants across these dozen years means that fully 34.5% of the state's growth in voter registration is accounted for by the registration of new African American voters, despite the fact that blacks accounted for only 20.2% of the voting-age population at the beginning of this period.[35] The obverse of this fact is that 44.2% of the net growth in the voter registration rolls is due to the addition of new white registrants, despite the fact that white share of VAP was 75.1% in 2000.

[34] Table 2, above.
[35] U.S. Census Bureau, "Race for the Population 18 years and over," Census 2000 Summary File (SF 1) 100% data. Racial composition of VAP is calculated among respondents listing only one race.

Turnover ("churning") in N.C. registration files

69. Voter registration rolls in North Carolina, like any state, are dynamic. As I show below, during the two-year period leading up to the 2012 presidential election, nearly 30% of voter registration records were changed in some way.[36] Because of this dynamism, the composition of the registration rolls can change quickly as a state's demographics change; these changes can be amplified or dampened by the particularities of voter registration laws and regulations.

70. New voters enter the electorate through the inexorable process of aging and the in-migration of voting-age adults. Moreover, North Carolina has established the county as the basic unit of registration. If a registered voter moves within a county, he or she remains registered, but if the same registered voter moves to another county within the state, she may not vote until she re-registers with the new county.

71. Thus, there is a large amount of turnover in the North Carolina voter registration rolls from year-to-year, not only because of the entrance of newly eligible voters into the state, but because of the mobility of the North Carolina population. To the degree that population increases are associated with changes in the racial composition of the eligible North Carolina electorate, large amounts of turnover in the voter registration rolls can cause significant changes in the overall composition of the voter registration list in a relatively short period of time. To the degree that voters are mobile and need to re-register following an inter-county move, there are opportunities for voters who are currently registered to fall off the registration rolls due to a move.[37]

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[36] ¶ 72.

[37] African Americans in North Carolina are more likely to move between counties than are whites. See Geographic Mobility by Selected Characteristics in the United States, 2008–2012 American Community Survey 5-Year

72. The most basic set of turnover statistics in a voter registration list pertains to the number of new registrations added to the voting rolls over a given period of time, along with the number of registrations removed from the rolls. According to statistics contained in the EAC's 2011–2012 NVRA report, there was a net increase of 448,198 total registered voters in North Carolina between 2010 and 2012, from 6,207,093 to 6,655,291.[38] (This represents a 7.2% net increase.) Over the same two-year period, North Carolina processed a total of 1,127,141 new registrations (18.2% of 2010 registered voters) and removed 680,450 voters (11.0% of 2010 registered voters) from the rolls.[39] These two sets of transactions together, the new registrations and removals, amount to 1,807,591 total transactions, for a "churning" rate of 29.1%[40] over the two-year election cycle.

73. Another measure of turnover in the registration rolls is the number of distinct voter registration numbers that have been assigned to current registrants. When a voter moves from one county to another, that voter must re-register, which causes a new voter registration number (associated with the new county of residence) to be issued for the voter. Because the registration files also include a single *ncid* identification number for each voter, it is possible to trace the path of registered voters as they move across counties. Among the 6,649,208 registered voters in the 2012 snapshot file, 1,324,676, or 18.0% of currently registered voters, have

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Estimates for North Carolina. (The ACS reports that 4.1% of African Americans 1 year of age and older moved from one county in North Carolina to another within the past one year, compared to 3.3% for whites.)

[38] EAC 2011-2012 NVRA Report, p. 24.

[39] Ibid, pp. 60, 67. The state reported that new registrations accounted for 42.5% of all voter registration applications processed during the two-year period. Close behind new registrations were changes of address (985,884), which represented 37.2% of all applications processed by the state. A majority of registration removals (51.7%) were due to "moved from jurisdiction."

[40] The churning rate is calculated by dividing the sum of new registrations and removals by the number of voters registered in 2010.

registration records from more than one county.[41] Of the 2,334,817 registered voters whose earliest registration date is in 2006 or later, 174,286, or 7.5% of these more recent registrants have already moved between counties at least once and re-registered.

74. Half of North Carolina's currently registered voters have registered since 2000. This is illustrated in Figure 2, below, which shows the distribution of registration dates[42] (broken into two-year federal election cycles[43]) in two ways.[44] The left-hand panel describes the earliest registration date associated with each individual in the 2012 snapshot file whose status was either active or inactive.[45] The right-hand panel describes the registration date associated with the most recent registration record for each registered individual. In other words, for everyone registered as of the day of the snapshot file, the left-hand panel records when they first entered the voter registration database, while the second panel takes into account any subsequent registration records, such as moving between counties.

[41] Before I performed this analysis, I removed 29,397 obsolete (mostly marked "removed") records because they appeared to be duplicates. I deemed a record to be a duplicate if more than one record existed for a voter in a county with the same registration date.

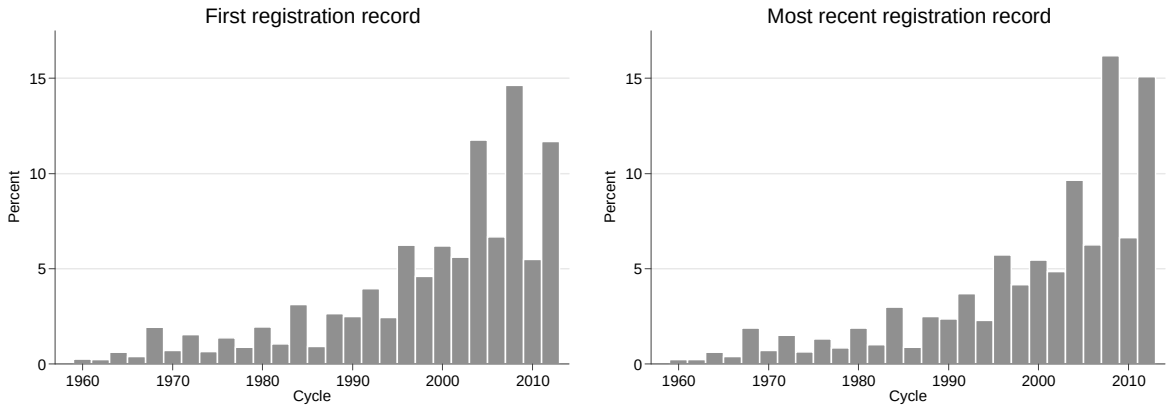
[42] This is the variable *registr_dt* in the voter file. Before conducting this analysis, I attempted to ascertain whether this variable in the voter file might be changed, especially if a voter moved or otherwise updated his or her registration. To test whether the registration date might change in the voter file, I compared the snapshot files provided by the state for the 2006 and 2012 elections, by merging the records of voters in the 2006 file with voters in the 2012 file, using the *ncid* variable to conduct the merging. Of the 7,731,972 records that matched on the *ncid* variable across the two files, 7,730,389 (99.99%) had the same registration date in the 2006 and the 2012 files.

[43] An "election cycle" marks the period between two elections of a similar type. In the study of national and state elections, there are two types of election cycles that are typically identified. The first is a "presidential election cycle" that spans four years, from one presidential election to the next. The second is a "federal election cycle" that spans two years, from one even-year election to the next. (These are called *federal* election cycles because at least one federal office, U.S. House of Representatives, is on every ballot in the November election of an even-number year.)

[44] The full data used to construct the graph are reported in Exhibit 26.

[45] Individuals are identified using the *ncid* variable.

Figure 2. Distribution of voter registration dates among voters in the state-provided 2012 snapshot file.



75. Because the North Carolina voter registration rolls are heavily populated with individuals who have registered within the past decade, shifting demographic and mobility patterns can have an impact on the composition of the voting rolls in fairly short order. For instance, these "new voters" have been more likely to be minorities than voters who joined the rolls in previous decades. Among the current registrants in the 2012 snapshot file who registered in the 2000 election cycle or earlier, 78.0% were white and 19.5% were black. Since the 2000 cycle, the percentage of new registrants who were white (65.6%) has been well below the pre-2000 figure, while the percentage of new registrants who were black (24.9%) has been well above.[46]

Documenting the growing importance of same-day registration in North Carolina

76. After the General Assembly passed the law allowing North Carolinians to register and vote at the same time, the state's voter registration landscape changed significantly. Because HB 589 eliminated the ability of North Carolinians to register during early voting, it is necessary

[46] Among post-2000 registrants, 2.9% are Hispanic.

to understand the precise days when new voters registered in the past, if we are to understand the potential impact of this change.

77. HB 589 ended the practice of allowing people to register to vote during the one-stop (early voting)[47] period, which previously began 19 days before the general election, ending 3 days before the election.[48] North Carolina had begun allowing voters to register and vote on the same day at one-stop absentee voting locations in 2007, first affecting federal elections in 2008.[49] Therefore, the best place to start in understanding the effects of the law — including the likely consequences of repealing this practice — is to compare voter registration patterns for the 2004 election cycle (before same-day-registration) with the 2008 election cycle (with same-day-registration). (See Exhibit 27 for a discussion about why a comparison of presidential election years provides the clearest view in analyzing the influence of changes to election laws on registration and turnout.)

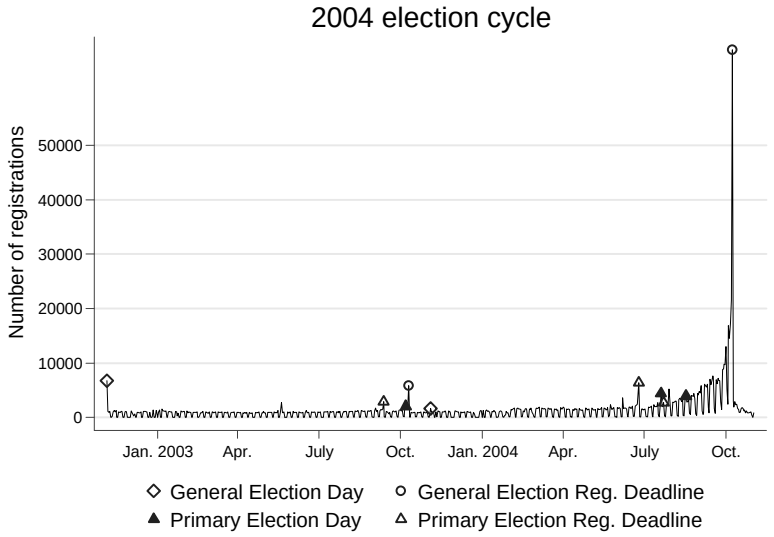
A broad view of day-by-day registration statistics

78. I start by examining the number of new voter registrations recorded during the two-year period leading up to the 2004 general election, which is before same-day registration was allowed. The graph in Figure 3 reports the number of new voter registrations recorded *each day* during the two-year period leading up to the 2004 general election. The period begins on General Election Day 2002 and ends the day before General Election Day 2004.[50] To help orient the analysis around important deadlines, the graph uses a series of tokens to depict November

[47] North Carolina generally refers to its early voting period as one-stop absentee voting. In this report, I use the terms "early voting" and "one-stop absentee voting" interchangeably.
[48] HB 589 also shortened the early voting period from 17 days to 10 days. See S.L. 2013-385 § 25.1
[49] S.L. 2007-253.
[50] Whether one begins the period on the previous November General Election Day or the day after is, to some degree, arbitrary. I have chosen to begin with the previous November General Election Day because North Carolina has never had Election Day Registration, and thus it has always been the case that someone registering on one General Election Day could not actually vote until the next election.

general elections dates, primary election dates, and the relevant voter registration deadlines that were associated with each election.[51]

Figure 3. Number of registrations submitted each day for the two-year 2004 election cycle (Source: State-provided 2012 snapshot file)

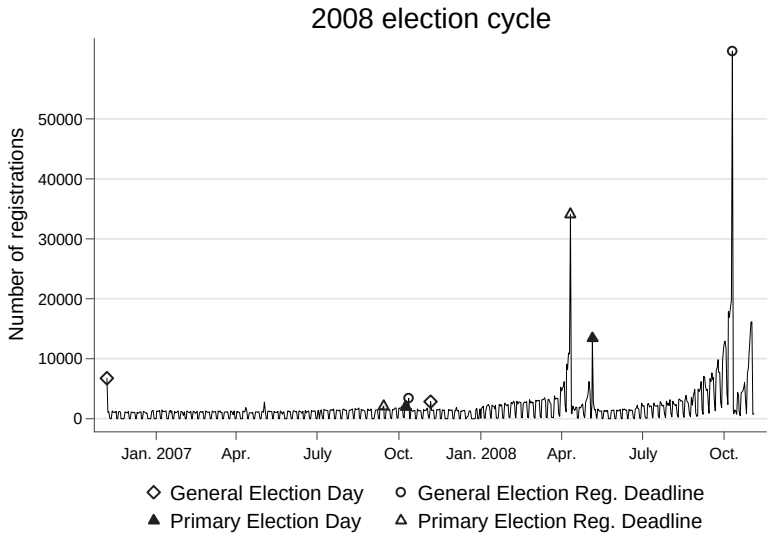


79. With the exception of the small spike at the start of the period, which was the 2002 General Election Day, the graph hovers in a narrow range barely above the *x*-axis (creating a jagged pattern due to the presence of weekends) until mid-summer 2004. (There are some minor exceptions associated with elections and voter registration deadlines.) Starting around the beginning of July 2004, the number of daily registrations rises exponentially, until it reaches a spike on the deadline associated with the 2004 General Election. (That one day, Friday October 8, 2004, saw 67,595 registrants added to the rolls, which represented 6.8% of new registrations for the entire two-year election cycle.) Following the registration deadline, the number of daily registrations plummets to earlier levels for the remaining 24 days preceding the election.

[51] The voter registration deadline in North Carolina is 25 days before an election. N.C.G.S. § 163-82.6(c).

80. In contrast, Figure 4 below provides the comparison with the two-year cycle leading up to the 2008 general election, the first following the passage of the same-day registration law. Note that the 2008 election cycle pattern starts out similar to the 2004 cycle. There is a spike on the first day of the period, General Election Day 2006, followed by a long period in which the number of daily registrations hovers around the horizontal axis in the same jagged pattern seen before.

Figure 4. Number of registrations submitted each day for the two-year 2008 election cycle (Source: State-provided 2012 snapshot file)



81. However, there are two patterns in 2008 that stand in contrast with 2004. The first is associated with the May 6, 2008 presidential primary, where there is a large spike on the registration deadline 25 days before the primary, a small build-up in registrations as the primary approaches and the same-day registration procedure is in effect, and then another spike on primary day itself.[52]

82. The second departure from the 2004 pattern is evident in the period between the registration deadline 25 days before General Election Day and General Election Day itself.

[52] North Carolina did not have presidential primaries in 2004.

Right after the deadline, the number of registrations plummets, but then picks up again as General Election Day approaches. As we shall see, the vast majority of these were same-day registrations allowed under the then-new same-day registration law.

83. For reference, graphs similar to Figures 3 and 4 are produced for all election cycles from 2002 to 2012 in Exhibit 28.

Daily registration patterns during the same-day registration window

84. The changes wrought by HB 589 draw our attention to the period after the General Election Day voter registration deadline. Before the same-day registration law was passed in 2007, anyone registering within 25 days of the General Election (the "blackout period") would have to wait until the *next* election to vote. Thus, a new voter registering on the day after the registration deadline in 2004 would have to wait to cast his or her first vote for President in 2008.[53]

85. Not surprisingly, before the same-day registration law passed in 2007, very few new voters registered after the General Election Day deadline, whereas after the law passed, the number of new registrations after the General Election Day registration deadline increased substantially. These patterns have already been illustrated for 2004 and 2008 in Figures 3 and 4 above. The effects of the creation of a same-day registration period are also clearly seen if we focus on daily registration patterns after the registration deadline associated with General Elections.

86. The first, and perhaps simplest, way to show the effect of same-day registration is to report the number of registrations that occurred during the 17-day same-day-registration window, comparing those numbers with what happened during the same 17-day period before

[53] Of course, such a new registrant would be eligible to vote in any election held more than 25 days later, such as a municipal election or the next off-year federal election.

same-day registration began. Measured in percentage terms, same-day registration increased the pace of registrations by over a factor of 4 in presidential election years,[54] and over a factor of 2 in midterm congressional years.[55] (See Table 4, below.[56])

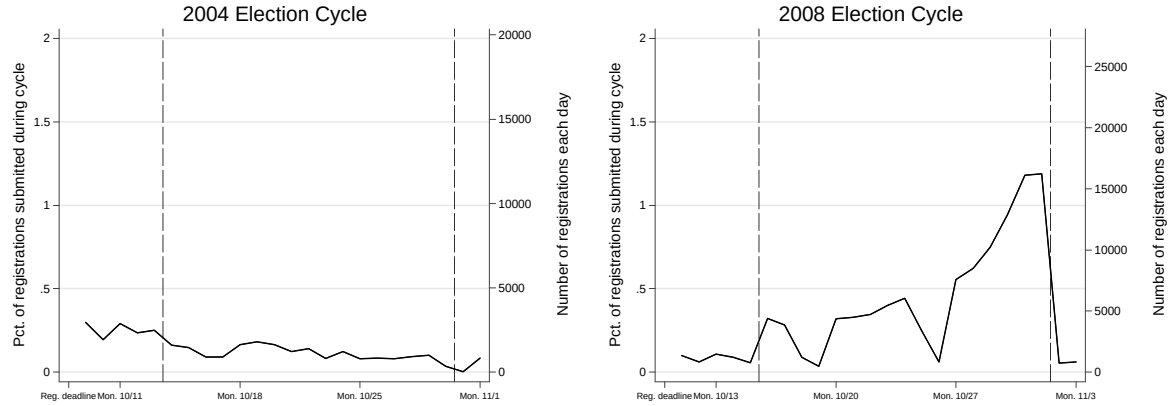
Table 4. Number of voter registrations filed during 17-day registration window created by same-day registration, 2002-2012
(Source: State-provided 2012 snapshot file)

		Registrations during 17-day same-day registration window	
Election year	Total registrations during two-year cycle	Total	As pct. of all registrations
2002	580,479	11,786	2.03%
2004	989,654	19,252	1.95%
2006	588,954	13,720	2.33%
2008	1,365,094	110,719	8.11%
2010	529,575	30,612	5.78%
2012	1,112,412	97,665	8.78%

87. The two graphs in Figure 5 below help to show the effect of the same-day registration law in even greater detail, by focusing on *each day* of the 25-day period after the General Election Day registration deadline in 2004 and 2008. Each graph shows the number of registrations submitted each day, expressed both as a percentage of all registrations submitted during the two-year election cycle (on the left-hand axis) and the number of total registrations (on the right-hand axis). The vertical lines are included to show the period of same-day registration that was enacted in 2007.[57]

[54] The calculation was done this way: Before same-day registration, 1.9% of all registrations in the two-year election cycle happened during the 17-day window in 2004; after same-date registration these rates were 8.1% in 2008 and 8.8% in 2012, which is an average of 8.45% for these two elections. The ratio of 8.45/1.9 = 4.45.
[55] The logic of the calculation is the same as the previous footnote. The midterm average was 2.15% before same-day registration and 5.8% afterwards. The ratio of 5.8/2.15 = 2.70.
[56] The data in Table 4 are taken from Exhibit 29.
[57] I have reported the actual number of new registrants each day of the "blackout period" from 2002 to 2012 in Exhibit 29.

Figure 5. Number of registrations submitted each day following the registration deadline for the 2004 and 2008 November general elections.
(Source: State-provided 2012 snapshot file)



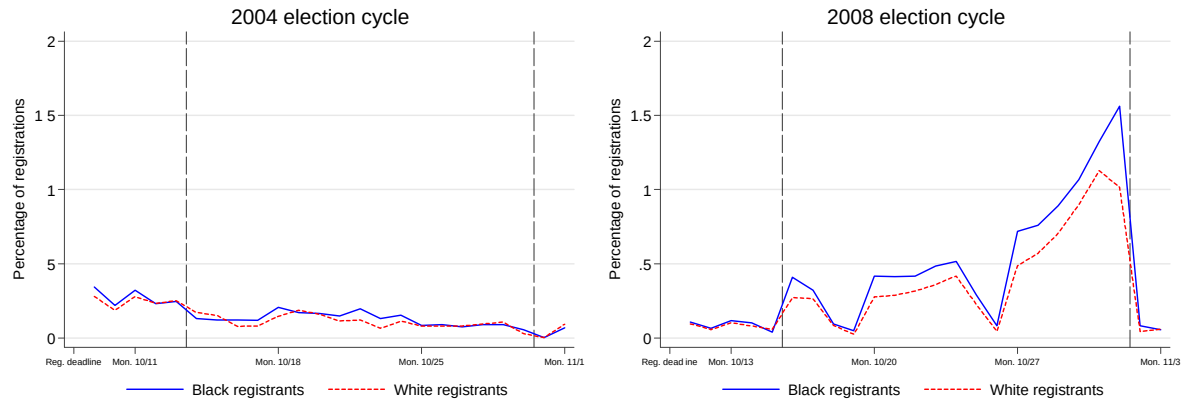
88. The patterns in the two graphs are quite different. In 2004, the number of registrations in the post-deadline period was low throughout, and declining throughout the period. In 2008, the number of new registrations was also very low in the short five-day period between the registration deadline and the start of same-day registration — in percentage terms, it was lower than it had been in 2004. Once the one-stop voting period began, and same-day registration became possible, however, the number of new registrations was much greater than in 2004. On the first day of early voting in 2008, 4,407 individuals registered to vote, compared to 1,603 on the equivalent day in 2004. Because few early voting sites were open on the weekend, there are dips in registrations toward the end of each week. However, in general, the number of new registrations increased at an increasing rate throughout the early voting period.

89. For reference, the full set of graphs for the elections for 2002 to 2012 appears in Exhibit 30. (To see that the 2008 pattern was not just an anomaly due to the novelty of the new same-day registration period, note that the graph for 2012 is quite similar to the graph for 2008.)

Registration patterns by race under same-day registration

90. African American and white voters responded to the opportunities presented by the 2007 same-day registration law to different degrees. Eligible black and white voters all registered at greater rates during the same-day-registration period in both 2008 and 2012 than they had in 2004. However, this registration rate difference was significantly greater for blacks than for whites. This is illustrated in the following two graphs in Figure 6,[58] which show registration rates by day after the General Election Day registration deadline, this time breaking down those rates by race.[59]

Figure 6. Percentage of registrations submitted each day following the registration deadlines for the 2004 and 2008 general elections, by race.
(Source: State-provided 2012 snapshot file)



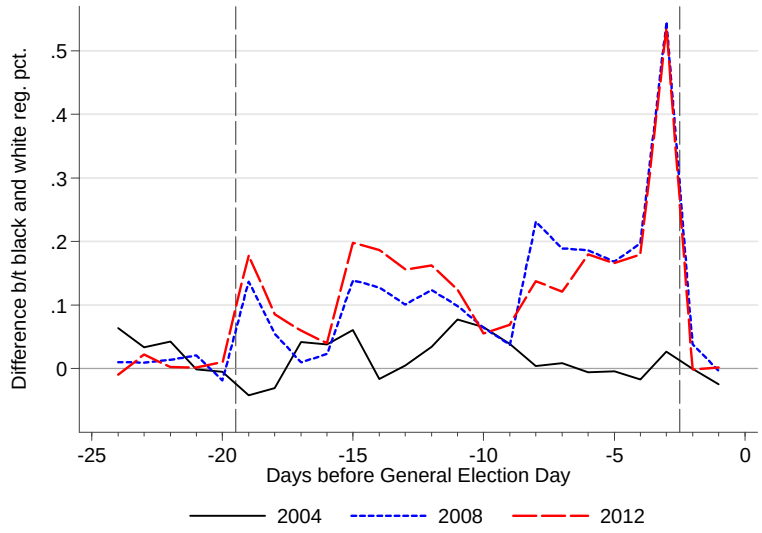
91. In 2004, before the passage of the same-day registration law, the relative number of blacks and whites who registered during the post-deadline period was essentially the same, and declining, for each day leading up to General Election Day. The pattern is quite different for 2008, after the institution of same-day registration. On virtually every weekday during the one-

[58] For reference, the data graphed in Figure 6 are reported in Exhibit 31.
[59] These percentages are calculated by dividing the number of voters (of a particular race) who registered on a particular day by the total number of voters (of a particular race) who registered during the entire election cycle, and then multiplying by 100. Of course, no one who registered during this period could vote in the 2004 November General Election. Note that unlike Figure 5, it is not possible to label the right-hand axis with the raw number of registrations each day because the number is different for blacks and whites.

stop-voting period, blacks registered at a significantly higher rate than whites. (On the weekends, which had very small numbers of registrants, black and white registration rates were much more similar.) The same was true in 2012. (For the sake of reference, graphs for the years 2002 to 2012 are included in Exhibit 32. As before, note that the pattern of the graph for 2012 is quite similar to the graph for 2008.)

92. Figure 7 provides a visual summary of the differential use of same-day registration by black and white voters in North Carolina that I have been discussing. The graph reports the black-white difference in the use of same-day registration for each day in the run-up to the November general election in presidential election years. Before same-day registration (2004), there is no discernible preference for registering during the early voting period — which is not surprising, since registrants during this period could not vote in the upcoming presidential election. After same-day registration, there is a clear relative preference for same-day registration among African Americans as compared to whites for each day of the early voting period. By ending same-day registration, North Carolina has removed an important vehicle through which African Americans have been able to add their names to the state's voter rolls and participate in elections.

Figure 7. Black-white difference in the percentage of registrations submitted each day following the registration deadline for presidential election years
(Source: State-provided 2012 snapshot files)



93. In Exhibit 33, I provide a comparison of the summary graph in Figure 7 that describes the pattern during the midterm elections. As discussed in Exhibit 27, North Carolina does not have statewide races on the ballot in every midterm congressional election, and thus turnout and mobilization levels can be variable from election to election. The graph for the two pre-same-day-registration midterm years in Exhibit 33 fluctuates around the horizontal axis, showing that neither blacks nor whites preferred to register during the period right before federal elections. After same-day registration came to be implemented, the graph for 2010 illustrates that African Americans showed a slight preference for registering during this period early in the same-day registration window, and a strong preference in the last week of the same-day registration period.

Detailed accounting of the effects of ending same-day registration, using data from the 2012 election

94. Understanding the bottom-line impact of eliminating same-day registration ultimately requires a close accounting of when voters in recent years have registered in anticipation of presidential elections. I end this section of the report by describing how many voters whose first presidential election was 2012 registered during the same-day registration period associated with that election. In doing so, I show that the percentage of newly registered African Americans who availed themselves of the same-day-registration opportunity was significantly greater than the percentage of newly registered whites.

95. To proceed with this accounting, we first must partition the four years preceding the 2012 general election into five periods that determine whether 2012 was the first presidential election in which a new registrant could vote. These periods are given in Table 5 below.

Table 5. Registration periods preceding the 2012 November election

Period no.	Dates	Description
1	Oct. 11, 2008 - Oct. 15, 2008	New registrants are eligible only for the 2012 presidential election.[a]
2	Oct. 16, 2008 - Nov. 1, 2008	One-stop voters who register using same-day-registration are eligible for the 2008 presidential election; other new registrants are eligible only for the 2012 presidential election.[a]
3	Nov. 2, 2008 - Oct. 12, 2012	All new registrants are eligible for the 2012 presidential election.
4	Oct. 13, 2012 - Oct. 17, 2012	New registrants are eligible only for the 2016 presidential election.[a]
5	Oct. 18, 2012 - Nov. 3, 2012	One-stop voters who register using same-day-registration are eligible for the 2012 presidential election; other new registrants are eligible only for the 2016 presidential election.[a]

[a] These registrants would also be eligible for any elections held after the 25-day blackout period, particularly state and local elections and the midterm federal election.

96. The deadline for voter registration in *2008* was Friday, October 10, 2008, because October 10 was 25 days before General Election Day, which was November 4, 2008. Therefore,

anyone registering the next day, October 11, 2008, was ineligible to vote in the 2008 presidential election, and had to wait until 2012 to vote for president.[60] Thus, Period 1 starts on October 11.

97. The next relevant date is the start of the one-stop voting period, which begins 19 days before General Election Day. In 2008, that date was Thursday, October 16, 2008, which becomes a boundary between the first two periods described in the table above. During Period 1, which starts on October 11, 2008 and ends the day before the start of early voting, October 15, 2008, no one who registers may vote in the 2008 presidential election. In Period 2, which starts on October 16, 2008, new registrants may vote in the 2008 presidential election, *so long as they are also voting a one-stop absentee ballot.* Any new registrant who does not vote a one-stop absentee ballot may not vote in the 2008 presidential election, but must wait until 2012 to vote for president (e.g., individuals who registered at the DMV during this period). This fact is recorded in the Description column associated with Period 2.

98. The 2008 one-stop voting period ended three days before General Election Day, on Saturday, November 1, 2008. This sets the second boundary for Period 2. After this date, no new registrants may register and then vote in the 2008 presidential election — they must all wait until 2012 to vote for president.

99. Thus, the long period from November 2, 2008 to October 12, 2012 (Period 3) represents a time when any new registrant will be eligible to vote in the 2012 presidential election. The period starts on the day after the end of the same-day-registration period for 2008, ending on the registration deadline for the 2012 presidential election, calculated as before. (Twenty-five days before the 2012 General Election Day, November 6, 2012 was Friday, October 12, 2012.)

[60] Of course, such a person would be eligible to vote in other North Carolina elections after the 2008 General Election, including any state and local elections past the 25-day window and the 2010 federal election.

100. Period 4 is then the short window in 2012, between the long regular registration period and the same-day-registration period, when no new registrants may vote in the 2012 presidential election. Period 5 is the same-day-registration period associated with the 2012 presidential election, beginning 19 days before General Election Day (Thursday, October 18, 2012) and ending 3 days before General Election Day (Saturday, November 3, 2012).

101. Under North Carolina law, the following new registrants were first eligible to vote in the 2012 presidential election: All new registrants from Periods 1 and 3, non-same-day registrants from Period 2, and same-day registrants from Period 5. (No registrants from Period 4 could vote in the 2012 presidential election.)

102. Table 6 below accounts for new registrants in each of these periods, also noting whether they were first eligible to vote for president in 2012.

Table 6. Calculation of when new registrants can first vote in a presidential election
(Source: State-provided 2012 snapshot and voter history files)

		Presidential election in which new registrants are first eligible			
Period no.	Dates	2008	2012	2016	Total
1	Oct. 11, 2008 - Oct. 15, 2008	-	5,653	-	5,653
2	Oct. 16, 2008 - Nov. 1, 2008	104,163	6,556	-	110,719
3	Nov. 2, 2008 - Oct. 12, 2012	-	1,543,326	-	1,543,326
4	Oct. 13, 2012 - Oct. 17, 2012	-	-	2,417	2,417
5	Oct. 18, 2012 - Nov. 3, 2012	-	95,689	1,976	97,665
	Total	104,163	1,651,224	4,393	1,759,780

103. I examined the racial characteristics of registrants during each of these periods and discovered that whites and blacks registered at different rates in each period. I begin this analysis with Table 7 below, which records the racial breakdown of registrants according to the periods identified above. (Periods 2 and 5 are subdivided, according to whether the registrants

would be able to vote in the upcoming presidential election, or would have to wait four years to vote for president.)

Table 7. Distribution of new registrations, by race, ahead of the 2012 presidential election.
(Source: State-provided 2012 snapshot and voter history files)

		Number				Percentage		
Period no.	Dates	Total	Black	White	All other	Black	White	All other
1	Oct. 11, 2008 - Oct. 15, 2008 (2012-eligible)	5,653	1,695	3,275	683	30.0%	57.9%	12.1%
2A	Oct. 16, 2008 - Nov. 1, 2008 (2008-eligible)	104,163	36,976	57,375	9,812	35.5%	55.1%	9.4%
2B	Oct. 16, 2008 - Nov. 1, 2008 (2012-eligible)	6,556	1,721	4,067	768	26.3%	62.0%	11.7%
3	Nov. 2, 2008 - Oct. 12, 2012 (2012-eligible)	1,543,326	383,903	988,821	170,602	24.9%	64.1%	11.1%
4	Oct. 13, 2012 - Oct. 17, 2012 (2016-eligible)	2,417	689	1,302	426	28.5%	53.9%	17.6%
5A	Oct. 18, 2012 -- Nov. 3, 2012 (2012-eligible)	95,689	30,612	48,824	16,253	32.0%	51.0%	17.0%
5B	Oct. 18, 2012 -- Nov. 3, 2012 (2016-eligible)	1,976	515	934	527	26.1%	47.3%	26.7%
	Total	1,759,780	456,111	1,104,598	199,071	25.9%	62.8%	11.3%

104. A total of 1,759,780 individuals registered to vote during the four-year registration period taken as a whole, including 456,111 blacks and 1,104,598 whites. (There were 199,071 registrants of other races.) Blacks accounted for 25.9% of new registrants and whites accounted for 62.8%. (New registrants of all other races accounted for 11.3%.)

105. The period when blacks were the least likely to be registrants (24.9%), compared to their overall composition of the new registrant pool, was the long period that stretched from November 2, 2008 to October 12, 2012 (Period 3). Conversely, whites were over-represented in the new registrant pool during this period (64.1%).

106. On the other hand, blacks were over-represented during the same-day-registration period associated with the 2012 election (Period 5A), accounting for 32.0% of new registrations during this period; whites were under-represented, accounting for 51.0% of new registrations. (The registration patterns of members of other races, taken as a whole, did not vary across periods.) Blacks were also over-represented in the same-day registration period that preceded the *2008* election — they represented 35.5% of the registrant pool during that period; whites represented 55.1%.

107. By their actions, African Americans clearly expressed a preference for registering during the early voting periods in 2008 and 2012, compared to whites.

Likely consequences of ending same-day registration

108. The analysis of this section demonstrates that the most likely effect of ending same-day registration will be the erection of a barrier to voting that is higher for blacks than it is for whites. Relatively speaking, more blacks than whites have expressed a preference for registering during the early voting period which, due to the principle of revealed preferences,[61] shows that same-day registration is preferred by more blacks than whites compared to registration through other means.

109. There will likely be another, more subtle effect of the end of same-day registration that will also disadvantage eligible black voters: By ending the same-day-registration period, North Carolina significantly expanded the period immediately preceding an

[61] The principle of revealed preferences is one of the most influential ideas in economics, associated with the work of Nobel Prize winning economist Paul Samuelson. It is based on the simple idea, expressed by Samuelson when he wrote "if an individual selects batch one over batch two, he does not at the same time select two over one." In other words, if I am a utility maximizer, and I choose an apple over an orange when those are my only two options, one can infer that I do not prefer an orange over an apple.

election in which new registrants will be barred from voting until the following election. The best evidence is that these people would disproportionately be African American.

110. Some people register in "blackout periods" in the weeks preceding elections. Based on research about voter registration in the political science literature, it is clear that many of the registrations that occur during blackout periods are people who are not normally attentive to public affairs, who have become attuned to politics during the presidential election season — a brief period every four years where matters of politics and elections dominate a wide variety of media channels.[62] Evidence of this effect is demonstrated by the large numbers of registrations that are logged on the last day of the long voter registration period (Period 3) for 2012 — 43,693, compared to a daily average of 1,041[63] during the rest of the long Period 3.

111. Research presented by Street et al. at the 2013 annual meeting of the American Political Science Association also illustrates how proximity to elections causes greater interest in registration — and how that interest can continue past the registration deadline.[64] Street et al used Web search data on the term "voter registration" to gauge how many people in a state were interested in voter registration on a daily basis before and after voter registration deadlines related to the 2012 presidential election.

112. Street et al were able to gather daily voter registration statistics from the registration records of 16 states during the 2012 pre-election period. (One of these states was North Carolina.) They show that during the regular registration period, there is a very high correlation between the number of Web searches conducted in a state about voter registration on

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[62] James G. Gimpel, Joshua J. Dyck, and Daron R. Shaw, "Election-year stimuli and the timing of voter registration," *Party Politics* 13 (2007): 351–374.

[63] The value 1,041 was calculated as follows: The number of people who registered to vote from November 2, 2008 to October 11, 2012 was 1,499,633. The number of days from November 2, 2008 to October 11, 2012 (inclusive) was 1,440; 1,499,633/1,440 = 1,041.

[64] Alex Street, et al, "Extending voter registration deadlines would enfranchise millions of Americans," paper presented at the 2013 annual meeting of the American Political Science Association, Chicago, Illinois.

a daily basis and the number of people who registered to vote.[65] In the states that allowed Election Day Registration (EDR),[66] both Web search activity and registration activity peaked on General Election Day. For states without EDR, Web search activity on voter registration continued after the deadline and also spiked on General Election Day — a day on which people could not register and then vote in that election.

113. Based on the statistical modelling in their paper, Street et al predict that nationwide, if EDR had been in effect in all states, 3.6 million additional Americans would have registered. In the case of North Carolina, they estimate that if the same-day registration period had been extended to General Election Day, an additional 40,000 North Carolinians would have registered.[67]

114. Using data from Google Trends, I was able to replicate the time series reported by Street et al in the case of North Carolina. The solid line in Figure 8 shows the relative number of Google searches that originated in North Carolina during 2012 that searched for the search terms "voter registration" or "register to vote."[68] (The data that are graphed in Figure 8 are reported in Exhibit 34.) The graph is "normalized" so that the maximum value is 100, which is associated with the number of searches that occurred on the week with the most search activity on the term that was the more-common search target.[69] The other data points are scaled from 0 to 100 proportionately.

115. The dashed line in Figure 8 shows the number of new voter registrations during 2012. So that the two time series can be compared directly, I have also normalized the trend, so

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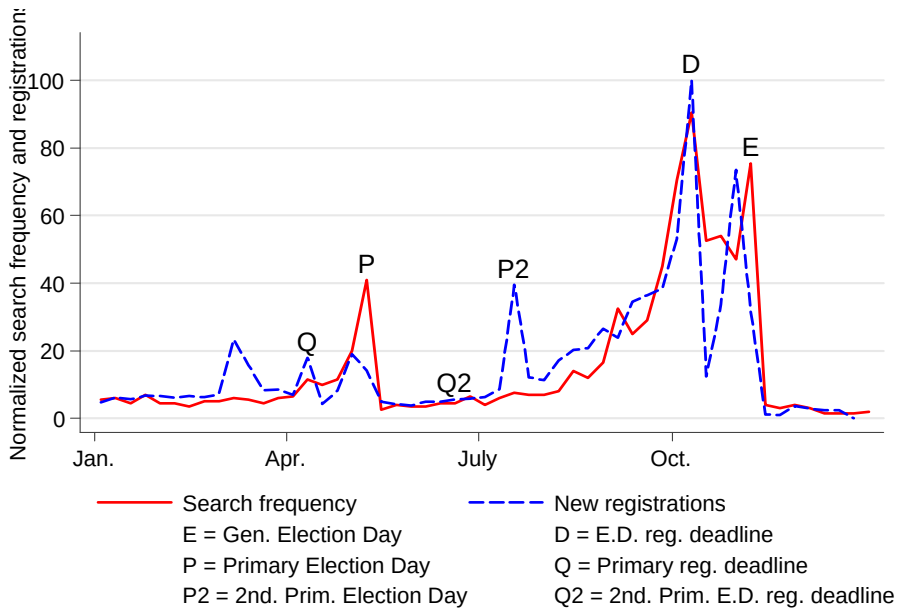
[65] The Spearman rank-order correlation coefficient was .85 ($n = 742$, $p < .01$). See Street et al, p. 9.
[66] North Carolina was not coded as an EDR state because it did not allow registration on Election Day itself.
[67] Street et al, p. 45. The 90% prediction interval for North Carolina was [10,000, 115,000].
[68] These are the search terms used in Street et al. See p. 7.
[69] The search term "voter registration" was a more common search term than "register to vote." The graph plotted in Figure 8 is the average of the two normalized time series that described the frequency of searching on "voter registration" and "register to vote."

that the week with the fewest registrations is assigned a value of 0, the week with the most registrations is assigned a value of 100, and all other weeks are scaled accordingly.

Figure 8. Relative frequency of Google searches for voter registration information and number of new voter registrations in North Carolina on a weekly basis, 2012



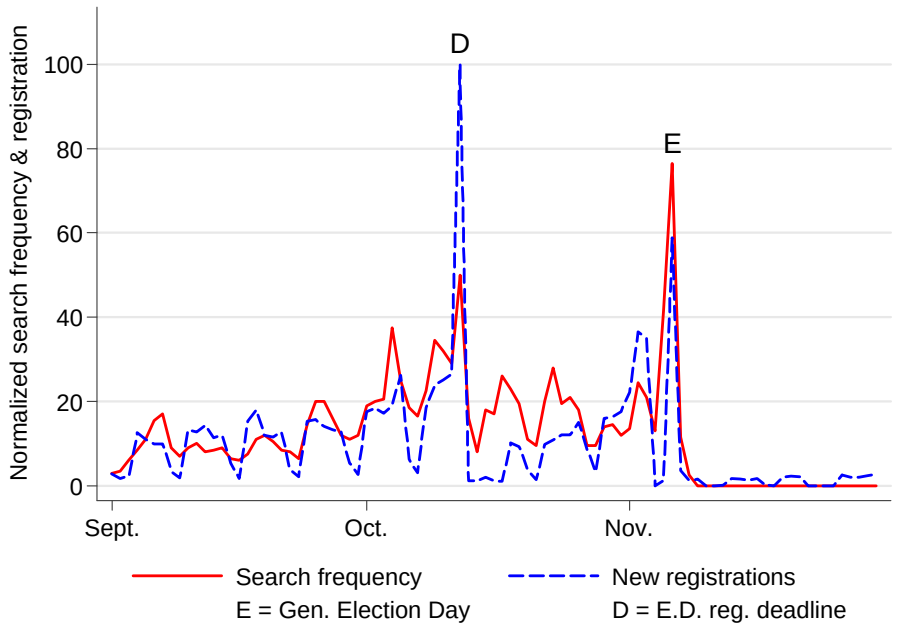
116. There is a strong correlation between the number of search engine queries and the actual number of completed registrations.[70] The correlation is imperfect. For instance, a large number of new registrations came in during the week of the second primary in July, when there was a lull in search activity. Still, the correlation is high enough that it demonstrates the utility of this approach.

117. The search engine data in Figure 8 are reported by Google in one-week increments, so it is not possible to hone down to search frequency on particular days in this analysis.[71] However Google Trends allows the downloading of daily trend data for three-month periods. In Figure 9 I take advantage of this fact by showing daily search volume on "voter

[70] The Pearson correlation coefficient describing the degree of linear relationship between the two time series is .81.
[71] This imprecision is probably responsible for the mis-match of peaks of search engine and registration activity around General Election Day itself.

registration" and "register to vote" for the months of September, October, and November 2012. (The plotted data are reported in Exhibit 35.)

Figure 9. Relative frequency of Google searches for voter registration information and number of new voter registrations in North Carolina, on a daily basis September – November, 2012



118. Again, there is a very high correlation between web engine search activity and actual registration activity.[72] This evidence illustrates that many people become interested in registering to vote long past the time that the registration deadline has passed — note that the day with the greatest search activity on "voter registration" in North Carolina occurred on General Election Day itself, for instance. This indicates that leaving open the possibility to register after traditional early deadlines will bring in new registrants who would otherwise have been unable to vote. Nor should it be surprising that academic research has shown that allowing voters to register on General Election Day itself boosts turnout by between 3 and 5 percentage points.[73]

[72] The Pearson correlation coefficient measuring the linear relationship between the two time series is .73.
[73] See, for instance, Stephen Ansolabehere and David M. Konisky, "The introduction of voter registration and its effect on turnout," *Political Analysis* 14 (2006): 83–100.

119. For the great majority of voters, it is the presidential election that prompts people to register. In order to register, people must learn how to register. Their research can range from typing in "how do I register to vote in North Carolina" into a search engine,[74] to making a mental note of the information from a poster or public service announcement, to being given a voter registration form by a volunteer sitting at a table in front of a grocery store.

120. As a general matter, the more formal education one has, the more likely one will be able to effectively search for information about voter registration, or to remember the information stated by the media. In addition, we know from political science research that the more education one has, the more likely one will be to take an interest in public affairs,[75] which may prompt people to register to vote without the priming effect of an imminent presidential election. It follows from this literature that the less education one has, the more one is likely to be motivated to register by increasing social attention to politics as elections approach — even to the point of registering when the possibility of voting in the upcoming election is foreclosed.

121. Knowing that African Americans in North Carolina possess, on average, lower educational attainment than whites,[76] it would be reasonable to predict that African Americans would be more likely to register in the blackout periods, when the election rolls are closed for new registrants who will be allowed to vote in the upcoming presidential election. This was the experience in North Carolina before same-day-registration was implemented. Based on my

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[74] On February 8, 2014 I typed this phrase into the Google search engine, after setting my location to be Charlotte, North Carolina. The top "hit" was not the State Board of Elections, but the web site for the North Carolina Center for Voter Education (ncvotered.com). Among the top-five hits, two were from the same center, two were associated with the SBOE, and one was a link to the National Conference of State Legislatures (NCSL). This illustrates what election administrators are increasingly discovering, which is that voter registration information is coming less-and-less from official sources, and often comes from unofficial, and even out-of-state sources.

[75] Sidney Verba, Kay Schlozman, and Henry E. Brady, *Voice and Equality: Civic Voluntarism in American Politics,* Cambridge: Harvard University Press, 1995.

[76] Among the population 25 years and over, 49.4% of blacks, but only 39.2% of whites, had attained an education of high school graduation or less (including GED). The percentage of blacks with a bachelor's or graduate degree was 17.2%, compared to 30.2% for whites. See 2012 American Community Survey 1-year estimates.

analysis of the voter registration rolls, I found that 22.6% of registrants during the four years preceding the 2004 presidential election (including General Election Day itself) were black.[77] In contrast, the 28,476 black voters who registered during the 25-day blackout period prior to the 2004 General Election Day constituted 30.6% of voters who registered during this period. The evidence in this section strongly suggests that had same-day registration been in effect in 2004, almost all of these 28,476 black registrants would have been allowed to vote that year. It is reasonable to predict that a similar number of black residents will be unable to vote in 2016 because of the reintroduction of the 25-day registration blackout period, and that this number will represent a significantly larger fraction of black voters than the fraction of white voters who will be similarly affected.

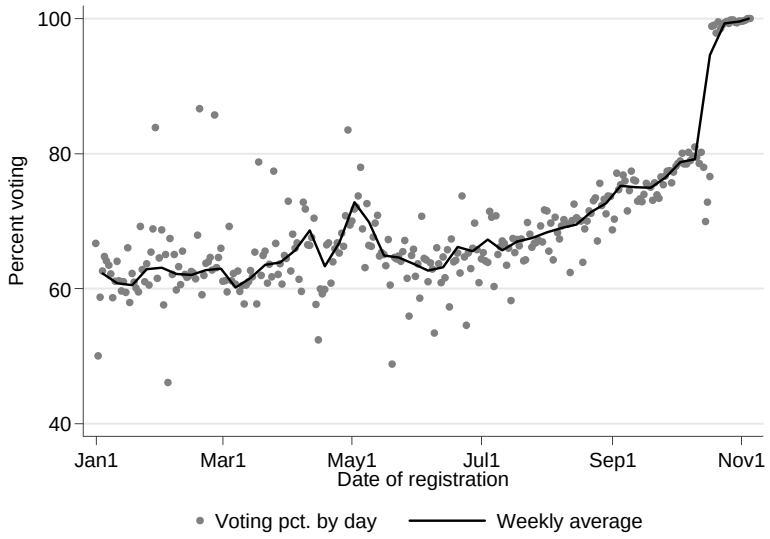
Summary and conclusion

122. In providing a summary for this section, the first thing to note is that the same-day-registration period has a particularly important effect on elections because those who register during this period vote at almost 100% levels. Those who register at other periods do not. This is illustrated in the following graph (Figure 10), which plots the percentage of new registrants[78] in 2012 that ended up voting in the 2012 presidential election, displayed by the day on which they registered. (To assist in discerning the overall pattern, I have superimposed the weekly average of turnout rates.) The pattern follows that studied by Gimpel, Dyck, and Shaw: the closer to Election Day one registers, the more likely one is to vote.[79] But, there is a bonus to this

[77] This statistic is based on racial data about all registrants from the day after General Election Day 2000 (November 8, 2000) to General Election Day 2004 (November 2, 2004).
[78] To focus our attention on new registrants, I excluded all registrants during 2012 who had more than one registration record associated with their *ncid* number.
[79] See Gimpel et al, supra n. 62.

pattern: tying registration and voting together boosts the likelihood of voting by 20 percentage points.

Figure 10. Percentage of new registrants in 2012 who turned out to vote in the 2012 presidential election
(Source: State-provided 2012 snapshot and voter history files)



123. Thus, same-day registrants are not just any registrants, because they vote at unusually high rates. This fact makes the other points made in this section even more significant. Those other points are these:

124. Voter registration rates among minority voters in North Carolina have surged in the past decade, compared to registration rates of whites. African Americans are now registered at a greater rate than whites in the state.

125. The introduction of same-day-registration after 2007 caused a surge of registration during the early voting period in North Carolina. Between the presidential elections of 2008 and 2012, the 17-day same-day-registration period preceding the 2012 election constituted one of the most intense sustained registration periods of the entire four-year presidential election cycle.

126. African Americans are significantly more likely to register during the same-day registration period than whites.

127. The elimination of the same-day-registration period will clearly cause a higher fraction of blacks who will be interested in voting in 2016 to be unable to vote, compared to white (potential) voters.

128. Because the turnout rates of voters who register before the same-day-registration period are generally no higher than 80% (see Figure 10), it is reasonable to assume that even if everyone in 2016 who *might have* registered during a same-day registration period instead registers during the regular registration period, at least 20% of these registrants will end up not voting. This is virtually guaranteed to reduce the number of African Americans who vote in 2016 by at least 6,000.[80]

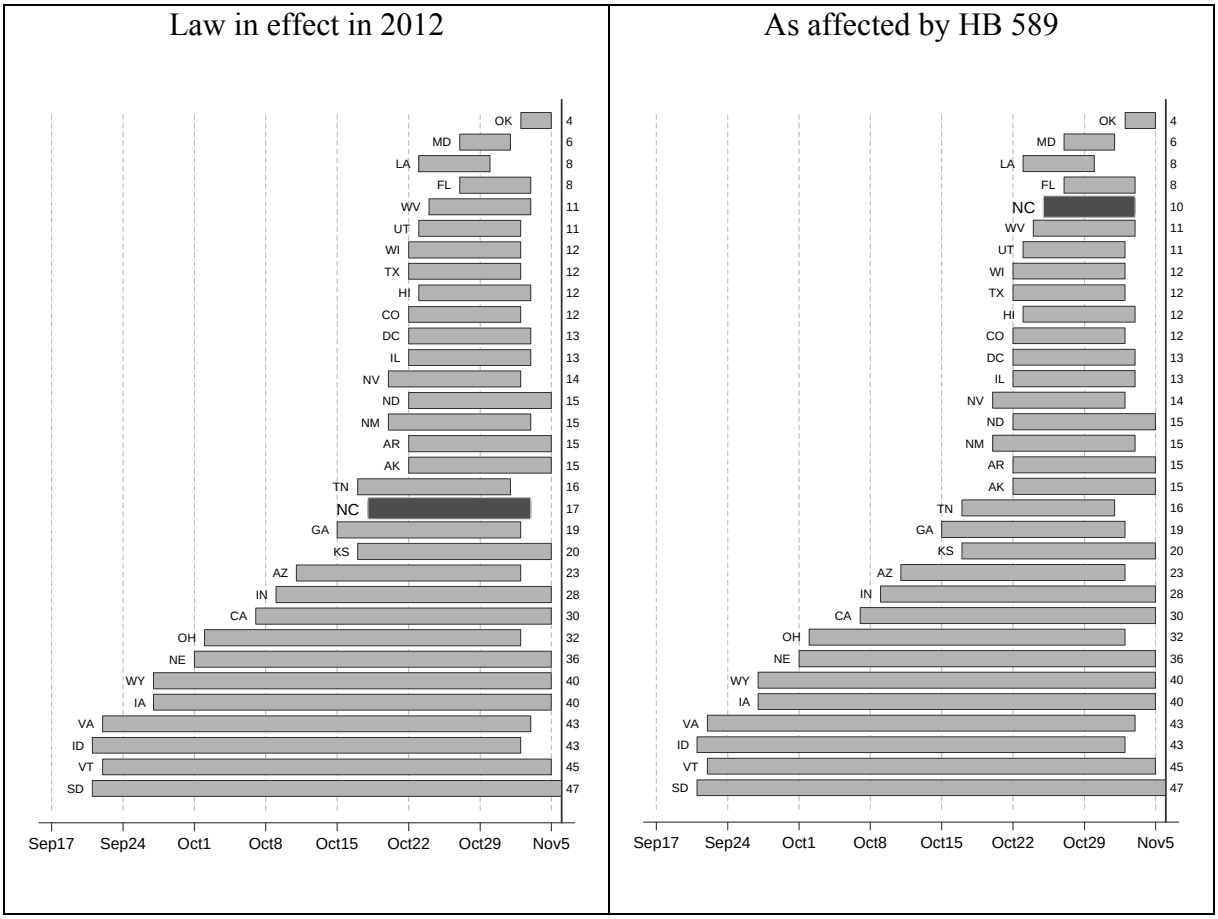
Narrowing the Early Voting Window in North Carolina

129. HB 589 significantly reduces the number of days available for early voting in North Carolina — so much so that it moves North Carolina from the middle-of-the-pack of states that offer early voting (in terms of how many days are available), to one of the most restrictive. (See Figure 11.)

130. Early voting has grown rapidly in North Carolina over the past decade, to the point that in the 2012 presidential election, most votes were cast in early voting centers before Election Day. The use of early voting among African Americans has grown at a much faster clip than for whites. In both 2008 and 2012, roughly 70% of African Americans voted early, in contrast to the 13% who did so in 2004; in 2008 and 2012, just over half of whites voted early, and 20% had done so in 2004.

[80] The calculation is performed as follows: In 2012, 30,612 African Americans registered during the same-day registration period; 20% of this is 6,122.

Figure 11. Timeline of early voting in the 2012 presidential election
(Source: Early Voting Information Center[a])



Note: The bars represent the opening and closing dates of early voting in the indicated states. The numbers along the vertical axis reflect the number of calendar days between the first and last day of early voting. The right-hand panel reflects where North Carolina would be with the reduction in early voting days established under HB 589.

[a] http://earlyvoting.net/resources/

131. HB 589 restricts early voting, rather than abolish it. However, the form of restriction has the effect of burdening blacks more than whites. The restriction is to move the start of early voting back one week, changing the period from 17 to 10 days. This first week of early voting is when African Americans have shown a particular propensity to vote during presidential elections. Although they constituted only 23% of the North Carolina electorate in the 2012 presidential election, African Americans were 33% of the voters who went to the polls

in the period that will be unavailable in the future. (Conversely, despite being 71% of the electorate, whites constituted only 62% of the first-week early voters in 2012.[81]) Thus, the composition of the electorate that will be burdened by the restriction will have a significantly greater concentration of African Americans than the electorate as a whole.

132. HB 589 requires counties to retain the same number of early voting *hours,* and so it has been said that the law retains the same availability of early voting, just in a more compact time frame.[82] However, it is doubtful that the most likely strategies to meet this goal will ameliorate the burdens that shortening the time frame cause.[83] Unless *all* the demand for early voting that is being transferred from the revoked period is met by new capacity (such as voting at new polling facilities or during expanded hours), greater congestion in North Carolina polls is guaranteed in future elections. And, as I shall show, a greater proportional share of blacks than whites will encounter this congestion.

133. This section addresses the elimination of a week of early voting in North Carolina by HB 589. The general outline of the analysis is this: As North Carolina expanded the availability of early voting, and enhanced its attractiveness by linking it to same-day registration,

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[81] In the remaining ten days of voting, the racial composition of the early voting electorate more closely resembled the overall electorate, even though African Americans still voted early at a greater rate than whites. The early voting electorate in the final ten days of 2012 was 27% black and 68% white (contrasting with 23% and 71% shares of the electorate, respectively).

[82] North Carolina governor Pat McCrory has been widely quoted for his statement made on the CNN program "Crossfire" that "We didn't shorten early voting. We compacted the calendar, but we're going to have the same hours in which polls are open in early voting and we're going to have more polls available." "Early voting hours reduced for May Primary," *Fayetteville Observer* February 27, 2014, http://www fayobserver.com/news/local/article_e571bf35-80f0-5dc7-893e-f4edaa92e3a9.html.

[83] I am aware of recent news reports that document widespread requests among North Carolina counties to reduce the cumulative hours of early voting in the May 2014 primary, compared to 2010, and that these requests have been approved by the SBOE. See Gary D. Robertson, "NC Counties Reduce Early Voting Hours for Primary," charlotteobserve.com, http://www.charlotteobserver.com/2014/02/27/4728735/nc-counties-reduce-early-voting html#.UxIFkfldXh4l; Gary D. Robertson, "Henderson, other NC counties reduce early-voting hours," *BlueRidgeNow.com,* February 28, 2014, http://www.blueridgenow.com/article/2014140229869. One recent news report states that "[t]hirty-eight of North Carolina's 100 counties — mostly rural, mostly poor — were granted waivers to offer fewer early voting hours for the primary." "Shorter early voting period could bring longer lines for NC primary," wral.com, April 4, 2014, http://www.wral.com/shorter-early-voting-period-could-bring-longer-lines-for-nc-primary/13541720/.

early voting became the overwhelming voting mode of choice among African Americans in presidential election years, in contrast to whites, and similarly is becoming the preferred mode in midterm congressional elections, though the details of this pattern are still emerging.

134. HB 589 appears to have ameliorative features — particularly, the requirement that counties maintain the same number of hours of early voting in 2014 and 2016 as they had in 2010 and 2012 (respectively) — but these features are unlikely to be effective. Early voting centers in North Carolina are already among the most congested in the nation; placing additional burdens on existing early voting sites will detract from efforts by county boards to address the existing problem of long wait times where they exist.

135. One tempting strategy for county boards to pursue is to expand hours of service in existing early voting centers, but in order to do so, they would need to expand into times-of-the-day that are inconvenient to when early voters tend to come to the polls. Another strategy would be to expand the number of early voting locations. However, it is my experience that local boards of elections tend to be reluctant to add new voting locations, because the logistics of establishing a new site are much more costly than simply adding hours at existing sites.

136. Finally, HB 589 places North Carolina in a very similar situation to where Florida was in 2012, when it passed legislation in 2011 that also eliminated early voting days while allowing counties to retain the same number of hours. Experience from that law, passed in another large, diverse southern state in which early voting is popular, shows that most voters who were disposed to vote early in Florida were additionally burdened, and a measurable number of voters were deterred from voting altogether.

137. To engage in this analysis, I bring together diverse strands of evidence. After this introduction, I explore the history of the utilization of early voting, nationally and in North

Carolina (¶¶ 138–150); racial patterns in the use of early voting in North Carolina (¶¶ 151–167); the amount of congestion already present in North Carolina's early vote sites, as measured by the amount of time early voters wait in line (¶¶ 171–177); evidence about when North Carolina's early voters go to the polls (¶¶ 178–195); and evidence about the experience of Florida when it enacted similar legislation in 2011 (¶¶ 196–210).

The background of early voting in North Carolina

138. Voting has changed significantly in the United States over the past two decades. Twenty years ago, practically all voters had to go to an in-person precinct on Election Day to vote. Since then, states have changed their voting laws in significant ways. As a result, in many states, voting ahead of Election Day is not only allowed, it is encouraged.

139. The growth of "convenience voting" — no-excuse absentee voting and early voting, particularly — has allowed voters to vote when they want, where they want. This, in turn, has made the act of voting easier for those in the electorate, while creating administrative benefits for governments that utilize it.[84] Allowing citizens to vote before Election Day reduces the pressures that emerge when a large mass of people converge on traditional polling places in a short period on a single day. Early voting also shifts responsibility for running the customer-service aspect of voting from (often) poorly trained poll workers, who are overwhelmingly amateurs, to a more professional election administration staff. Benefits like these led the recent bipartisan Presidential Commission on Election Administration to recommend the expansion of early voting even further.[85]

[84] Paul Gronke, et al., "Convenience voting," *Annual Review of Political Science* 11 (2008): 437–455.
[85] U.S. Presidential Commission on Election Administration, "The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration," January 2014, p. 2.

140. Before the passage of HB 589, North Carolina was at the forefront of convenience voting in the United States. As a consequence, most North Carolinians voted before General Election Day in 2012. According to responses to the Voting and Registration Supplement of the Current Population Survey, North Carolina ranked third among the states in the use of early voting, with 52.9% of voters reporting using that mode, behind only Nevada (62.9%) and Texas (54.8%). The reduction in the number of days available for early voting in HB 589 puts North Carolina in the rear guard of states trying to achieve two laudable goals of public administration, providing more convenient public service while also reaping administrative efficiencies.

141. Looking back in time, for much of the twentieth century, North Carolina voters were expected to go to their assigned precincts on Election Day, with the exception of a few people who were allowed to vote absentee, because illness or out-of-town travel prevented them from going to the polls on Election Day.[86] In the 1970s, the General Assembly created a system by which individuals could travel to the county board of elections, request an absentee ballot, and then vote that ballot in a single procedure. (An excuse was still needed, however.) This procedure was termed "one-stop" absentee voting, a term that the state has continued to use. In 1999, the North Carolina legislature authorized "no excuse" one-stop absentee voting in even-year general elections, which allowed anyone in the state to vote using the in-person one-stop procedure for any reason. In addition, this legislation further allowed counties to set up remote one-stop voting sites.[87]

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[86] A useful summary of the evolution of North Carolina's voting modes may be found at "Early Voting in North Carolina," Coates' Canons: NC Local Government Law, http://canons.sog.unc.edu/?p=3301, last accessed Feb. 16, 2014.
[87] S.L. 1999-455.

142. Early voting was further facilitated in North Carolina in 2001 when the excuse requirement was eliminated for all elections.[88] A further incentive to vote during the early voting period was created in 2007, when voters were allowed to come to an early voting site, fill out a voter registration application, and vote a one-stop absentee ballot, all as part of a unified system. (This system of same-day registration was examined in the previous section.)

143. HB 589 is the first legislation in a generation to scale back the ability of North Carolina residents to vote in-person before Election Day, by reducing the early voting period from 17 to 10 days, and by ending same-day registration during early voting.

Numerical trends in North Carolina's early voting

144. The distribution of North Carolina voters among the three major modes of voting is evident in data drawn both from Census Bureau surveys and from official North Carolina sources.

145. The most long-term perspective on the evolution of how North Carolinians have chosen to vote can be gained using data from the Voting and Registration Supplement (VRS) of the Current Population Survey. (The VRS is described in Exhibit 19.) Consistent with the historical summary given above, traditional Election Day voting was nearly universal in the 1996 and 1998 federal elections.[89] Only 3.7% of respondents who reported that they had voted failed to vote on General Election Day in 1996, 3.2% in 1998. Following the liberalization of absentee voting laws in 1999, the percentage of voters reporting that they went to the polls before General Election Day shot up to 10.7% in 2000 (8.1% early voting and 2.7% absentee voting). This fell back to 7.0% of voters in 2002 (5.0% early and 2.0% absentee). In-person early voting again

[88] S.L. 2001-337. This legislation also removed the excuse requirement for mail-in absentee voting.
[89] A graph and accompanying data that further illustrate the long-term trends I discuss in this and then next two paragraphs may be found in Exhibit 36.

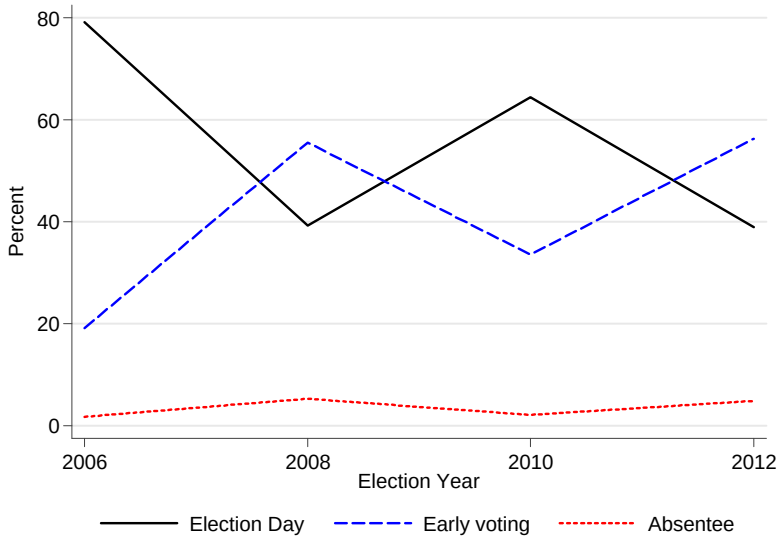
took off in the 2004 presidential election, accounting for 23.8% of voters. In each succeeding presidential election, the percentage reporting in the VRS that they voted early was greater than the preceding presidential election — 48.7% in 2008 and 53.2% in 2012.

146. It is significant that the biggest jump in the percentage of early voters occurred in the 2008 election, which was the first presidential election in which same-day registration was also allowed. The percentage of voters reporting they went to the polls to vote an early in-person ballot in 2008 increased by 24.9 percentage points compared to the previous presidential election, more than doubling the percentage of voters who used this mode in 2004.

147. In each succeeding mid-term federal election, the percentage of voters who reported voting early also continued to climb — to 11.6% in 2006 and 28.6% in 2010. Mail-in absentee voting has not exhibited an inexorable climb, continuing in a range from 2.2% (2010) to 5.7% (2008).

148. The patterns just described also hold when we turn our attention to the more recent period documented by the state-provided data files. Figure 12 graphs the percentage of voters in the state-provided voter history file who voted in-person on General Election Day, voted early, and voted absentee by mail in every federal election beginning in 2006. (The data values graphed in Figure 12 are reported in Exhibit 37.) Voting on Election Day was cut nearly in half the first year that early voting was paired with same-day registration, from 69.0% in 2004 to 39.2% in 2008. In the 2012 election, early-voting was used by 56.3% of North Carolina voters, followed by 38.9% who voted on General Election Day and 4.8% who voted absentee.

Figure 12. Share of North Carolina general election voters who voted in-person on Election Day, early, and by mail-in absentee ballot, 2006–2012
(Source: State-provided voter history file)



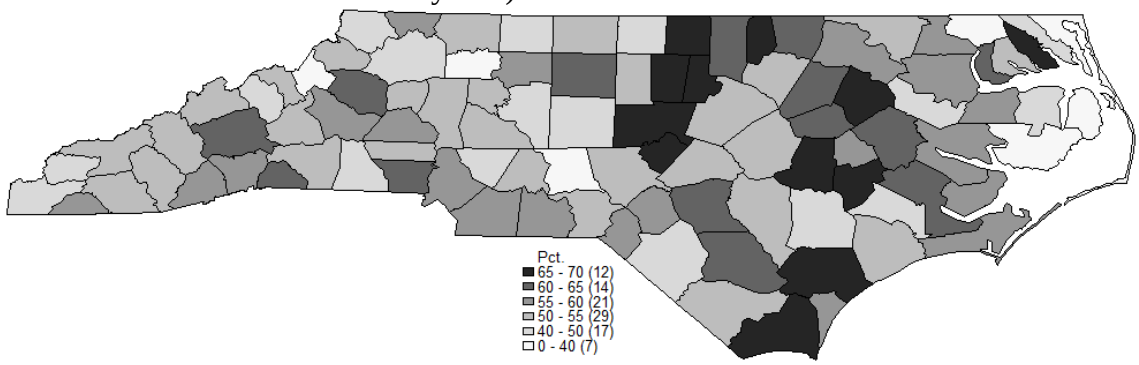
149. Although early voting has become the most common voting mode in presidential elections in North Carolina, and has grown in popularity during midterm congressional elections, it has not grown uniformly throughout the state. Some counties' residents use early voting more than others. Variability across counties is large. For instance, in 2012, the percentage of voters using early voting ranged from 26.8% in Hyde County to 69.3% in Durham County.

150. Intra-state variability is summarized in the following map (Figure 13), which shows the percentage of voters who used early voting in each county in the 2012 election.[90] There are obvious "hot spots" of early voting throughout the state, particularly in the eastern part of the state, while in other areas it has yet to catch on. Although below I demonstrate that African Americans have shown a greater tendency to use early voting than whites, this tendency is insufficient to explain the variability in early voting use across counties.[91] (At the end of this

[90] County-by-county early voting rates are reported in Exhibit 38 for the 2006–2012 federal elections.
[91] I examined the correlation between the percentage of a county's registered voters that was minority (from the 2012 snapshot file) and the total hours early voting sites were open (from the epb_site_assignment_hours.txt file. The simple correlation coefficient between the two measures is .11, describing little linear relationship between the

section (¶¶ 186–194), I address the issue of the relationship between the number of open hours of early voting sites and the use of early voting by county residents.)

Figure 13. Geographic distribution of early voting in North Carolina, 2012 presidential election
(Source: North Carolina voter history file.)

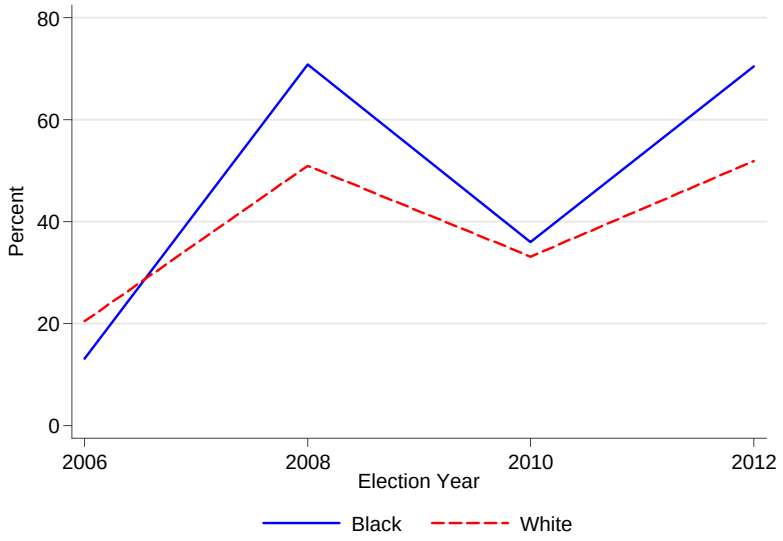


Racial patterns in the use of early voting

151. As early voting has become more popular in North Carolina, a gap has emerged in the tendency of white and black voters to rely on the method. Data generated using the state-provided absentee voter file illustrate this trend in Figure 14. (The data graphed in Figure 14 are reported in Exhibit 39.) In 2006, whites were more likely to vote early than blacks (20.4% vs. 13.1%), but a large gap opened up in 2008, when 70.9% of blacks, but only 51.0% of whites, voted early. Blacks showed a smaller relative preference for early voting in 2010 (36.0% vs. 33.1%), after which the large gap opened up again in the 2012 presidential election — 70.5% of blacks voted early, compared to 51.9% of whites.

two. When I weighted the observations by the number of registered voters in the county, the correlation rose to .36. This is a statistically significant relationship ($p < .0005$) which seems primarily influenced by the large number of hours available for early voting in Guilford and Mecklenburg counties.

Figure 14. Early voting percentages for black and white North Carolina voters, 2006–2012 (Source: State-provided 2012 snapshot and voter history files)



The timing of early voting

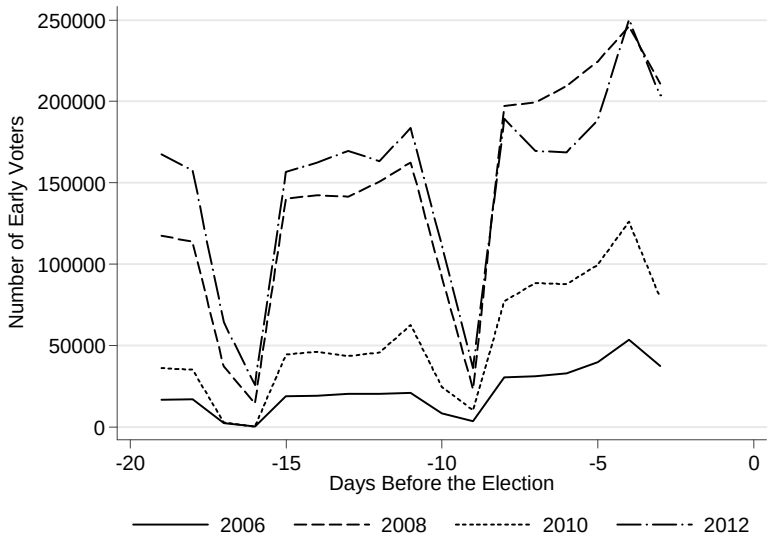
152. HB 589 reduced the number of days available for early voting, from 17 to 10. The period eliminated was even more preferred by black voters in presidential elections, compared to whites, than the period that was retained. This fact adds even further to the burden placed disproportionately on African Americans as a consequence of HB 589.

153. To understand the likely consequences of the reduction in early voting days, it is necessary to examine the day-by-day patterns of early voting over the past decade. In making this examination, I used the state-provided absentee correspondence file and 2006 absentee file from the state ftp site discussed in Exhibit 2. The absentee correspondence file does not contain information about the race of voters. Therefore, I had to merge the state-provided absentee file with the state-provided 2012 snapshot file to get information about the race and ethnicity of early voters.

154. I begin this analysis by reporting the number of voters who cast ballots on each day of the early voting periods from 2006 to 2012. Figure 15 below describes these numbers.

(The data graphed in Figure 15 is reported in Exhibit 40.) The *x*-axis is labeled in terms of the number of days before General Election Day, with General Election Day itself labeled with a zero. The first day of early voting, being nineteen days before General Election Day, is Day -19; the last day of early voting, being three days before General Election Day, is Day -3.

Figure 15. Number of early voters in North Carolina, by day, 2006–2012
(Source: State-provided absentee correspondence and 2012 snapshot files, and 2006 absentee file from ftp site.)



155. The following patterns are evident in this figure. First, the two presidential election years, 2008 and 2012, had more votes cast on each day of early voting than any corresponding day of early voting in the two congressional election years, 2006 and 2010. Second, the number of early votes cast on weekend days dip notably (especially on Sunday), compared to weekdays. These dips correlate strongly with the number of hours available for early voting throughout the state. (Below, in ¶¶ 184–185, I report the number of hours available for early voting each day.[92]) Finally, across all four elections, the number of people casting an

[92] This analysis is based on data from the data file epb_site_assignment_hours.txt that was made available by the SBOE. That data was double-checked against a spreadsheet received from the SBOE that listed all early voting sites and the hours they were open; the data file was corrected to reflect the information in this spreadsheet. Using the resulting dataset, we can see that only 40 counties had an early voting site open on the first Saturday of early voting

early vote grows as interest in the election reaches a crescendo — the maximum number of early votes is cast on the Friday before General Election Day.[93]

156. To gain a sense about how many voters have availed themselves of early voting during the period revoked by HB 589, the following table (Table 8) breaks out the total number of voters according to whether they voted in the "revoked period" or the "retained period." The number of voters in the revoked period has grown considerably over the past several election cycles, reaching nearly 900,000 in 2012.

Table 8. Early voting by "revoked" and "retained" early voting periods, 2006–2012
(Source: State-provided absentee correspondence file and 2006 absentee file from ftp site)

	Election year			
	2006	2008	2010	2012
Revoked period	93,955	702,656	207,049	899,083
Retained period	278,029	1,707,716	698,157	1,657,145
Total	371,984	2,410,372	905,206	2,556,228

Measuring the propensity of blacks and whites to vote early in North Carolina

157. Whether changes to North Carolina's early voting laws have a disparate impact on minority voters rests on measures of the *percentage* of voters who use early voting, not entirely on total numbers. In percentage terms, African Americans clearly prefer early voting, compared to white voters, particularly in presidential election years.

158. Once early voting was tied to same-day registration, the tendency of African Americans to vote early increased, compared to whites. This was true for both presidential

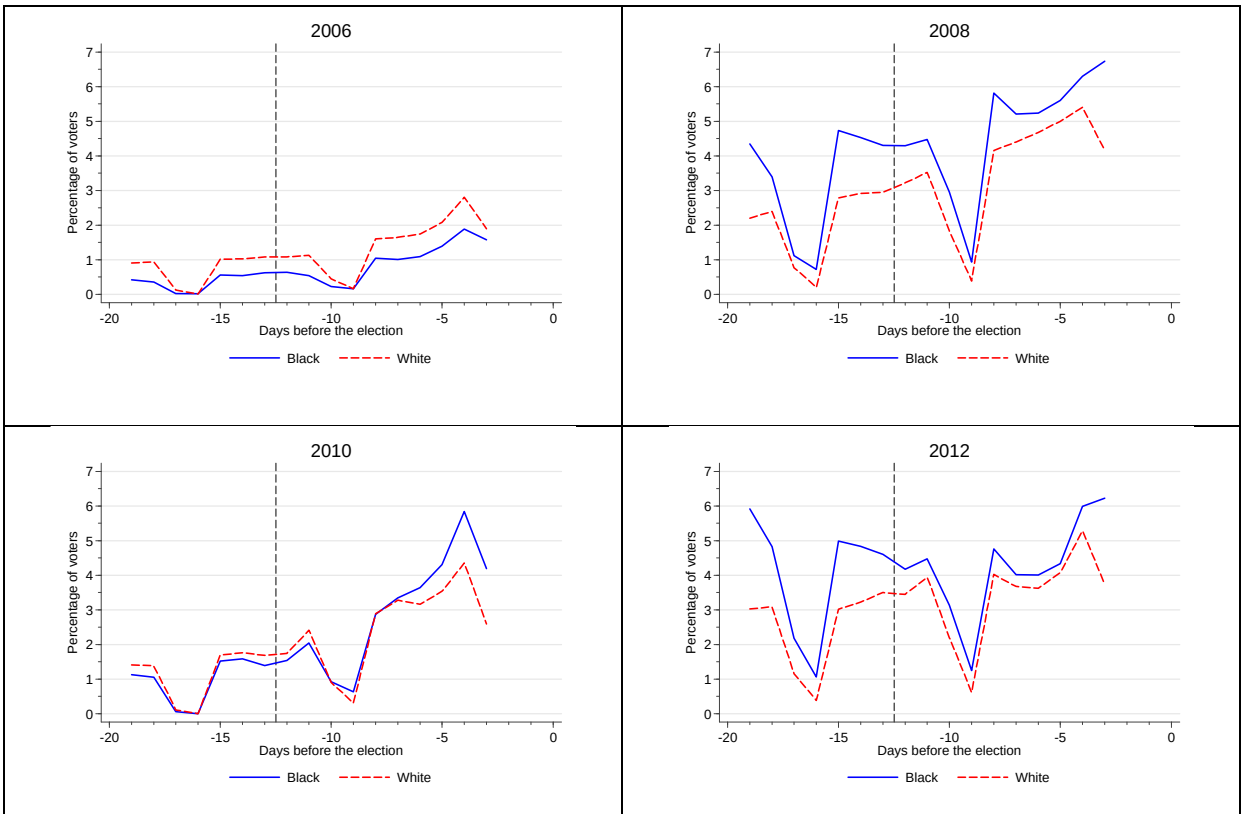
in 2012, 14 had at least one site open on the first Sunday, 59 had early voting the second Saturday, 17 had early voting the second Sunday, and all counties had early voting on the last Saturday of the early voting period.

[93] Many early voting sites closed at 1:00 p m. on the last Saturday of early voting, which undoubtedly explains why there is a dip in the number of votes cast on the last day, despite what is obviously growing turnout over time. Indeed, if we divide the number of early voters that day in 2012 (203,718) by the number of hours available for early voting (1,787.5), the ratio is 114.0 — by far the greatest number of voters per hour of any day of the early voting period. (The average number of voters per hour for the entire 2012 early voting period was 70.0.)

elections after 2007, and was true during the second half of the midterm congressional election of 2010.

159. These patterns are graphed in Figure 16 below, which shows the percentage of voters in the respective election who voted on a particular day of early voting, broken down by race.[94]

Figure 16. Percentage of all black and white voters who voted on each day of early voting, 2006–2012
(Source: State-provided 2012 snapshot and absentee voter files and 2006 absentee file from ftp site)



160. Three patterns in Figure 16 bear mentioning. Most obviously, black voters have been more likely to vote early *on every day of the early voting period* than whites in presidential

[94] For instance, a total of 318,271 blacks voted in the 2006 general election. Of these, 1,334 voted on the first day of early voting. This represents 0.42% of all blacks who voted in 2006. This is the very first number graphed for black voters in 2006. The data graphed in Figure 16 are reported in Exhibit 41.

election years. Second, although we saw in Figure 16 that the overall rate of early voting tends to grow steadily across the entire 17-day early voting period (with a dip in the middle weekend), this trend does not carry over so clearly when we examine black and white voters separately. In each graph in Figure 16, whites take advantage of early voting at a greater rate in the latter part of the period than in the earlier part, whereas the time trend of African Americans has been mixed. African American numbers trended upward across time in 2006, 2008, and 2010, but showed no linear time trend in 2012.[95]

161. This second point bears closer scrutiny if we are to understand the racial impact of the reduction of early voting under HB 589. When the black-white gaps exist in the use of early voting in presidential elections, the gap is the greatest in the earliest part of the period — precisely the period that has been eliminated under the bill.

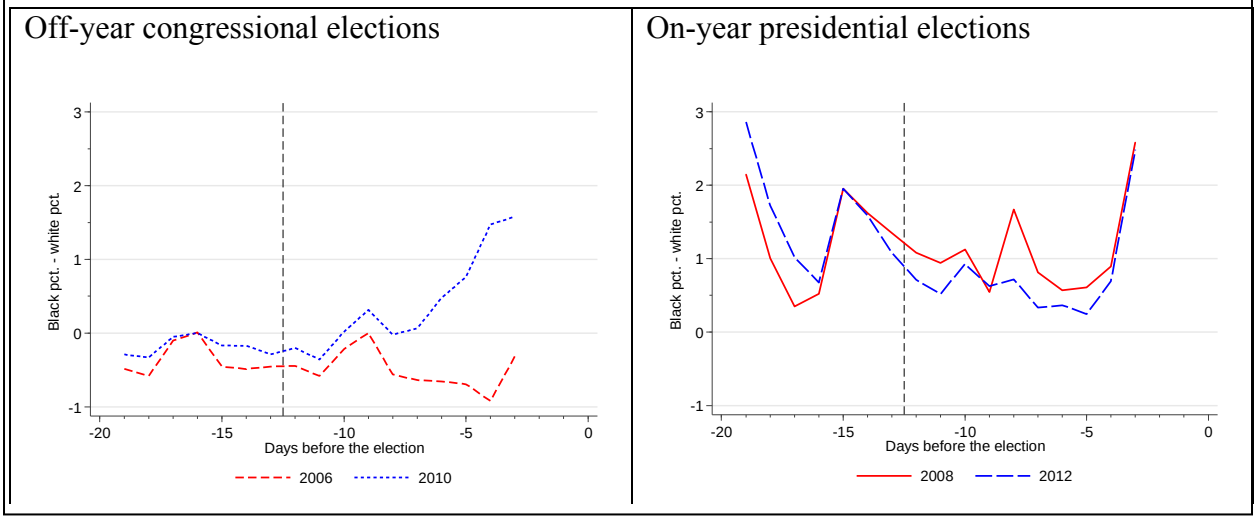
162. The third pattern in Figure 16 that deserves mentioning is that no consistent pattern of early voting usage has yet to emerge in the congressional midterm elections. In 2006, white voters were more likely to vote throughout the period, while in 2010, there was no difference in the voting rate until the very end, when African Americans became significantly more likely than white voters to early vote. I attribute this to the fact that off-year elections (that is, elections without the U.S. president on the ballot) tend to be low-turnout affairs, especially in years when there is no statewide race on the ballot. (See Exhibit 27 for a more thorough discussion of the differences between presidential and midterm elections.) Without a statewide race, voters will tend not to be mobilized by the campaigns. In 2010, there was a moderately-contested U.S. Senate race on the ballot, and it is likely that mobilization efforts of the

[95] It is possible to establish this claim using linear regression to test whether any of the time series show a linear trend over time. When I performed this regression on each time series in Figure 16, the trend variable was significant at a *p*-level of at least .038 (below the traditional .05 level regularly used in the social sciences to judge statistical significance) in every case but one — the trend of African Americans in 2012, where the *p*-value was .40.

campaigns moved into high-gear as Election Day approached. It is telling that the turnout pattern during the second half of the early voting period in 2010 resembles that of the two surrounding presidential elections. Whether the heavier use of early voting by black voters close to Election Day will continue to occur in other years with a U.S. Senate contest will be tested in 2014.

163. The information provided above in Figure 16 can be summarized with a single time series for each year, which is done below in Figure 17. Here I have calculated the share of votes cast by blacks during the early voting period *minus* the share of votes cast by whites, for each day of each early voting period. When the graph is above the value of zero, blacks are more likely to vote early than whites, and vice versa.[96]

Figure 17. Difference in percentages of black and white early voters each day of early voting, 2006, 2008, 2010, and 2012
(Source: State-provided absentee correspondence and 2012 snapshot files, and 2006 absentee file from ftp site)



164. Here, the general patterns discussed above in paragraphs 160–162 are displayed more economically. The greater overall reliance on early voting by blacks in elections held

[96] For reference, I have reported the values graphed in Figure 17 in Exhibit 41.

during presidential years is clearly illustrated in the graphs for 2008 and 2012, as is the greater relative reliance on early voting by blacks in the early voting period eliminated by HB 589.

165. The patterns of reliance on early voting by blacks and whites are more mixed for the two midterm congressional elections explored here. However, as has already been noted, the electoral environment in North Carolina is quite different in presidential election years than in midterm congressional election years. The primary reason can be tied to the lack of regular statewide elections in non-presidential years — statewide offices are elected in a cycle that corresponds with presidential elections. The only major exception is the presence of a U.S. Senate candidate on the ballot in two out of every three midterm election years. A U.S. Senate seat was on the ballot for election in 2010 and will be in 2014, but was not in 2006.

166. As a consequence of having all its statewide elections stacked into presidential years (with the exception of U.S. senator in some years), North Carolina has relatively high turnout overall in presidential election years, but its turnout rate is below the national average in off-year elections. For instance, North Carolina's turnout rate was 64.6% of its voting eligible population (VEP) in 2012, ranking it 11th highest of all states, well above the national turnout rate of 58.2%.[97] However, just two years before, in the 2010 midterm, North Carolina's turnout rate of 39.2% caused it to be ranked 37th nationwide, below the national turnout rate of 41.0%. In 2006, without the benefit of a U.S. Senate race to draw the attention of North Carolina voters, state turnout was down even further, to 30.1%, even further below the national turnout rate of 40.1%, and the fifth-lowest in the nation.

167. It is therefore clear that the preference among African Americans for early voting is strongly associated with the presence of statewide candidates on the ballot, and with

[97] The turnout statistics quoted in this paragraph were taken from Michael McDonald, United States Election Project, http://elections.gmu.edu/voter_turnout.htm.

participation in high-turnout elections. In the case of presidential years, which also feature a full slate of state constitutional officers, Africans Americans express a clear preference, compared to whites, for voting each day of the early voting period.

The likely effect of reducing early voting days on polling place congestion

168. Reducing the number of early voting days in North Carolina will disproportionately burden black voters, but there are second-order effects of this change that are relevant. Because one of the two major goals of convenience voting is greater *convenience,* we might be concerned that by requiring voters who have settled into established early voting patterns to change those patterns, they will be inconvenienced. But, there is more to be concerned about than inconvenience. Shifting nearly a million votes from one bloc of time to another (as will happen in 2016) requires an exacting logistical response, if service quality is not to be degraded for *all* early voters, including those who had previously voted in the second half of the period, which was retained under HB 589. This second bloc of voters — those who were already voting during the early voting period that has been retained by HB 589 — is disproportionately African American, too.

169. Anticipating the likely effects of reducing the number of days of early voting requires us to investigate both the current allocation of resources to early voting in North Carolina and the likely effects of moving resources around to accommodate demand for early voting. The literature of industrial engineering and operations research that deals with the allocation of resources to manage lines in customer service settings emphasizes that the relationship between a change in resources and change in customer service is far from linear.[98]

[98] Richard C. Larson and Amedeo R. Odoni, *Urban Operations Research,* Prentice-Hall, 1981, ch. 4; Theodore Allen and Mikhail Bernshteyn, "Mitigating voter waiting times," *Change* 19 (2006): 25–34; Alexander S. Belenky and Richard C. Larson, "To Queue or Not to Queue?" http://www.orms-today.org/orms-6-06/queues html; William

Increasing demand for access to a service by 10%, for instance, might require a doubling of resources devoted to customer service, if previous service levels are to be maintained.

170. There are reasons to be concerned about whether North Carolina's counties will be able to shift resources to accommodate a shift in the voting times of early voters. First, there is evidence that early voting is *already* congested in North Carolina. Second, the financial exigencies of local governments are such that they will be tempted to accommodate the "no-lost-hours requirement" by adding voting hours late at night, or at other times during the day when early voters have not previously been voting. (It also bears mentioning that counties may request to opt-out of the "no lost hours" requirement.[99]) Finally, the experience of Florida, which attempted a very similar policy shift in 2012, to widespread disapprobation, cautions against being sanguine that early voting will unfold smoothly in the next high-turnout state election.

Early voting sites are already congested in presidential elections

171. First, North Carolina county boards of election, on the whole, did not provide enough early voting hours before the passage of HB 589 to meet demand for early voting in a convenient way. By the best measure of polling place congestion — the amount of time voters wait in line to vote — North Carolina early voting centers were among the most congested in the nation in 2012.

172. I base this claim on research I have done into wait times to vote in North Carolina prior to my work on this case. Survey research I have conducted via the Survey of the

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A. Edelstein and Arthur D. Edelstein, "Queuing and Elections: Long lines, DREs, and paper ballots," *Proceedings of EVT/WOTE 2010;* Ugbedor O. Olabisi and Nwonye Chukwunoso, "Modeling and analysis of the queue dynamics in the Nigerian voting system," *Open Operational Research Journal* 6 (2012): 9–22; Douglas A. Samuelson, Theodore T. Allen, and Mikhail Bernshteyn, "The right not to wait," http://www.orms-today.org/orms-12-07/frvoting html; M. Yang, M.J. Fry, and W.D. Kelton, "Are all voting queues created equal?" in *Simulation Conference (WSC), Proceedings of the 2009 Winter Conference* (2009); Muer Yang and others, "The call for equity: Simulation-optimization models to minimize the range of wait times," *IIE Transactions* (2012).

[99] See footnote 83, which notes news accounts of counties requesting, and receiving approval for, such waivers.

Performance of American Elections (SPAE) reveals that wait times to vote in 2008 and 2012 in North Carolina were already greater than the national average. (The SPAE is described in Exhibit 19.)

173. In both 2008 and 2012, the SPAE asked respondents who voted in-person, "Approximately, how long did you have to wait in line to vote?" The response categories were (1) Not at all, (2) Less than 10 minutes, (3) 10-30 minutes, (4) 31 minutes – 1 hour, (5) More than 1 hour [with a follow-up prompt to ascertain how long the wait was], and (6) I don't know.

174. North Carolina early voters reported spending more time waiting to vote than most early voters nationwide, as is illustrated in Table 9 below, which reports the distribution of responses for 2008 and 2012, averaging responses across the two years. (Responses for 2008 and 2012 separately are reported in Exhibit 42.) The first two columns report the distribution of results for all respondents, the third and fourth columns report the distribution of results for North Carolina respondents, and the final two columns report the difference between North Carolina and nationwide respondents, subtracting the nationwide percentages from the North Carolina percentages.[100]

Table 9. Distribution of wait times to vote in North Carolina, combined data from 2008 and 2012.
(Source: Survey of the Performance of American Elections)

	Nationwide		North Carolina		N.C. minus nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	41.9%	36.2%	39.4%	22.9%	-2.5	-13.3
Less than 10 minutes	29.8%	28.2%	28.1%	25.1%	-1.7	-2.9
10-30 minutes	17.1%	19.8%	21.0%	24.8%	4.1	5.0
30 min. - 1 hr.	8.0%	10.6%	9.6%	21.3%	1.6	10.7
More than 1 hr.	3.2%	5.2%	2.0%	5.9%	-1.2	0.7
Number of observations	12,057	3,330	146	188		

[100] The 26 respondents who answered "I don't know" are excluded from the analysis. None were from North Carolina.

175. The percentage spending more than 30 minutes to vote early was 15.8% nationwide, but 27.2% in North Carolina.[101] This difference is statistically significant at conventional levels used in the social sciences.[102] In contrast, North Carolina in-person voters who went to the polls on General Election Day reported waiting no longer than General Election Day voters nationwide.[103]

176. Therefore, it is clear that many early voting centers in North Carolina are already congested in presidential election years, producing waiting times to vote that go beyond the thirty-minute standard recently proposed by the bipartisan Presidential Commission on Election Administration.[104]

177. Even if HB 589 had not been passed, North Carolina's county boards of elections would already have a challenge to examine whether they had sufficient capacity to meet existing demand for early voting. As explained below, redistributing hours from the first seven days of the previous early voting period to the final ten days will not improve the current inconvenience faced by many North Carolinians who vote early, and will likely make it worse.

When do early voters vote? In the middle of the day

178. As county boards of elections decide how to respond to the high demand for early voting during a shorter voting period, careful attention will need to be given to how the hours of

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[101] I focus on the percentage of voters waiting more than 30 minutes to vote because this is the standard proposed in the recent report of the bipartisan Presidential Commission on Election Administration. See U.S. Presidential Commission on Election Administration, "The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration," January 2014, p. 14.

[102] χ^2 statistic = 37.8 with 4 degrees of freedom, $p < .0005$. Additional tests on responses for each year separately also revealed that North Carolina early voters waited longer to vote than the typical national early voters. For 2008 the χ^2 statistic = 13.7 with 4 degrees of freedom, $p = .008$; for 2012 the χ^2 statistic = 29.1 with 4 degrees of freedom, $p < .0005$.

[103] Overall, $\chi^2 = 1.0$, d.f. = 4, $p = .91$; for 2008 alone, $\chi^2 = 5.8$, d f. = 4, $p = .21$; and for 2012 alone, $\chi^2 = 6.7$, d.f. = 4, $p = .15$.

[104] U.S. Presidential Commission on Election Administration, "The American Voting Experience," p. 2.

the remaining 10-day period will be distributed, both across the day and geographically across the counties.

179. It would be a major mistake to imagine that those who would have voted during the week of early voting that has been eliminated by HB 589 will shift into expanded hours in the days that remain. Instead, it is more likely that early voters who had previously voted in the eliminated 7-day period will shift to a similar time, in the middle of the day, during the remaining 10-day period. Of course, it is likely that early voters who had previously utilized this final 10-day period will be voting then, too. Thus, even if hours are expanded during the remaining 10-day period, I suspect a significant portion of these displaced voters will not vote during those expanded hours.

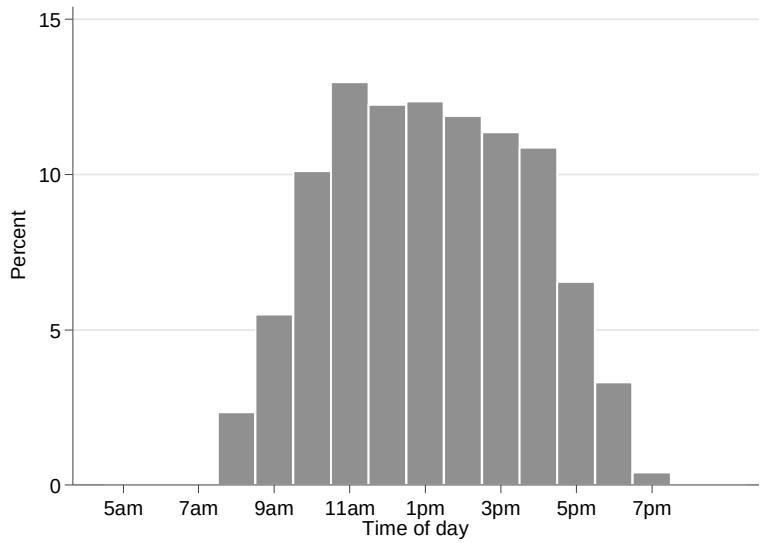
180. On the whole, early voting is a middle-of-the-day activity. Thus, if the number of early voting centers is not significantly expanded so as to offer more hours in the middle of the day, the result will be to add even more people to a congested early voting environment.

181. We can gain insight into the times when early voters go to the polls using two sources of data, survey research and the state-provided absentee correspondence file. In Exhibit 43, I report analysis that uses survey research to provide information about when voters go to the polls in North Carolina and nationwide. This allows us to see that North Carolina's voting patterns are similar to nationwide patterns. What follows here is analysis that uses data from the state-provided absentee voter file to provide information about when early voters go to the polls in North Carolina.

182. The fact that North Carolina's early voters go to the polls in the middle of the day is shown in Figure 18 below, which graphs the distribution of early voting times as reflected in

the absentee correspondence file. Note that the core time-of-day for early voting starts at 11:00 a.m. and ends at 5:00 p.m.

Figure 18. Time-of-day when early voters cast their ballots, 2012
(Source: State-provided absentee correspondence file)



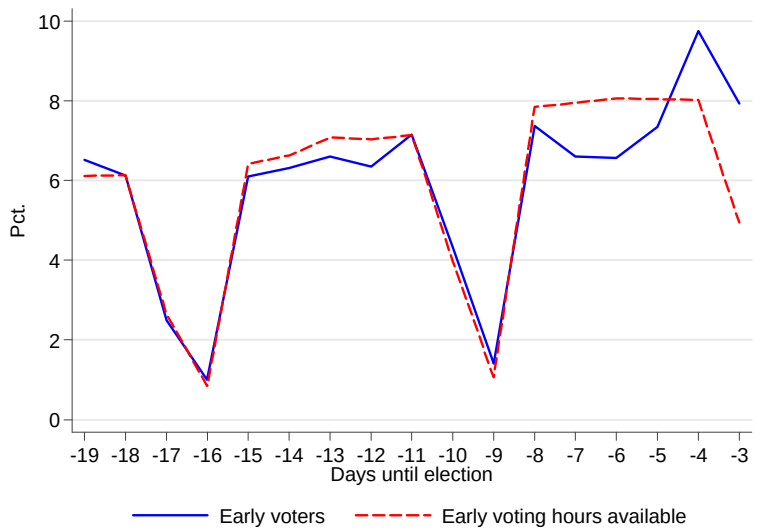
183. We can also use information from the state-provided absentee file to calculate the dates on which early voters cast their ballots. And we can use a state-provided data file that reports the hours when early voting sites were open for voting to calculate how many hours of early voting were available on those same dates.[105] Combining data from the two files, we can see where the availability of early voting offices matches the volume of early voters, and where the two are mismatched.

184. There is a close correspondence between the number of hours available for early voting statewide and the fraction of early voters availing themselves of the opportunity on particular days, which is illustrated in Figure 19 below, which describes the fraction of all early voters who voted each day during the early voting period in 2012 (solid line) and the fraction of

[105] I augmented data provided in the file labeled epb_site_assignment_hours.txt with an SBOE spreadsheet provided to me by DOJ attorneys with the heading "One-Stop Voting Sites for the November 6, 2012 GENERAL Election" (SBE00008525).

all early voting center open hours available on each day (dashed line). On most days, the early voting hours and early voters are closely balanced. The primary days of imbalance are in the second week (i.e., the core of the period retained for early voting under HB 589).

Figure 19. Voting times for early voters, in North Carolina, 2012
(Sources: State-provided absentee correspondence file and early voting hour file.)



185. For much of the final week, the relative availability of early voting hours, on a daily basis, exceeds the tendency of people to vote early. This is dramatically reversed on the final two days of early voting, when the relative utilization of early voting vastly exceeds the relative number of hours devoted to keeping early voting centers open. On the penultimate day of early voting, 8.0% of all early voting hours were available on that day, although 9.8% of all early voters voted that day. (If voters and hours were evenly distributed, each quantity would be 5.9%, or 1/17 of the total.) On the last day of early voting, 4.9% of all early voting hours were available, even though 7.9% of all early voters voted that day. This is the day when the discrepancy between the supply of and demand for early voting is the greatest. This is also the

one day in the retained period of early voting in which the allowable hours of early voting under HB 589 has been cut.[106]

Calculating whether the no-lost-hours requirement can be absorbed by existing early voting sites

186. Because counties will be required to expand the number of available early voting hours in the 10 days that remain of the early voting period, I explored the likelihood that the expanded hours could be accommodated in existing early voting sites. First, using the data about early voting hours I previously analyzed, I calculated for each county the number of voting hours from the 7-day eliminated period that would have to be added to the 10-day remaining period to meet the "no lost hours" requirement. Then, I calculated how many hours could be added if each early voting site in the county was open from 8:00 a.m. to 5:00 p.m. each day, except Sundays and the last Saturday. Only 15 counties - all very small - could accommodate the "no lost hours" provision of HB 589 this way. I performed the same calculation if all early voting sites were open until 7:00 p.m. (27 counties could accommodate) and until 9:00 p.m. (86 counties). A summary of these calculations is reported in Exhibit 44.

187. Even with this last scenario, the largest county in the state, Mecklenburg, would be 93 hours short of compliance

188. An important lesson of this analysis is that county boards of elections will need to significantly expand their capacity to offer early voting opportunities during the remaining 10-day period. The last scenario outlined in Paragraph 186 (staying open until 9:00 p.m. at all early voting locations in all counties) would be a big stretch for most counties, as is evidenced by the fact that no early voting site was scheduled to stay open until 9:00 p.m. in 2012.

[106] S.L. 2013-381, § 25.1.

Factors affecting the number of early voting hours in North Carolina counties

189. Because in 2012 there was a statewide balance on most days between the number of hours available for early voting and the number of early voters, it is natural to inquire into factors that explain the amount of time early voting centers are open in particular counties. As far as I know, there has been no published research in the fields of political science or public administration to answer this question. Therefore, I conducted a multiple regression analysis to see if I could explain, in a statistical sense, the factors that are associated with counties offering more-or-fewer hours for early voting.

190. The details of that regression analysis are contained in Exhibit 45. The factors I explore in that regression are *size of the county*, measured by the number of registered voters in 2012; *partisan composition of the county*, measured by the vote share received by President Obama in the county in 2012; *racial composition of the county*, measured by the share of the voters in the 2012 snapshot file who were non-white; and *past use of early voting*, measured by the percentage of voters who voted early in 2010.

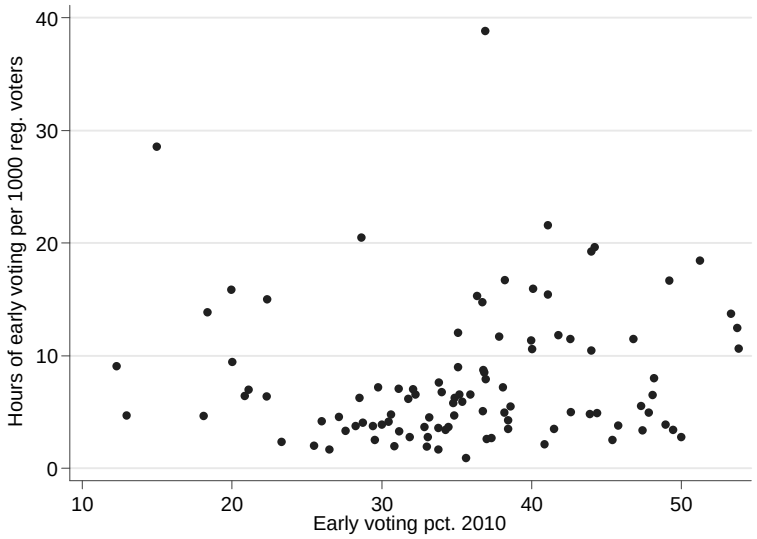
191. The primary conclusion of that analysis is that the strongest predictor of the number of hours available for early voting is the number of registered voters in a county. However, the relationship between the number of hours and registered voters is not one-to-one. Instead, the data suggest an "elasticity" of hours with respect to the number of registered voters that is approximately 0.54. In other words, the growth in the number of early voting hours is roughly half the growth rate in the number of voters.

192. For those looking to counties to respond to the demand for early voting as they adapt to the demands of HB 589, these results should give one pause. First, the relationship between county size and early voting hours suggests that early voting hours do not grow in

proportion to the size of counties, which one would expect if county boards of elections were assessing whether they were offering a sufficient number of voting hours by comparing themselves with similarly situated counties. This, in turn, suggests that the larger the county, the less likely it has allocated enough resources to early voting to keep congestion to a minimum.

193. Second, there is a surprisingly weak relationship between the number of hours open for early voting and past early voting patterns. This lack of a relationship between the use of early voting in counties and the number of early voting hours is illustrated in the following graph (Figure 20), which plots the available early voting hours (per 1,000 registered voters in 2012) against the percentage of voters voting early in 2010.[107] Note that there is no relationship between the two variables. (The correlation coefficient is .08.)

Figure 20. Relationship between early voting hours in North Carolina counties in 2012 (per 1,000 registered voters) and early voting in 2010



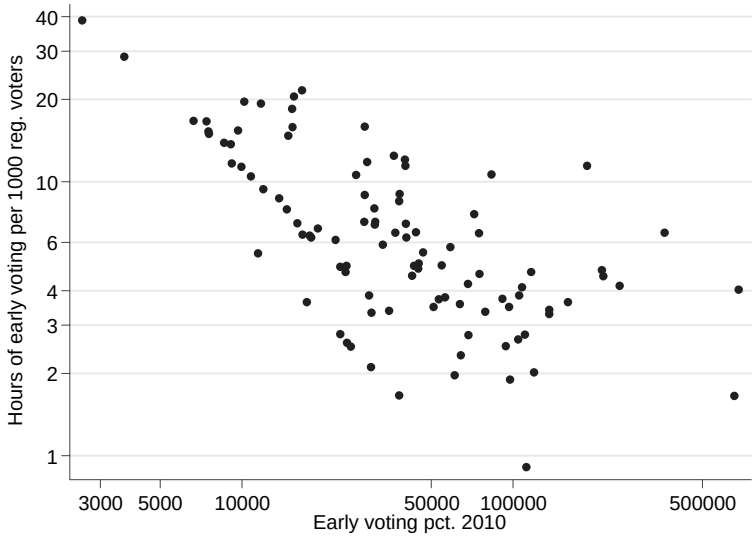
[107] I chose 2010 for this comparison on the hypothesis that county boards of elections would make decisions about how much early voting to offer in 2012 based on demand for early voting in the most recent federal election. However, the substantive finding of "no correlation" is the same regardless of which recent election year I choose to take the measure of early voting usage from. The correlation between early voting percentage in 2008 and hours of early voting (per 1,000 registered voters) is -.12; the correlation using 2012 early voting figures is -.11.

194. In contrast, there *is* a relationship between hours of early voting per 1,000 registered voters and number of voters. However, the relationship is negative — the larger the county, the fewer hours of early voting per 1,000 registered voters.[108] (See Figure 21.) One would expect that if decisions by county boards of elections about how many hours of early voting to offer were being made based on service criteria (e.g., what the maximum acceptable wait to vote was during peak voting hours), the number of early voting hours per registered voters would be constant across counties

195. To conclude, HB 589 puts counties in a difficult position. Demand for early voting is such that significantly expanding the number of early voting sites would have seemed a prudent strategy to meet that demand *even without the passage of HB 589*. With the addition of the HB 589 cut-backs of early voting time, counties will need to find even more additional early voting sites if they are to keep up with demand. If not, then the state risks seriously long lines of the sort that became notorious in Florida in 2012.

[108] The correlation coefficient associated with the graph in Figure 21 is -.66, which is statistically significant at well beyond the 95% confidence level commonly used in the social sciences.

Figure 21. Relationship between early voting hours in North Carolina counties in 2012 (per 1,000 registered voters) and number of registered voters



Early voting's lesson from Florida

196. Finally, the restriction of early voting dates under HB 589 bears a close resemblance to the restrictions on early voting under HB 1355 in Florida that was passed in 2011 and implemented in 2012. The Florida bill reduced early voting in the Sunshine State from 14 to 8 days, although it also allowed counties to retain the total 96 hours of early voting that had previously been required. The outcome in Florida was generally considered a failure, leading the Florida legislature, by overwhelming majorities, to overturn this provision of HB 1355 in 2013.[109]

197. Research I conducted with Professor Paul Gronke from Reed College and presented at the 2013 annual meeting of the Midwest Political Science Association examines the

[109] The 2013 bill passed the Florida House by a 115-1 vote, and the Senate by a vote of 27-13. The bill was CS/HB 7013, signed by Florida Governor Rick Scott on May 21, 2013. http://www.flsenate.gov/Session/Bill/2013/7013. It is summarized at the Florida Election Law blog: http://floridaelectionlaw.com/2013/05/31/governor-signs-cshb-7013-bill-amends-florida-election-code/.

behavior of those who had voted early in Florida in 2008 when they went to vote in 2012.[110] The principal findings of that research that are relevant for this report are (1) a large fraction of early voters from 2008 continued to vote early in 2012, despite public concerns about congestion at early voting centers; (2) 2008 early voters who voted during the period revoked by Florida HB 1355 were more likely to vote early in 2012 than those who voted in the retained period; and (3) the voters who were the most deterred from voting early in 2012 were the early voters in 2008 who had voted at the end of that year's early voting period.

198. The first finding I discuss is that Floridians who voted early in Florida in 2008 were very likely to vote early again in 2012, despite widespread worries ahead of time that the reduction of early voting days, and a further restriction of the types of facilities that could serve as early voting sites, would make long lines at the polls unbearable.

199. Table 10 documents the percentage of voters from 2008 who voted in various voting modes in 2012. Among all voters in 2008, 43.2% of early voters returned again to vote early in 2012; in contrast, 52.8% of absentee voters in 2008 voted absentee in 2012, and 48.3% of General Election Day voters in 2008 voted on General Election Day in 2012. If we confine ourselves to those who voted in both 2008 and 2012, 53.5% of early voters in 2008 also voted early in 2012, compared to "mode persistence" rates of 73.2% for absentee voters and 65.4% for Election Day voters. Thus, the degree of mode persistence among early voters in 2008 was less than that of absentee and Election Day voters; however, persistence was high enough that, when coupled with the behavior of new voters in 2012 and voters from 2008 who switched into early

[110] This paper is available for download at the following URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247144.

voting, the absolute number of early voters in 2012 was down only 9.3% compared to 2008, despite a reduction in opportunities to vote early that was significantly greater than that.[111]

Table 10. How individual Florida voters in 2008 voted in 2012.
(Source: Gronke and Stewart 2013)

	2012 voting mode					
2008 voting mode	Early	Absentee	Election Day	Not voting, but registered	Not voting, and not registered	Total
a. All 2008 voters						
Early	43.2%	15.6%	22.0%	13.6%	5.4%	2,686,283
Absentee	8.9%	52.8%	10.4%	16.4%	11.5%	1,917,118
Election Day	14.1%	11.4%	48.3%	20.8%	5.6%	3,858,116
b. Only those voting in 2012						
Early	53.5%	19.3%	27.2%	—	—	2,171,754
Absentee	12.3%	73.2%	14.4%	—	—	1,382,242
Election Day	19.1%	15.4%	65.4%	—	—	2,847,290

200. The first question to ask about the details behind Table 10 is whether abandoning early voting in 2012, among those who voted early in 2008, was greatest among those who had previously voted in the eliminated period. If it had been, then the strain on early voting sites during the remaining early voting period would not have been so great, though the strain on Election Day precincts and absentee ballot-counting facilities might have been greater.

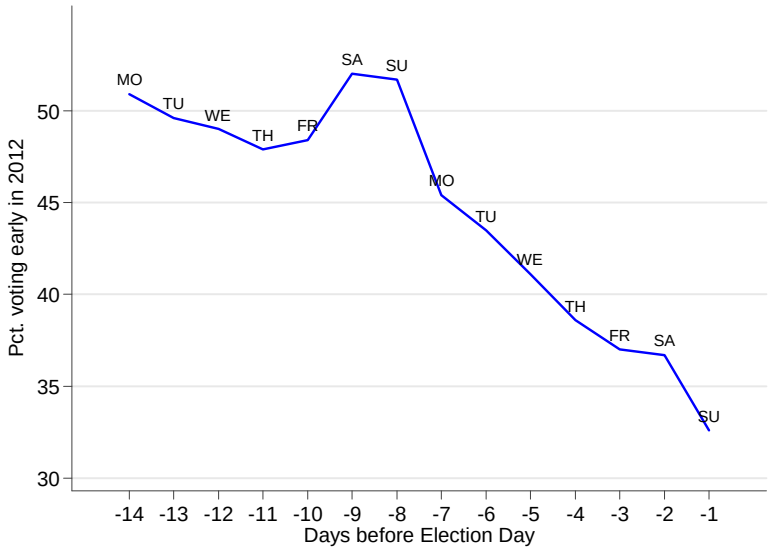
201. In fact, the opposite was true. Among those who voted early in 2008, the earliest early voters were much more likely to vote early in 2012 than the latest early voters.

202. This pattern is illustrated below in Figure 22. The solid line graphs the percentage of early voters in 2008 who returned to vote early in 2012, broken down by the day when they voted early in 2008.[112] With the exception of the surge in the graph on the middle weekend of the 2008 period, the line marches steadily downward, until it reaches 32.6% on the last Sunday of the 2008 early voting period. The surge among previous Saturday and Sunday

[111] A total of 2.4 million Floridians voted early in 2012, compared to 2.6 million in 2008.
[112] For instance, 50.9% of early voters who voted on the first day of early voting in 2008 (a Monday) returned to vote early in 2012; those who had voted on the first Tuesday of early voting in 2008 voted early at a slightly lower rate in 2012, 49.6%; etc.

voters at the middle of the period suggests that these early voters were particularly motivated to vote early.

Figure 22. Percentage of 2008 early voters who returned to vote early in 2012 (as a percentage of all 2008 early voters)
(Source: Gronke and Stewart 2013)

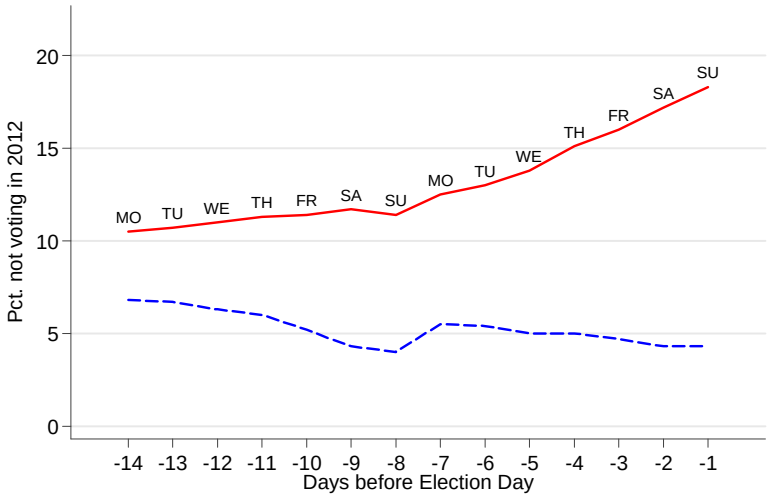


203. The earliest early voters in Florida in 2008, plus those who voted in the middle weekend, were the most committed to this mode of voting; in 2012, they were the *least likely* to be deterred by reports of long waits to vote early once the early voting centers opened. The opposite of that pattern is seen among those who had waited until the end of the 2008 early voting period — they *do* appear to have been deterred from voting early in 2012. The question here is whether these early voters from late in the 2008 early voting period shifted to other voting modes in 2012, or whether they failed to vote at all.

204. The answer is that many of the latest early voters in 2008 failed to vote in 2012. This is illustrated by the graph in Figure 23, which shows two quantities. The solid line graphs the percentage of early voters from 2008 who failed to vote in 2012, *despite the fact they were on the voter registration rolls in 2012.* Thus, for instance, early voters who failed to vote at all in

2012, despite still being on the registration rolls, comprised 11% of those who voted on the first day of early voting in 2008. Early voters in the same category — non-voters in 2012 despite being registered — comprised 18% of those who voted on the last day of early voting in 2008. [113]

Figure 23. Percentage of 2008 early voters who failed to vote at all in 2012 (as a percentage of all 2008 early voters)
(Source: Gronke and Stewart 2013)



205. In short, the later in the period one voted early in 2008, the less likely one was to vote at all in 2012, despite being registered.

206. The lessons from Florida applied to North Carolina are these: First, the earliest early voters from 2012 are likely to continue voting early in 2016. However, they will be forced to vote within a narrow window that will now need to accommodate both their desire to vote early, *and* the desire of those who would have voted in the latter part of the period any way. Second, some will be deterred from voting altogether in 2016, out of fear that the lines to vote will be unreasonable.

[113] As a control, the dashed line shows the comparable quantities for voters who were no longer registered in 2012. They comprised 7% of first-day early voters in 2008 and 5% of last-day early voters. A statistical test using linear regression confirms that the slight downward trend in the dashed line in Figure 23 is statistically indistinguishable from zero.

207. In addition, my analysis of Florida leaves me with no doubt that the elimination of a week of early voting in North Carolina will increase congestion at the polls on *Election Day*. This will be due to two effects. First, some fraction of voters who would have voted early during the eliminated period will shift to voting on Election Day, rather than in the second week of early voting. In Florida, this is what approximately 15% of 2008 early voters did. (The evidence in Table 10 shows that when previous early voters shifted out of early voting, they tended to shift into Election Day voting, another in-person mode, not to absentee by-mail balloting.) Also, those who voted in the *second* week of early voting (i.e., the period not eliminated) are likely to shift to Election Day on account of reports of greater congestion at early voting sites. This appears also to have happened in Florida — over 20% of second-week early voters in 2008 voted on General Election Day in 2012.

208. Based on research I have conducted into changes to Florida's early voting laws that affected the 2012 presidential election — changes that were similar to the changes effected by HB 589 (including the opportunity for counties to retain the same number of early voting hours they had used in 2008) — it is reasonable to expect that essentially the same number of people will seek to utilize early voting in the 2014 and 2016 federal elections as they did in 2010 and 2012, respectively. This research strongly suggests that the end result will be greater congestion at the polls, longer waits, and a reduction in voting, especially in the 2016 presidential election.

209. In North Carolina, over 900,000 voters went to the polls the first week of early voting in 2012, a number that constituted 35.2% of all early voters. (See Exhibit 40.)

210. Therefore, it seems highly unlikely that adaptations to the restrictions on early voting in HB 589 will do anything other than impose a burden on early voters, to the point of

sending some early voters away in frustration. The experience of Florida was precisely this, which undoubtedly is why the Florida legislature restored the former early voting calendar, through a nearly unanimous vote, on the heels of the 2012 election.

Summary and conclusion

211. Early voting has grown in popularity in North Carolina over the past two decades, particularly since the state opened early voting up to a "same-day registration" system starting with the 2008 presidential election.

212. African American voters have tended to favor early voting the most in elections with a competitive race at the top of the ballot. These elections are all the presidential elections, and the midterm congressional elections with competitive U.S. Senate races.

213. Provisions in HB 589 intended to ameliorate the reduction in early voting days are unlikely to succeed. North Carolina's early voting sites are among the most congested in the nation, as measured by average waiting times to vote early in the state in 2008 and 2012. HB 589 requires counties to maintain the same number of aggregate early voting hours, compared to elections four years before. However, unless voters who would have voted during the first week of early voting vote during these expanded hours — and *only* during these expanded hours — congestion at North Carolina's early voting sites will get much worse.

214. HB 589 bears an uneasy resemblance to Florida's ill-fated HB 1355, which similarly reduced early voting days while allowing counties to maintain the total number of early voting hours as before. The experience of Florida provides one of the best opportunities to learn about how restricting the number of days of early voting will affect the voters of the state. The effects of that law were so widely derided that the early voting provisions were significantly revised, by a nearly unanimous vote, in the 2013 session of the Florida legislature.

Revoking Out-of-Precinct Counting of Provisional Ballots

215. HB 589 puts an end to the practice in North Carolina by which voters can appear at a polling place that is not their precinct of residence, cast a provisional ballot, and then have the ballot counted, to the degree that the offices on the ballot cast overlap those on the ballot that the voter would have cast at his home precinct. This feature of North Carolina election law has provided a way for voters who appear at the wrong precinct on Election Day to expeditiously address the problem of being out-of-precinct.

216. The alternatives for voters who appear on Election Day at a precinct that is not their precinct of residence are rarely good. Chief among these are traveling to the county election office, or calling the county election office, in order to resolve a question about the voter's registration. Because this is the most time-compressed day of an election season, which can verge on the chaotic, resolving a registration issue on Election Day is rarely easy or quick. Therefore, allowing out-of-precinct voters — who are in fact registered to vote in the county — to cast a ballot then-and-there is often the only practical way a voter has to vote in an election. Revoking the out-of-precinct counting of provisional ballots will certainly result in new lost votes in North Carolina.

217. African Americans are twice as likely to vote an out-of-precinct provisional ballot in North Carolina as are whites. Had HB 589 passed before the 2012 presidential election, between 2,000 and 3,300 African Americans would have gone to the polls that day, but not had their vote for president, governor, or other statewide offices counted.[114]

[114] This is, of course, in addition to any local elections in which voters casting provisional ballots could have been eligible to vote.

218. In this section, I address the provision of HB 589 that eliminates out-of-precinct voting through the use of provisional ballots. After an introduction to provisional ballots in North Carolina (¶¶ 219–228), I discuss statistics that describe how provisional ballots are resolved (¶¶ 229–230), racial differences in the casting and counting of provisional ballots (¶¶ 231–236), and the racial disparities that are likely to arise as a consequence of changes wrought by HB 589 (¶¶237–244).

Provisional balloting in North Carolina

219. Provisional ballots are a "fail-safe" procedure that many states, including North Carolina,[115] implemented following the passage of the National Voter Registration Act (NVRA). The NVRA ended the requirement common in most states that new voters register only at the board of elections office, and that they be registered by election officials. One effect of allowing voters to register through a variety of channels that were not directly overseen by election officials, such as mail-in forms, was an increase in registration errors. Voters often came to vote on Election Day, believing they were registered after having submitted the proper registration form, only to discover there were problems with the registration. Provisional ballots gave an additional option to voters if there was a registration problem on Election Day, other than to be sent away without voting.

220. In the aftermath of the 2000 presidential election, studies identified faulty voter registration records as one of the major problems leading to "lost votes" on Election Day.[116]

[115] In the 2000 election, Wake County, North Carolina provided a case study for the value of provisional ballots in managing registration problems that arise on Election Day. With a surge of last-minute registrations to process, the county was unable to get some registrations entered into the system before Election Day occurred. The result was 20,000 provisional ballots cast in that election, the great majority of which were eventually counted. See "Wake County Has a Recount of Its Own," WRAL.com, Nov. 11, 2000, http://www.wral.com/news/local/story/153669/
[116] Caltech/MIT Voting Technology Project, *Voting: What Is/What Could Be*, July 2001

This, in turn, helped prompt Congress to include a provision in the Help America Vote Act (HAVA) requiring states to enact provisional ballot legislation, if they had not already.[117]

221. Despite efforts to reduce voter registration errors after the passage of HAVA, millions of people still experience registration problems when they go to the polls, and a significant fraction end up casting a provisional ballot. The 2012 Cooperative Congressional Election Study, a large academic study that interviewed over 40,000 voters, found that 2% of people who attempted to vote experienced some type of registration problem, and that over a quarter of these individuals reported casting a provisional ballot.[118]

222. According to the 2012 *Statutory Overview Report* issued by the U.S. Election Assistance Commission, all states except Idaho and Minnesota use provisional ballots in federal elections, though the technique goes by different terms in some states.[119] Furthermore, states vary in the reasons they issue provisional ballots, and why provisional ballots will be accepted for counting.

223. Before the passage of HB 589, North Carolina reported to the EAC that four situations would trigger a voter being given a provisional ballot:[120]

- Name not on poll or registration list
- Registration reflects error in party listing
- Voter does not have proper ID

[117] HAVA section 302, 42 U.S.C. § 15482.
[118] Cited in Daron Shaw and Vincent Hutchings, "Report on Provisional Ballots and American Elections," Report prepared for the Presidential Commission on Election Administration, June 21, 2013, p. 6. https://www.supportthevoter.gov/files/2013/08/Daron-Shaw-Provisional-Ballots-Shaw-and-Hutchings.pdf
[119] U.S. Election Assistance Commission, *2012 Statutory Overview Report*, pp. 6–9. This report may be downloaded at the following URL: http://www.eac.gov/assets/1/Documents/EAC_StatutoryOverviewReport_FINAL-rev.pdf. Idaho and Minnesota have Election Day Registration, which obviates the need for provisional ballots.
[120] U.S. Election Assistance Commission, *2012 Statutory Overview Report*, p. 35. The following are triggers North Carolina reported that *did not apply* to the state's provisional ballot law: voter eligibility cannot be immediately established; challenge of voter as ineligible; and voter request absentee ballot but has not cast it.

- Voting during extended polling hours

224. The SBOE document entitled "Provisional Voting Administrative Procedures,"[121] last revised September 2011, lists the following reasons why a provisional ballot might be counted:

1. Voters who moved to a new precinct within the county more than 30 days ago and did not report that move to the county board. ("unreported move voters")
2. Voters who are registered but do not appear on the precinct records. ("unrecorded voters")
3. Voters who were previously removed as part of list maintenance or "purge" but claim continuous residence and right to vote. ("previously removed voters")
4. Voters who are assigned to the wrong election district in a particular contest. ("jurisdictional dispute voters")
5. Voters who are in a precinct other than the precinct of residence, but who wish to vote in that precinct nonetheless. ("out of precinct voters")
6. Voters whose party affiliation has been incorrectly assigned due to an administrative error or who dispute their assigned party. ("incorrect party voters")
7. Voters who appear after 7:30 p.m. and vote by virtue of a court or State Board order keeping the polls open. ("extended hours voters")
8. Voters required to show ID but who do not show ID. ("ID not provided voters")[122]

[121] Downloaded at the following URL: ftp://www.app.sboe.state nc.us/Election%20Uniformity%20Project/Election%20Uniformity%20by%20Chapter/Chapter%2002B-Provisional%20Voting/Chapter%202B%20-%20Provisional%20Voting.pdf
[122] Ibid., pp. 2-6–2-8.

225. This same document also states that the "The provisional ballot of every eligible voter will be counted in all races for which the voter was entitled to vote."[123]

226. Out-of-precinct provisional ballots may be counted in whole (if the offices on the ballot cast are all on the ballot that would have been cast in the correct precinct) or in part (if some of the offices on the ballot cast are not on the ballot that would have been cast in the correct precinct), depending on the overlap in offices on the ballots in the voter's residential precinct and the precinct where the voting takes place.

227. Over 50,000 North Carolinians were issued a provisional ballot in the presidential elections of 2008 and 2012; over 22,000 were issued a provisional ballot in the midterm elections of 2006 and 2010. These numbers represent approximately 3% of Election Day voters in the two presidential elections and 1.5% of Election Day voters in the mid-term congressional elections. (Table 11 below reports the number of ballots given out for each of these elections, along with the total number of voters, for comparison.) Considering the electorate as a whole, provisional ballots are given to approximately 1% of all voters.

Table 11. Number of provisional ballots distributed, 2006-2012.
(Source: State-provided voter history and provisional ballot files)

Election year	Provisional ballots	Total voters	Election Day voters	Provisional ballots as pct. of voters	Provisional ballots as pct. of Election Day voters
2006	22,775	2,025,942	1,603,592	1.1%	1.4%
2008	54,002	4,363,494	1,712,173	1.2%	3.2%
2010	26,257	2,703,967	1,741,152	1.0%	1.5%
2012	51,192	4,545,180	1,767,860	1.1%	2.9%

228. The state-provided provisional ballot file records eight different reasons for why provisional ballots are distributed. Being out-of-precinct, which is labeled "incorrect precinct" in the state-provided data, is the third-most-common reason, behind "no record of registration" and

[123] Ibid., p. 2-6.

"unreported move." Nearly 7500 provisional ballots were given out for the "incorrect precinct" reason in the 2012 presidential election. (See Table 12, below, which reports the reasons provisional ballots were distributed in 2006, 2008, 2010, and 2012.)

Table 12. Reasons provisional ballots distributed, 2006, 2008, 2010, 2012.
(Source: State-provided provisional ballot file)

	Election year				
Reason	2006	2008	2010	2012	Total
No Record of Registration	6,949	29,563	10,112	26,096	72,720
	(30.5%)	(54.7%)	(38.5%)	(51.0%)	(47.2%)
Unreported Move	10,474	11,604	7,410	9,720	39,208
	(46.0%)	(21.5%)	(28.2%)	(19.0%)	(25.4%)
Incorrect Precinct	3,115	6,032	6,052	7,486	22,685
(Out-of-precinct)	(13.7%)	(11.2%)	(23.0%)	(14.6%)	(14.7%)
Previously Removed	1,599	4,707	2,036	5,273	13,615
	(7.0%)	(8.7%)	(7.8%)	(10.3%)	(8.8%)
Jurisdiction Dispute	503	1,314	378	1,724	3,919
	(2.2%)	(2.4%)	(1.4%)	(3.4%)	(2.5%)
ID Not Provided	80	695	112	757	1,644
	(0.4%)	(1.3%)	(0.4%)	(1.5%)	(1.1%)
Voted During Extended Hours	35	38	133	62	268
	(0.2%)	(0.1%)	(0.5%)	(0.1%)	(0.2%)
Incorrect Party	20	49	24	74	167
	(0.1%)	(0.1%)	(0.1%)	(0.1%)	(0.1%)
Total	22,775	54,002	26,257	51,192	154,226
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

The resolution of provisional ballots

229. When we consider all 154,226 provisional ballots distributed in the federal elections from 2006 to 2012, only about half (82,383, or 53.4%) were counted, either partially or entirely. The out-of-precinct provisional ballots are a significant exception to this pattern. Over the same period, of 22,685 provisional ballots distributed for the out-of-precinct reason, 92.6% (17,998) were counted, either partially (9,754) or entirely (11,258). Table 13, below displays

statistics about the resolution of all provisional ballots, in total, for federal elections from 2006 to 2012.[124] Exhibit 46 breaks this table down by election year.

Table 13. Resolution of provisional ballots, 2006, 2008, 2010, and 2012
(Source: State-provided provisional ballot file)

	Resolution			
	Not counted	Partial	Approved	Total
No Record of Registration	56,567	1,531	14,619	72,717
	(77.8%)	(2.1%)	(20.1%)	(100.0%)
Unreported Move	2,886	3,928	32,394	39,208
	(7.4%)	(10.0%)	(82.6%)	(100.0%)
Incorrect Precinct	1,672	9,754	11,258	22,684
(Out-of-precinct)	(7.4%)	(43.0%)	(49.6%)	(100.0%)
Previously Removed	8,562	246	4,807	13,615
	(62.9%)	(1.8%)	(35.3%)	(100.0%)
Jurisdiction Dispute	991	166	2,762	3,919
	(25.3%)	(4.2%)	(70.5%)	(100.0%)
ID Not Provided	1,076	31	537	1,644
	(65.5%)	(1.9%)	(32.7%)	(100.0%)
Voted During Extended Hours	53	6	209	268
	(19.8%)	(2.2%)	(78.0%)	(100.0%)
Incorrect Party	32	38	97	167
	(19.2%)	(22.8%)	(58.1%)	(100.0%)
Total	71,839	15,700	66,683	154,222
	(46.6%)	(10.2%)	(43.2%)	(100.0%)

230. Because partially counted ballots will have statewide races counted, out-of-precinct provisional ballots can end up contributing a significant number of votes to the final tally for races such as governor and president. These ballots accounted for 3,014 additional votes in 2006, 5,534 in 2008, 5,756 in 2010, and 6,708 in 2012.

Racial differences in the casting of provisional ballots

231. African Americans are more likely to be given provisional ballots in North Carolina than whites, by roughly a factor of two. This is true of all provisional ballots as a general matter, and of out-of-precinct provisional ballots specifically.

[124] The "Total" columns of Tables 12 and 13 are different, because four provisional ballot records are missing information about the resolution of the ballots.

232. To perform this portion of the analysis, I needed to ensure that I had racial information about as many people as possible who were given provisional ballots. The provisional ballot form asks the voter to identify his or her race.[125] However, a high fraction of individuals given a provisional ballot either do not indicate their race, or it is not entered into SEIMS. For instance, of the 154,226 provisional ballots recorded in the provisional ballot file for the federal elections beginning in 2006, 107,051 (69.4%) did not have any racial information in the file. (An additional 3,462 provisional ballots carry the designation of "unknown" race.) This is in contrast with the 2012 "snapshot" voter file, in which racial information is present in all records. (A total 195,587 of 11,352,660 records in the snapshot file designate the race as "unknown." This is 1.72% of the records.)

233. Therefore, to have as much information as possible about the race of potential voters who were given a provisional ballot, I merged the provisional ballot file with the 2012 snapshot file, using county ID and the voter registration number as the linking variables, and then used information from the snapshot file to fill in missing racial data from the provisional voter file. I report the details of this procedure in Exhibit 47.

234. The greater rate of casting provisional ballots by blacks is illustrated in Table 14, below, which reports the number of provisional ballots cast by black and white voters overall (Table 14a) and the number of provisional ballots cast for the out-of-precinct reason (Table 14b). In addition to the raw numbers, provisional ballot usage is also reported as a percentage of Election Day turnout by race. Finally, to illustrate the relative usage of provisional ballots by race, the final column reports the ratio of the black percentage to the white percentage.

[125] The form on the provisional ballot envelope is shown at North Carolina State Board of Elections, "Provisional Voting Administrative Procedures," revised 9/2011, p. 2-32.

Table 14. Provisional ballot usage, by race.
(Source: State-provided provisional ballot, snapshot, and voter history files)

a. All provisional ballots

	Black			White			
Year	Prov. Ballots	Election Day voters	Pct.	Prov. Ballots	Election Day voters	Pct.	Ratio: Black pct. -to- White pct.
2006	4,533	274,524	1.65%	12,105	1,291,731	0.94%	1.76
2008	9,565	267,448	3.58%	19,334	1,361,660	1.42%	2.52
2010	7,228	342,932	2.11%	9,262	1,338,713	0.69%	3.05
2012	12,137	289,854	4.19%	19,612	1,370,990	1.43%	2.93

b. Out-of-precinct provisional ballots

	Black			White			
Year	Prov. Ballots	Election Day voters	Pct.	Prov. Ballots	Election Day voters	Pct.	Ratio: Black pct. -to- White pct.
2006	732	274,524	0.27%	1,933	1,291,731	0.15%	1.78
2008	1,439	267,448	0.54%	3,334	1,361,660	0.24%	2.20
2010	2,541	342,932	0.74%	2,594	1,338,713	0.19%	3.82
2012	2,236	289,854	0.77%	3,992	1,370,990	0.29%	2.65

235. We see in Table 14 that African Americans are between 1.76 and 2.93 times more likely than Whites to be given a provisional ballot in federal elections, and between 1.78 and 3.82 times more likely to be given a provisional ballot for voting out-of-precinct.

236. In reading Table 14, it is important to keep in mind that it is not possible to assign a race to 35.4% of the records in the provisional ballot file. (See the discussion in Exhibit 47.) Therefore, the counts of provisional ballots presented in Table 14 clearly understate the number of ballots distributed, to both blacks and whites. If we were simply to allocate the "unknown race" provisional ballot records to whites and blacks proportionately, the numbers in Table 14 would increase by over a factor of 1.5.[126] In the specific case of out-of-precinct provisional

[126] The reasoning is this: If racial information is missing from provisional ballot records at random, then the numbers reflected in Table 14 are only 64.6% (i.e., 100% - 35.4%) of the correct numbers. Therefore, applying algebra, the proper correction to apply is to multiply each number by 1/.646, or 1.55. As mentioned above in

ballots, for instance, this would suggest that the correct number of African Americans being given one of these ballots was 3,461 (not 2,236) and the correct number of whites was 6,180 (not 3,992). If we were to apply these corrections, all the percentages and ratios in the table would remain unchanged.

Racial disparities as a result of counting provisional ballots

237. As reported above in paragraph 229, out-of-precinct provisional ballots are counted at very high rates, compared to provisional ballots issued for other reasons. (In 2012, for instance, 89.6% of out-of-precinct provisional ballots were counted, either partially or in full, compared to an overall counting rate of 38.1% for provisional ballots issued for all other reasons.)

238. Overall, whites are more likely to have their provisional votes counted than blacks. For all the provisional ballots in the provisional ballot file beginning with 2006, 72.5% of white ballots, but only 70.2% of black ballots, were counted.[127]

239. However, among the out-of precinct ballots, blacks and whites have their ballots counted at rates that are statistically equivalent. For the out-of-precinct provisional ballots, 96.0% of ballots cast by whites and 95.7% of ballots cast by blacks were counted.[128]

240. Because a high fraction of provisional ballots cast for the out-of-precinct reason are counted, either fully or partially, these provisional ballots end up contributing consequential numbers of votes cast by white and black voters. This is especially true in "top-of-the-ballot" races that are on all ballots in the state, such as president, governor, and U.S. senator.

Exhibit 47, the race of African American provisional voters is more likely, by a small amount, to be missing, compared to white provisional voters. If that is true, then the correction I suggest here is conservative, from the perspective of my analysis.

[127] This difference is statistically significant at a *p* value less than .0005, using a chi-squared test ($\chi 2 = 55.2$, d.f. = 1).

[128] This difference would only be statistically significant at a *p* value of .33, using a chi-squared test (d f. = 1), which is well above the criterion usually used in the social sciences for establishing statistical significance.

241. In 2012, at least 2,079 provisional ballots cast for the out-of-precinct reason by African Americans ended up being counted. This number of ballots represented 0.72% of all votes cast by African Americans on General Election Day 2012, and 0.20% of all ballots cast by African Americans, regardless of voting mode.

242. In contrast, in 2012 at least 3,749 provisional ballots cast for the out-of-precinct reason by whites were counted. While the total number of these ballots is greater than the total number cast by African Americans for this reason, it is a smaller share of total ballots, viewed in percentage terms. These 3,749 provisional ballots cast by whites for the out-of-precinct reason accounted for 0.27% of the total number of ballots cast by whites on General Election Day 2012, and 0.12% of the total number of ballots cast by whites overall.

243. Recalling the discussion in paragraph 236 above, it is likely that the numerical estimates in the previous two paragraphs are significant under-estimates. Among the 2012 provisional ballots, 37.9% of the records could not have a race assigned to the voters. Therefore, to derive reasonable estimates of the actual number of counted provisional ballots discussed in paragraphs 241 and 242, one can divide the numbers reported there by 0.621. (See the discussion in footnote 126.) Applying this correction yields an estimate that 3,348 ballots cast by blacks were counted in 2012 via out-of-precinct provisional ballots, which would amount to 1.16% of votes cast by African Americans on General Election Day. In addition, we would estimate that 6,037 ballots cast by whites were counted in 2012 via out-of-precinct provisional ballots, or 0.44% of votes cast by whites on General Election Day.

244. Regardless of how the usage rate is calculated, as a percentage of Election Day votes or all votes cast, blacks are more likely to have their vote count because of the out-of-precinct provisional ballot practice than are whites. Therefore, it is clear that ending the practice

of counting out-of-precinct provisional ballots reduces the voting power of African Americans in the state of North Carolina by several thousand votes in statewide election years.

Summary and conclusion

245. North Carolina was a pioneer in the use of provisional ballots as a "fail safe" measure, guarding against voter and administrative error so that more voters might have their votes count on Election Day. North Carolina's out-of-precinct provisional ballot practice fit within that tradition. African Americans are more likely to avail themselves of out-of-precinct provisional ballots. Because a very high proportion of "incorrect precinct" provisional ballots are counted, the number of votes added because of this provision, which was eliminated by HB 589, has been large. Therefore, the elimination of out-of-precinct provisional ballots will have a disparate impact on the voting power of African Americans in North Carolina.

Report Conclusions

246. HB 589 represents the most significant restriction on access to the polls in the state of North Carolina since the passage of the 1965 Voting Rights Act. Focusing on the policy changes addressed in detail in this report, the effect of implementing HB 589 will be to introduce burdens on hundreds of thousands of North Carolina voters, a disproportionate number of which are African Americans.

247. Had HB 589 been in effect for the presidential election of 2012, over 30,000 African Americans who registered during the same-day registration period would have been unable to register during that period, almost 300,000 early voters would have been shoehorned into more congested early voting and Election Day voting sites, and at least 2,000 African American voters would have had their out-of-precinct votes left uncounted. Although white

voters would also have been burdened by these election law changes, in every case, many more African Americans would have been burdened than whites, considered as a proportion of registered voters.

248. Any one of these changes would be a significant burden to African American voters in North Carolina. Considered together, and in combination with the newly restrictive voter identification provisions of HB 589,[129] the combination of burdens erect a significant barrier to the ability of African American voters to exercise political power at the ballot box, precisely at the moment voter registration among African Americans is surging.

[129] Charles Stewart III, "Voter ID: Who has them? Who shows them?"66 *Oklahoma Law Review* 21 (2013).

I declare under penalty of perjury that the foregoing is true and correct. Executed this 11th day of April, 2014.

Charles Stewart III

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

UNITED STATES OF AMERICA, Plaintiff, v. THE STATE OF NORTH CAROLINA, *et al.*, Defendants.	Civil Action No. 1:13-CV-861

Amended declaration of Charles Stewart III, Ph.D.

Pursuant to 28 U.S.C. § 1746, I, Charles Stewart III, make the following declaration:

The accompanying document updates Exhibit 34 (pages 87 and 88 in the Exhibits section) of the expert report I submitted on April 11, 2014. It contains a revised calculation of one of the columns reported in the table that appears in Exhibit 34. The revised table corrects the calculation of normalized values of the number of registrations each week during 2012. (The revised column is indicated as such in the accompanying table.) Figure 8, on page 50 in the main body of the report, which graphs values reflected in this table, is correct as originally submitted.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 22nd day of April, 2014.

Charles Stewart III

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Exhibit 1. Curriculum vitae

CURRICULUM VITAE

CHARLES HAINES STEWART III

DEPARTMENT: Political Science
CITIZENSHIP: United States

EDUCATION

INSTITUTION	Degree	Date
Stanford University	Ph.D.	1985
Stanford University	A.M.	1982
Emory University	B.A.	1979

TITLE OF DOCTORAL THESIS: The Politics of Structural Reform: Reforming the Budgetary Process in the House, 1865-1921 (Dissertation committee: John E. Chubb [chair], Terry M. Moe, and John A. Ferejohn)

PROFESSIONAL EXPERIENCE

MIT

1985–1989	Assistant Professor of Political Science
1989–1999	Associate Professor of Political Science
1990–1993	Cecil and Ida Green Career Development Associate Professor of Political Science (3-yr. term)
1999–present	Professor of Political Science
2007–present	Kenan Sahin Distinguished Professor of Political Science

MIT: Administrative

2002–2005	Associate Dean of Humanities, Arts, and Social Sciences
2002–present	Co-director, Caltech/MIT Voting Technology Project
2005–2010	Head of the Department of Political Science

Non-MIT

1989–1990	National Fellow, Hoover Institution, Stanford University
1998 (summer)	Visiting Associate Professor of Political Science, Stanford University
2010–2011	Visiting Scholar, Moritz College of Law, The Ohio State University
2010–	Consultant, Pew Center on the States
2011–2012, 2013–	Expert Witness, U.S. Department of Justice

SEMINARS, COLLOQUIA, PUBLIC PRESENTATIONS, ETC.

Note: The following list excludes numerous presentations at professional conferences.

December 2013. "Findings from the Survey of Local Election Officials," testimony given to the Presidential Commission on Election Administration, Washington D.C.

August 2013. "The Election Administration and Voting Survey: A User's View," testimony given to the Presidential Commission on Election Administration, Denver, Colorado.

June 2013. "Waiting in Line to Vote," testimony given to the Presidential Commission on Election Administration, Coral Gables, Florida.

June 2013. "A Voter's Eye View of the 2012 Election," presentation to the summer meeting of the Florida State Association of Supervisors of Elections, Marco Island, Florida.

June 2013. "A Voter's Eye View of the 2012 Election," presentation to the annual meeting of the Massachusetts Town and City Clerks Association, Falmouth, Massachusetts.

May 2013. "Who Favors Voter ID?" presentation to the biennial conference on the Cooperative Congressional Election Study, Sundance, Utah.

May 2013. "Voter ID: Who Has Them? Who Shows Them? Who Favors Them?" presentation in the American Politics Speakers Series, MIT.

May 2013. "A Voter's Eye View of the 2012 Election," presentation to a workshop with Ohio election officials on election reform in Ohio, Moritz College of Law, The Ohio State University.

April 2013. "Barriers to Voting in 2012," presentation at the symposium on "Voter Integrity or Suppression: The Effect of the New Voting Laws in 2012 and Beyond," Boston Bar Association.

March 2013. "Waiting to Vote in 2012: Evidence from a National Survey," presentation at the conference "The Voting Wars: Elections and the Law from Registration to Inauguration," University of Virginia Law School.

March 2013. “A Voter’s Eye View of the 2012 Election,” presentation to the Election Center, New Orleans, Louisiana.

February 2013. “Voter ID: Who Has Them? Who Shows Them?” presentation at the Election Law Symposium, University of Oklahoma College of Law.

January 2013. “A Voter’s Eye View of the 2012 Election,” presentation to the Election Funders Roundtable, Washington, D.C.

January 2013. “A Voter’s Eye View of the 2012 Election,” presentation to the National Association of State Election Directors, Washington, D.C.

January 2013. “A Voter’s Eye View of the 2012 Election,” presentation in the Miller Center of Public Affairs, University of Virginia.

December 2012. “The 2012 Survey of the Performance of American Elections,” presentation at the Voting in American Conference, sponsored by the Pew Charitable Trusts, Washington, D.C.

October 2012. “The Voting Wars of 2012,” presentation given to a public meeting sponsored by the League of Women Voters, Lexington, Massachusetts.

June 2012. “Measuring the Performance of Elections,” presentation given at the annual meeting of the Massachusetts Town and City Clerks Associations, North Falmouth, Massachusetts.

June 2012. “The Measure of American Democracy,” presentation given at the 2nd Annual Social Science Librarians’ Boot Camp, Tufts University.

May 2012. “What Hath HAVA Wrought? Or, the Garbage Man Cometh,” presentation at the symposium on “HAVA at 10,” Moritz College of Law, the Ohio State University

April 2012. “Partisanship and Voter Confidence: 2000–2010,” presentation in the American Politics Speakers Series, MIT.

April 2011. “What Hath HAVA Wrought? Consequences, Intended and Not, of the post-*Bush v. Gore* Reforms,” faculty workshop in the Moritz College of Law, The Ohio State University

July 2009. “Racial Discrimination in Election Administration,” presentation at the annual conference of the National Association of County Recorders, Election Officials, and Clerks, Nashville, Tennessee.

July 2009. “The 2008 Election: Trends and Turnout,” presentation at the annual meeting of the International Association of Clerks, Recorders, Election Officials, and Treasurers, Spokane, Washington.

December 2008. “The 2008 Survey of the Performance of American Elections,” presentation at the Voting in America Conference, sponsored by the Pew Center on the States, Washington, DC.

January 2007. “U.S. Senate Elections before 1914,” seminar in the Department of Political Science, University of Pennsylvania.

December 2006. “Lessons from Electronic Voting in Georgia.” Talk given at a Public Hearing on the Voter Verifiable Audit Trail Pilot Program and Electronic Voting, Georgia Secretary of State, Powder Springs, Georgia.

May 2006. “Elections since 2000: *Still* in Search of Accurate Vote Totals?” Talk given to the Milwaukee Public Policy Forum, Milwaukee, Wisconsin.

December 2005. “U.S. Senate Elections before 1914,” seminar in the Department of Political Science, University of Wisconsin.

October 2004. “Increasing Voter Participation and Confidence,” talk given at the symposium on The Integrity of the Electoral Process,” University of Toledo College of Law.

April 2004. “The Long Strange Trip of Election Reform: Why 2004 Won't Be MuchDifferent from 2000,” talk given at the symposium on Voting in an E-Democracy, Yale University

April 2000. "The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Political Science, New York University.

January 2000. "The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Political Science, Yale University.

November 1999. "The Inefficient Secret: Organizing for Business in the U.S. House of Representatives, 1789–1861," seminar in the Department of Politics, Princeton University.

November 1998. “Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives,” seminar in the Department of Political Science, Columbia University.

April 1994. "Ain't Misbehavin': Reflections on Two Centuries of Congressional Corruption," seminar in the Department of Government, Harvard University.

October 1992. "Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the Political Science Department, Yale University.

April 1992. "Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the Politics Department, Princeton University.

February 1992. "Stacking the Senate, Changing the Nation: Republican Rotten Boroughs and American Political Development," seminar in the political economy program, Government Department, Harvard University.

November 1991. "Stacking the Senate, Changing the Nation," seminar in the Department of Political Science, Duke University.

November 1991. "Committee Hierarchies in the Modernizing House of Representatives," seminar in the program on political economy, University of North Carolina, Chapel Hill.

March 1991. "Through a Glass Darkly: The U.S. in the Middle East," lecture in the MIT Community Series on the Middle East.

October 1990. "A Theory of Supreme Court Nominations," presentation to the Harvard/MIT Discussion Group on Political Economy (with Peter Lemieux).

April 1990. "Political Institutions and Fiscal Policy," seminar in the Domestic Studies Program, Hoover Institution, Stanford University.

February 1990. "Parties and Deficits: Some Historical Evidence," seminar in the Department of Political Science, University of California at San Diego.

October 1989. "Advice? Yes! Consent? Maybe. Supreme Court Nominations from Washington to Reagan," seminar in the Workshop on Politics and Organizations, Graduate School of Business, Stanford University.

March 1987. "How Does Reform Change Congress? The Consequences of Budget Reform in the House of Representatives, 1865-1921," presentation in the Seminar on History and Political Economy, The University of Pennsylvania.

FIELDS OF INTEREST

American politics
Legislative politics
Campaigns and elections
Election reform
American political development
Research methods

AWARDS

1989	The Everett Moore Baker Memorial Award for Excellence in Undergraduate Teaching, M.I.T.
1993–2003	Margaret MacVicar Faculty Fellow, M.I.T. (10-year term)
1994	Mary Parker Follett Award, for Best Published Essay or Article, 1993-1994, Politics and History Section, American Political Science Association (with Barry Weingast).
1999	Franklin L. Burdette Pi Sigma Alpha Award, for Best Paper Presented at the 1998 Annual Meeting of the American Political Science Association. ("Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives")
2000–2003	Class of 1960 Fellow, M.I.T. (3-year term)
2002	Jewell-Loehenberg Award, for best article to have appeared in the *Legislative Studies Quarterly*, Legislative Studies Section, American Political Science Association (with Steven Ansolabehere and James M. Snyder, Jr.)
2002	Jack Walker Award, honoring an article or published paper of unusual significance and importance to the field, Political Organizations and Parties Section, American Political Science Association (with Steven Ansolabehere and James M. Snyder, Jr.)
2002	Best Reference Source 2002 by *Library Journal* for *Committees in the United States Congress, 1789–1946.*
2011	Elected Fellow, American Academy of Arts and Sciences
2011	Phi Beta Kappa (honorary member), Xi Chapter of Massachusetts

2013	Patrick J. Fett Award, honoring the best paper on the scientific study of Congress and the Presidency at the previous meeting of the Midwest Political Science Association (“The Value of Committee Assignments in Congress since 1994")

GRANTS

1989–90, 2000–01	Everett McKinley Dirksen Congressional Leadership Research Center
1991, 2010	Marion and Jasper Whiting Foundation
1991–93	National Science Foundation, "The Development of the Committee System in the House, 1870-1946," SES-91-12345
2002	Boston Foundation, “Voting in Massachusetts”
2003–06	John S. and James L. Knight Foundation, “Internet and Electronic Voting”
2005–07	National Science Foundation, “Collaborative Research: U.S. Senate Elections Data Base, 1871–1913" (with Wendy Schiller).
2007–10	Pew Charitable Trusts and JEHT Foundation, “The 2008 Survey of the Performance of American Elections”
2008–10	Ewing Marion Kauffman Foundation, “Congressional and Executive Staff Seminar”
2012–13	Pew Charitable Trusts, “Measuring Elections”
2012–14	National Science Foundation, “”Workshop on the Science of Voting Technology: Research and Teaching” SES-1153387
2013–15	Pew Charitable Trusts, “Measuring Elections”
2013–14	Democracy Fund, “Voting in America: Matching Problems to Solutions”
2013–14	William and Flora Hewlett Foundation, “Voting in America: Matching Problems to Solutions”

PROFESSIONAL ORGANIZATIONS

American Political Science Association (Sections: Legislative studies, political methodology, politics and history) (Member, E.E. Schattschneider Award Committee, 1988–89) (Member, Investment Committee, 2014–)
Legislative Studies Section of the American Political Science Association (Member, Richard Fenno Award Committee, 1993–94; Chair, CQ Award Committee, 2002–03, 2008–09; Chair, Jewell-Loehenberg Award, 2004–05; Council member, 2005–2007)
Politics and History Section of the American Political Science Association (Council member, 1995–97; Chair, Mary Parker Follett Award Committee, 2001)
Journal of Election Technology and Systems, Editorial Board, 2013–present
Legislative Studies Quarterly, Editorial Board, 2003–2007
Studies in American Political Development, Editorial Board, 2003–present
Congress and the Presidency, Editorial Board, 1994–present
American Politics Quarterly, Editorial Board, 1992–1997
Planning committee, Senate Election Study (1990 election)
Midwestern Political Science Association (Chair, Patrick Fett Award Committee, 2013–14)
Southern Political Science Association
American Association for the Advancement of Science
American Association of Wine Economists

M.I.T. ACTIVITIES AND COMMITTEES

Housemaster, McCormick Hall (1992–present)
- Chair, Housemasters Council (1999–2001)
- Bexley Hall Housemaster Search Committee (chair, 1999–2000)
- Senior House Search Committee (chair, 2009, 2010)

Director, MIT Washington Summer Internship Program (1994–present)
Institute Committees
- HASS-D Review Committee (1993–94)
- Committee on Undergraduate Program (1993–1998; chair, 1995–1997)
- Committee on Curricula (*ex offici*, 1995-1997)
- Committee on Academic Performance (2011–present; chair, 2012–present)
- Task Force on Student Life and Learning (1996–1998)
- *Ad hoc* Advisory Group on Orientation 1998 (1997)
- *Ad hoc* Advisory Committee on the Principles and Goals of MIT's Residential System (1998)
- Special CUP Subcommittee on Pass/No Record Credit and Advanced Placement (chair, 1999–2000)
- Faculty Policy Committee (2001–2003)
- Committee on Faculty Quality of Life (co-chair, 2003–2005)
- Task Force on the Educational Commons (associate chair, 2003–2006)
- Experimental Study Group Advisory Committee (2007–2010)
- Terrascope Advisory Committee (2007–present)
- Subcommittee on the Educational Commons (co-chair, 2007–2009)

Institute-Wide Planning Task Force, Student Life working Group (2009)
Housing Strategy Group (2010–present)
Review Committee on Orientation (2010-present)
Task Force on Dormitory Security (co-chair, 2011–2012)

Political science search committees
Formal theory and research methodology (1986–1989, 1990–1992)
American politics (1988–1989, 1990–1993, 1997–1998; chair, 1992–1993, 1997–1998, 2004–05, chair, 2011)

Department committees
Independent Activities period coordinator (1985–1987)
Graduate admissions (1985–1989, 1990–1993, 2002–2004, 2007–2013)
Financial aid (1986–1989, 1990–1993, 1994–1995; chair, 1990–1993)
Undergraduate program (1987–1989, 1993–2005, 2013–present; chair, 1993–2005, 2013–present)
Computer representative (1994–1995)

HASS distribution oversight committee on cultures and societies (1987–1989)
HASS Overview Committee (1999–2000, 2002–05; chair, 2002–05)
Faculty fellow, Burton House (1988–1989)
Truman Scholarship Selection Committee (1988–1989, 1994–1996, 2002)
Burchard Scholar Selection Committee (1992–1996, 2000, 2002–04)
Kelly-Douglas Prize Selection Committee (2002–04)

PUBLICATIONS

Books

In progress	*Measuring American Elections* (with Barry Burden)
In progress	*Electing the Senate: Indirect Democracy before the 17th Amendment* (with Wendy Schiller)
2012	*Fighting for the Speakership: The House and the Rise of Party Government.* Princeton University Press (with Jeffery A. Jenkins).
2010	*Committees in the U.S. Congress, 1993–2010.* CQ Press (with Garrison Nelson).
2002	*Committees in the United States Congress, 1789–1946*, 4 vols. Congressional Quarterly Press (with David Canon and Garrison Nelson).
2001	*Analyzing Congress* W. W. Norton. [2nd edition, 2012]
1989	*Budget Reform Politics: The Design of the Appropriations Process in the House, 1865-1921.* Cambridge University Press.

Chapters in Edited Collections

2014 "Measuring American Elections" in *Measuring American Elections,* eds. Barry C. Burden and Charles Stewart III.

2014 "The Performance of Election Machines and the Decline of Residual Votes in the U.S." in *Measuring American Elections,* eds. Barry C. Burden and Charles Stewart III.

2014 "Understanding Voter Attitudes toward Election Fraud Across the United States." (With Thad E. Hall) in *Advancing Electoral Integrity*, eds Pippa Norris, Richard W. Frank and Ferran Martinez i Coma. (forthcoming)

2014 "What Hath HAVA Wrought? Consequences, Intended and Unintended, of the Post-*Bush v. Gore* Reforms," in *Bush v. Gore Ten Years Later,* eds. R. Michael Alvarez and Bernard Grofman. (forthcoming)

2011 "Congressional Committees in a Partisan Era: The End of Institutionalization as We Know It?" in *New Directions in Congressional Politics,* ed. Jamie Ll. Carson, Routledge.

2008 "Function follows Form: Voting Technology and the Law," in *America Votes!,* ed. Benjamin E. Griffith American Bar Association.

2008 "Improving the Measurement of Election System Performance in the United States" in *Mobilizing Democracy: A Comparative Perspective on Institutional Barriers and Political Obstacles,* eds. Margaret Levi, James Johnson, Jack Knight, and Susan Stokes, Russell Sage.

2006 "Architect or Tactician? Henry Clay and the Institutional Development of the U.S. House of Representatives" in *Process, Party, and Policy Making: New Advances in the Study of the History of Congress,* eds David W. Brady and Mathew D. McCubbins, Stanford University Press.

2005 "Congress in the Constitutional System," in *Institutions of Democracy: The Legislative Branch,* ed. Sarah Binder and Paul Quirk, Oxford University Press.

2002 "The Evolution of the Committee System in the U.S. Senate" (with David Canon), in *Senate Exceptionalism,* ed., Bruce Oppenheimer, Ohio University Press.

2002 "Order from Chaos: The Transformation of the Committee System in the House, 1810–1822," in *Party, Process, and Political Change in Congress: New Perspectives on the History of Congress,* eds. David Brady and Mathew McCubbins, Stanford University Press.

2001 "The Evolution of the Committee System in Congress," in *Congress Reconsidered,* 7th edition, eds., Lawrence Dodd and Bruce I. Oppenheimer. Congressional Quarterly Press.

1992 "Committees from Randall to Clark," in *The Atomistic Congress,* eds. Ron Peters and Allen Hertzke. M.E. Sharpe.

1992 "Responsiveness in the Upper Chamber: The Constitution and the Institutional Development of the U.S. Senate," in *The Constitution and the American Political Process,* ed. Peter Nardulli. University of Illinois Press.

1991 "Lessons from the Post-Civil War Era," in *Causes and Consequences of Divided Government,* eds. Gary Cox and Samuel Kernell. Westview Press.

1991 "Tax Reform in the 1980s," in *Politics and Economics in the 1980s,* eds. Alberto Alesina and Geoffrey Carliner. University of Chicago Press, pp. 143-170.

Articles in Refereed Journals

2013 "U.S. Senate Elections before the 17th Amendment: Party Cohesion and Conflict, 1871–1913" (with Wendy Schiller and Benjamin Xiong). *Journal of Politics*75(3): 835–847.

2013 "Voting Technology, Vote-by-Mail, and Residual Votes in California, 1990–2010" (with Dustin Beckett and R. Michael Alvarez). *Political Research Quarterly* 66(4): 658–70.

2011 "Adding up the Costs and Benefits of Voting by Mail." *Election Law Journal* 10(3): 1–5.

2011 "Voter Opinions about Election Reform" (with R. Michael Alvarez, Thad E. Hall and Ines Levin) *Election Law Journal* 10(2): 73–87.

2006 "Residual Vote in the 2004 Election" *Election Law Journal* 5(2): 158–169.

2005 "Studying Elections: Data Quality and Pitfalls in Measuring the Effects of Voting Technologies" (with R. Michael Alvarez and Stephen Ansolabehere). *The Policy Studies Journal* 33(1): 15–24.

2005 "Residual Votes Attributable to Technology" (with Stephen Ansolabehere). *Journal of Politics* 67(2): 365–389.

2003 "Out in the Open: The Emergence of Viva Voce Voting in House Speakership Elections" (with Jeff Jenkins). *Legislative Studies Quarterly,* 28(4): 481–508.

2001 "The Effects of Party and Preferences on Congressional Roll Call Voting (with Stephen D. Ansolabehere and James M. Snyder, Jr.). *Legislative Studies Quarterly,* 26(4): 533-572.

2001 "Candidate Positioning in U.S. House Elections," (with Stephen D. Ansolabehere and James M. Snyder, Jr.). *American Journal of Political Science,* 45(1): 136–159.

2000 "Old Voters, New Voters, and the Personal Vote: Using Redistricting to Measure the Incumbency Advantage" (with Stephen D. Ansolabehere and James M., Snyder, Jr.), *American Journal of Political Science,* 44(1): 17–34.

1999 "The Value of Committee Seats in the United States Senate, 1947–91," (with Tim Groseclose), *American Journal of Political Science.* 43(3): 963–973.

1998 "The Value of Committee Seats in the House, 1947-1991," (with Tim Groseclose) *American Journal of Political Science,* 42(2): 453–474.

1994 "Let's Go Fly a Kite: Correlates of Involvement in the House Bank Scandal," *Legislative Studies Quarterly.* 19(4): 521-535.

1992 "Committee Hierarchies in the Modernizing House, 1875-1947," *American Journal of Political Science,* 36(4):835-56.

1992 "Stacking the Senate, Changing the Nation: Republican Rotten Boroughs, Statehood Politics, and American Political Development," (with Barry Weingast) *Studies in American Political Development,* pp. 223-271.

1990 "Television Markets and Senate Elections," (with Mark Reynolds) *Legislative Studies Quarterly,* 15(4): 495-524. (See *LSQ* 16(3):327 for correction of table 2 misprint.).

1989 "A Simultaneous Determination Model of Senate Elections," *Legislative Studies Quarterly,* 14(4): 567-601. Reprinted in *The Changing World of the U.S. Senate,* ed. John Hibbing. IGS Press.

1988 "Budget Reform as Strategic Legislative Action: An Exploration," *Journal of Politics,* 50(2): 292-321.

1987 "Does Structure Matter? The Effects of Structural Change on Spending Decisions in the House, 1871 to 1922," *American Journal of Political Science,* 31(3): 584-605. Reprinted in *The Congress of the United States, 1789-1989,* eds. Joel Silbey, et al. Carlson Publishing.

Articles in Law Reviews

2013 "Waiting to Vote," *Journal of Law and Politics* 28(4): 439–463.

2013 "Voter ID: Who Has Them? Who Shows Them? *Oklahoma Law Review* 66(4): 21–52.

2013 "Regional Differences in Racial Polarization in the 2012 Presidential Election: Implications for the Constitutionality of Section 5 of the Voting Rights Act," *Harvard Law Review Forum* 126: 205–220. (with Stephen Ansolabehere and Nathaniel Persily)

2010 "Losing Votes by Mail," in *Journal of Legislation and Public Policy* 13(3): 573-602.

2010 "Race, Region, and Vote Choice in the 2008 Election: Implications for the Future of the Voting Rights Act." (with Stephen Ansolabehere and Nathaniel Persily) *Harvard Law Review* 123(6): 1385–1436.

Other Publications

2013 "2012 Survey of the Performance of American Elections: Final Report"

2011 "Voting Technologies," *Annual Review of Political Science,* 14: 353–78.

2010 "Residual Voting in Florida," Pew Charitable Trusts (with Paul Gronke and James Hicks)

2010 "What Happened in Massachusetts," *Boston Review* March/April 2010 (with Stephen Ansolabehere).

2009 "Early- and Late-Adopters of Provisional Ballots," *Pew Report on Provisional Ballots,* August 2009.

2009 "Assessment of Voting Systems," *Election Law Journal*, forthcoming. [Review of R. Michael Alvarez and Thad Hall, *Electronic Elections: The Perils and Promise of Digital Democracy*]

2009 "Amazing Race: How Post-Racial Was Obama's Victory," *Boston Review* January/February 2009 (with Stephen Ansolabehere).

2008 "Election Fraud Fears: The Cure," *Los Angeles Times,* October 27, 2008.

2008 "Basic Principles of Data Collection," *Data for Democracy: Improving Elections through Metrics and Measurement*, Pew Charitable Trusts.

2008 "Roll Calls," *International Encyclopedia of the Social Sciences,* ed, William A. Darity, Jr., vol. 7, 2nd ed., pp. 276–277.

2005 "Truth in Numbers: Moral Values and the Gay-Marriage Backlash Did Not Help Bush," *Boston Review* February/March 2005 (with Stephen Ansolabehere).

2003 *Voting in Massachusetts.* Report by the Caltech/MIT Voting Technology Project.

1996 Review of *Ethics in Congress: From Individual to Institutional Corruption,* Dennis F. Thompson, *American Political Science Review,* 90(1): 206-207.

1994 Contributor to the *Encyclopedia of the United States Congress*, ed. Donald C. Bacon, et al. Simon and Schuster. Essays on the House Appropriations Committee and the 1921 Budget and Accounting Act.

1994 Contributor to the *Encyclopedia of the American Legislative System,* ed. Joel H. Silbey, et al. Scribner's. Essay on Congressional Appropriations Committees.

1991 Contributor to the *Encyclopedia of American Political Parties and Elections,* ed. L. Sandy Maisel. Garland Publishing Company. Articles on Henry Clay, Thomas P. O'Neill, Samuel J. Randall, Sam Rayburn, Thomas B. Reed, Champ Clark, Tony Coelho, George Norris, James P. Clarke, William Frye, Thomas Taggart, Norman Mack, Conservative Coalition, Democratic Study Group, Democratic Congressional Campaign Committees (House and Senate), and Republican Congressional Campaign Committees (House and Senate).

1989 Review of *Balanced Budgets and American Politics,* James D. Savage, *Congress and the Presidency,* 16(1): 77-79.

1986 Review of *Representation and Responsibility,* eds., Bruce Jennings and Daniel Callahan, *American Political Science Review,* 80(4): 1322-1323.

Court filings

2009 "Brief for Nathaniel Persily, Stephen Ansolabehere, and Charles Stewart III as *Amici Curae* on Behalf of Neither Party," in the case of Northwest Austin Municipal Utility District Number One *vs.* Eric H. Holder, Jr., in the Supreme Court of the United States.

2006 "Declaration of Charles Stewart III on Excess Undervotes Cast in Sarasota County, Florida for the 13th Congressional District Race. URL: http://moritzlaw.osu.edu/electionlaw/litigation/documents/declarationstewart.pdf

Unpublished manuscripts

2013 "Early Voting in Florida," (with Paul Gronke) paper presented at the annual meeting of the Midwest Political Science Association.

2012 "Partisanship and Voter Confidence, 2000–2012," (with Michael W. Sances) paper presented at the annual meeting of the American Political Science Association.

2010 "Voter Attitudes toward Poll Workers in the 2008 Election," (with Thad E. Hall). Under revise and resubmit at *Public Administration Review.*

2009 "Election Technology and the Voting Experience in 2008," paper presented at the annual meeting of the Midwest Political Science Association.

2009 "Committee Hierarchy and Assignments in the U.S. Congress: Testing Theories of Legislative Organization, 1789–1946" (with David Canon), paper presented at the Conference on Bicameralism, Duke University.

2006 "The Value of Committee Assignments in Congress since 1994" (with Keith Edwards), paper presented at the annual meeting of the Southern Political Science Association.

2003 "The Gag Rule, Congressional Politics, and the Growth of Anti-Slavery Popular Politics" (with Jeff Jenkins), paper presented at the annual meeting of the Midwest Political Science Association.

1998	“Committee Assignments as Side Payments: The Interplay of Leadership and Committee Development in the Era of Good Feelings,” (with Jeffery A. Jenkins), paper presented at the annual meeting of the Midwest Political Science Association.
1996	"Careerism and Career Ladders in the Early Days," (with Bill Bianco) paper presented at the annual meeting of the American Political Science Association.
1995	"Taking Care of Business: The Revolution of the House Committee system before the Civil War," (with David Canon) paper presented at the annual meeting of the American Political Science Association.
1994	"Ain't Misbehavin': Reflections on Two Centuries of Congressional Corruption," paper presented to the Government Department, Harvard University.
1990	"A Theory of Supreme Court Nominations," (with Peter Lemieux) paper presented at the Conference on Political Economy, National Bureau of Economic Research, Cambridge, Massachusetts, December.
1990	"Senate Confirmation of Supreme Court Nominations from Washington to Reagan," (with Peter Lemieux), Hoover Institution Working Paper Series, Domestic Studies Program, P-90-3, April.
1990	"Parties and the Deficit: Some Historical Evidence," (with James Alt) presented at the Workshop on Political Economics, National Bureau of Economic Research, Cambridge, Massachusetts, February.

LIST OF THESES SUPERVISED

Ph.D. Thesis: Primary Supervision: Completed
Bruce Bimber
Seong Ho Lim
Amy E. Black
Stephen Minicucci
Beth Rosenson
Kathleen H. Hicks
Suzanne Neill

Ph.D. Theses: Secondary Supervision: Completed
Lee Perlman
Rob Stowe
Jean Peretz

John Coleman
David Guston
Jeff Lewis
Sharon Weiner
Judy Layzer
Jocelyn Crowley
David Burbach
Marsha Simon
Rachel Cobb
David Konisky
Douglas Kriner (Harvard)
William LeBlanc
Brian D. Feinstein (Harvard)
Tony Hill
Zack Smith (Boston University, History)

PhD. Theses: Primary Supervision: In Progress
Krista Loose

Ph.D. Theses: Secondary Supervision: In Progress
Michele Margolis

S.M. Theses: Primary Supervision: Completed
Nancy Otis
Gregory Mayew
Nancy Cohen
Jay Youngclaus
Brooks Mendall
Keith Edwards

S.M. Theses: Secondary Supervision: Completed
Reid Lifset
Robert Snyder
Sarah Lawrence
Anders Hove
Samantha Green-Atchley
Raffaela Wakeman
Matthew Clifford

S.M. Thesis: Primary Supervision: In progress
Cory Hernandez

S.M. Theses: Secondary Supervision: In progress

S.B. Theses: Primary Supervision: Completed
Thomas Murphy

Christopher Crowley (Course 6, Computer Science)
Andrew Fish
Daniel Pugh
T. Michael Smith (Course 6, Computer Science)
Clifford Rothenberg
John Abbamondi
Karen Kaplan (joint with Course 14, Economics)
Andrei Saunders
Janice Yoo
Brooks Mendell
David Kessler (joint with Course 14, Economics)
J. Paul Kirby
Colin Page
Robert Fowler
Norman Brodesser
William LeBlanc
Sarah Anderson
Orion Smith
Andrew Montgomery (Course 6, Electrical Engineering and Computer Science)
Melanie Wong
Courtney Shiley
Kristie Tappan
David Tobias
Amanda Berry

S.B. Theses: Secondary Supervision: Completed
Michael Sununu
David Alcocer
Christine Coffey
Rebecca Berry
Alice Yao
Karl Erdmann
Miranda Priebe
Kaitlin E.M. Lewis
Tabitha Bonilla
Daniel Yelen
Kevin Clough

Exhibit 2. Procedures for the preparation of state-provided election data files

In this exhibit, I describe the procedures that were followed in the preparation of the state-provided election data files I used for the analysis in this report.[1] I first address a general set of problems of data preparation that presented themselves in the case of many of the data files, namely, that some of the computer records were "broken" or otherwise initially inaccessible to analysis in the condition in which they were received from the State Board of Elections (SBOE). Then I follow by discussing, in turn, (1) voter registration files, (2) voter history files, (3) absentee voter files, and (4) provisional voter files.

Fixing broken data records

It is my understanding that the data files I received from the SBOE through the Department of Justice are plain-text output files written by a database computer software system such as Oracle. Such systems store data internally in machine-readable formats that are unique to each system. When data are shared between systems, it is necessary to use some common data format. In situations like this, the common format is a plain-text version of the data, written as a "tab delimited" file.

While the use of such common formats is indispensable in projects in which multiple computer systems that are running different software must exchange data, it comes at a cost. The main cost here is that it is possible for stray non-printing characters to enter into the dataset when it is created on the original system. (These usually come from a set of "control characters," because they are not intended to be read, but are used to "control" the appearance of text on a screen or paper. A line feed is an example.) These characters only become manifest upon export of the data, when the subsequent attempt to import the data into another system causes problems.

Consider the following data table as an example. The first row lists the variable names that describe the information that should be found in the columns below. A three-line dataset with unbroken records might look like this:

id_no	first_name	last_name	zip_code	voter_status
0001	John	Smith	00001	A
9823	Mary	Jones	90001	A
5555	Chris	Abernathy	65003	I

A broken dataset might look like this:

[1] I was assisted in the preparation of the state-provided data files by Mr. Maxwell Palmer, a PhD candidate from the Harvard University Government Department.

id_no	first_name	last_name	zip_code	voter_status
0001	John	Smith	00001	A
9823	Mary			
Jones	90001	A		
5555	Chris	Abernathy	65003	I

In the above example, something has happened to the second row of data. A stray end-of-line character has been inserted after the first name “Mary”, forcing the last name to become associated with a new record, and for the last name now to be interpreted as an identification number, the ZIP code to be interpreted as a first name, and the voter status to be interpreted as a last name. The final line of data is unaffected.

I have regularly encountered broken records like this before when datasets that are maintained in one system are output for transfer to another system via a plain-text file format. In the specific case of the North Carolina files, an examination of the broken records in some of the raw data files discussed below revealed that a series of “control-J” characters had been inserted into the file, generally in free-text comment fields. (A control-J is a non-printing character that is usually interpreted by database programs as a line-feed internal to a single data element, such as a cell in a spreadsheet.) One of the files had extraneous control-I characters. Control-I is used to indicate a tab. Because the files I received were “tab-delimited” files, the presence of extra control-I characters within data fields caused some data fields for particular rows to be shifted to the right for that row.

Based on my experience, I assume that these stray control-J and control-I characters were inserted by data-entry operators, either inadvertently, or to better record information in the original database. Because most modern database and spreadsheet programs allow the presence of these characters in text fields, they would typically not present a problem within the original database program — it would only present a problem when the data were exported into plain text.

The presence of broken records presented a challenge to maintain the information contained in these records. There are two strategies that can be employed in the face of broken records. One is to discard broken records and accept some loss of information. (In the example above, for instance, the analyst might choose to skip over the second — broken — portion of the Mary Jones records altogether.) The other is to examine the file, remove the character is that causing the row to be broken, stich the two parts of the data record back together, and salvage the information contained in the record. For a small file, with few broken records, this can be done by hand. For a large file, or one with many broken records, it is necessary to automate the repair of the file.

I resorted to the latter strategy, repairing the files through automated processes. Where relevant in the analysis below, I report efforts to recover broken records, including the number of records affected.

North Carolina voter registration records — voter file

The *voter files* were prepared from the registration records so that I would have information about the race, ethnicity, and residence of voters and provisional ballot recipients.

The raw input files I used to create the voter files are the "snapshot files" listed in Table 1 of the main body of this report.

Each snapshot file presented slightly different challenges to prepare it for analysis. The following summarizes the steps taken to salvage information contained in broken records in the snapshot files from 2006, 2008, 2010, and 2012. I will refer to each file by year.

As a general matter, the computer program that prepared the data, first, examined the data fields of interest for evidence of erroneous information — for instance, a voter status variable that was recorded as "REP" (party). This initial examination allowed us to flag suspect rows for repair. Once the repairs were made, the program was run again, examining for further erroneous information. This process continued until no erroneous information was to be found.

2006 snapshot file

There are 8,298,682 records in the file.

The file was imported in three pieces: columns 2-6, columns 37-41, and column 48. These imports were used to collect *county_id* and *voter_reg_num*, which uniquely identify each voter, *status_cd*, which records voter status, *race_code*, *ethnic*_code, and *party_code*, for demographic information, and *registr_dt*, which records the date that the voter registered.

There was a single record in the 2006 file that was broken into two different rows in the file due to a carriage return character in a text field. This record is in rows 3,441,651 and 3,441,652 in the text file. To correct for this broken row, I imported all of the variables for these two rows, moved the broken variables in the second row into the correct variables in the first row, and then dropped the second row. *race_code* was found in *ncid*, *ethnic_code* in *voter_status_desc*, *party_cd* in *voter_status_reason_desc*, and *registr_dt* in *house_num*.

This process fixed the one broken row and restored this record with no missing necessary information.

2008 snapshot file

There are 9,671,883 records in the file.

This file was imported in the same way as the 2006 file. Unlike the 2006 file, there were no broken records, so no adjustments were necessary.

However, in 38 cases, the registration date was pushed 2-to-3 fields over. I corrected these cases by moving the information that was improperly recorded in other fields (the ones recording the voter's precinct and municipality) into the registration date field.

2010 snapshot file

There are 10,217,383 records in the file.

I imported this file in the same way as the 2006 file. There were no broken records, so no adjustments were necessary.

However, in 36 cases, the registration date was pushed 2-to-3 fields over. I corrected these cases by moving the information that was improperly recorded in other fields (the ones recording the voter's precinct and municipality) into the registration date field.

2012 snapshot file

There are 11,352,660 records in the file.

This file was imported in the same way as the 2006 file. There were no broken records, so no adjustments were necessary.

However, in 31 cases, the registration date was pushed 2-to-3 fields over. These cases were corrected by moving the information that was improperly recorded in other fields (the ones recording the voter's precinct and municipality) into the registration date field.

Verifying the state-provided voter files

I tested the accuracy of the voter files that were prepared by comparing statistics generated using them with registration statistics available on the SBOE ftp site.[2] The first test was a simple comparison of the number of registered voters (active and inactive)[3] in the snapshot files with the registration statistics files.

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[2] These are files voterstats11xx07xx2006.txt, voter_stats11xx04xx2008.txt, voterstats11xx2xx2010.txt, and voterstats11xx06xx012.txt. I also compared the results reported with a visual inspection of documentary reports available on the SBOE web site.

[3] The document entitled "Policies and Procedures for the Implementation of the National Voter Registration Act of 1993 and Article 7A, Chapter 163 of the North Carolina General Statutes" spells out procedures for assigning voters to inactive status (pp. X-2–X-3) and assigning them to "removed" status, that is, no longer a registered voter (p. X-6). This document states that "[t]he term "inactive voter" describes an *administrative status.* An inactive voter remains on the voter registration rolls and is counted as a registered voter." (p. X-2, emphasis added) This document may be downloaded from the SBOE ftp site at the following URL: ftp://alt.ncsbe.gov/sboe/Policy%20and%20Procedures%20for%20the%20Administration%20of%20Voter%20Registration/Admin%20of%20Voter%20Registration%20Manual-Final.doc. The document "Maintaining the Voter Registration Database in North Carolina" also describes the administrative steps taken to move voters from active to inactive status. It is also available for download from the SBOE ftp site at the following URL:

The following table reports the results of these comparisons. The snapshot files for the two most recent federal elections are very close to the statistics provided in the downloaded ftp files. For the two earlier state-provided files, the voter snapshots actually contain more records than are reflected in the state reports. While I have no ready explanation for this discrepancy, the fact that the snapshot files contain more registered voters suggests that when data from these files are matched with other relevant files, the number of missing matches will be low.

Comparison of registration records in snapshot files with reports from downloaded ftp files

Year	State-provided snapshot files	Downloaded ftp files	Difference	Pct. diff.
2006	5,566,249	5,497,879	-68,370	-1.24%
2008	6,264,730	6,080,103	-184,627	-3.04%
2010	6,200,723	6,207,063	6,340	0.10%
2012	6,649,208	6,655,302	6,094	0.09%

I next compared data in the snapshot files with statistics in electronic format that were available on the ftp site, at the county level. These comparisons are reflected in Exhibits 3–6. Here, we see that not only do the aggregate statistics for the comparisons match at the state level for 2010 and 2012, they match closely on a county-by-county basis, too. (All deviations are less than 1.0%, and most are less than 0.1%.) For 2006 and 2008, the large deviations at the state level are accompanied by a range of deviations at the county level. In almost every case, there are more records in the state-provided snapshot files than are reflected in the downloaded ftp files.

Finally, I compared the records contained in each of the snapshot files, to verify that each chronologically subsequent file was cumulative, that is, that it contained all the records of the preceding file, in addition to records about new registrations. To conduct this test, I matched each snapshot file with all the others, using the *county_id* and *voter_reg_num* variables to link the files. (A combination of *county_id* and *voter_reg_num* should uniquely identify each registered voter.) Of the 8,298,681 records in the 2006 snapshot file, all were in the 2008 file, one was dropped in the 2010 file (a record with a implausible *voter_reg_num* value), and one more record was dropped in the 2012 file. No other records were revealed to have been dropped in any of the other comparisons. The files are in fact cumulative.

As a consequence, I decided to use the 2012 snapshot file as a general voter file for the remaining analysis. This relies on the core demographic information in the snapshot files not changing, particularly the race categorization. To test this assumption, I used the county ID + voter registration number system to merge the two files most distant in time, the 2006 and 2012 snapshot files, and compared how individuals were classified by race in both files. Of the 8,298,679 records matched across both files, the racial designations were the same in 8,266,681 (99.61%), meaning that the racial information changed in only 0.39% of the records. While

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ftp://www.app2.sboe.state nc.us/Requests/Materials/LM_Maintaining%20the%20Voter%20Registration%20Database%20in%20North%20Carolina_2013.pdf. Finally, the following Frequently Asked Questions (FAQ) page on the SBOE Web site provides information to voters about list maintenance procedures and the procedures inactive voters need to follow when they come to the polls to vote: https://www ncsbe.gov/ncsbe/Voter-Information/VR-FAQ.

there is some small shifting in racial categorizations on the margins in the various snapshot files, they are barely perceptible given the size of the files. Therefore, I relied on the 2012 snapshot file to obtain demographic information about individuals in the other files I analyzed.

Voter files not utilized in this report

In relying on the 2012 snapshot file as a voter file, I decided not to use two files sent to me by the SBOE, labeled as voter registration files dated March 26, 2013 and January 27, 2014.[4] I did not rely on these files because they are removed in time — by at least several months in the first case, and by at least a year in the second case — from the elections being analyzed in this report.

I investigated the number of registration records in these two files that might be missing from the 2012 snapshot file. (The most likely case of a missing record would be a voter who was inadvertently left off the snapshot files. This voter would cast a provisional ballot as a consequence, and then have the registration record added immediately after the election as a consequence.) I did this by merging the voter history and 2012 snapshot files using the county ID + registration number method. The result was that 9,986 of the 4,545,180 records in the 2012 voter history file (0.2%) were not in the snapshot file. All these records were in the January 27, 2014 registration file.

Because this report focuses on the racial composition of same-day registrants, early voters, and provisional voters, it is particularly important to know the racial composition of the 9,986 voters who are in the January 27, 2014 voter registration file, but not in the 2012 snapshot file. Overall, the 9,986 additional registrants are more likely to be African American (37.1%) than the registered voters in the snapshot file (22.5%). They are also more likely to be Hispanic/Latino (4.1%) than the composition of the snapshot file (1.7%). However, the absolute number of voters involved is so small, that these additional records only affect percentage calculations of the composition of North Carolina to the second decimal place.

The following table illustrates this. The first two columns report the racial distribution of registered voters in the 2012 snapshot file, expressed both as numbers and as a percentage of the whole. The next two columns report the racial distribution of the 9,986 additional registrants who do not appear in the snapshot file, both numbers and percentage distribution. The final two columns show the effect of adding these 9,986 voters to the 2012 snapshot.

[4] The full file names are "voter_reg_20130326 – HIGHLY CONFIDENTIAL.txt" and "voter_reg_20140127 – HIGHLY CONFIDENTIAL.txt."

Racial distribution of 2012 snapshot file, along with registrants in the January 27, 2014 voter registration file, but not in the snapshot file						
	2012 snapshot file		In 1/27/2014 reg. file, but not snapshot file		Combination of two datasets	
Race	Number	Pct.	Number	Pct.	Number	Pct.
Asian	59,678	0.90%	123	1.23%	59,801	0.90%
Black	1,492,839	22.45%	3,608	36.13%	1,496,447	22.47%
Indian/Nat. Amer.	53,485	0.80%	91	0.91%	53,576	0.80%
Mixed	37,533	0.56%	132	1.32%	37,665	0.57%
Other	128,778	1.94%	257	2.57%	129,035	1.94%
Unknown	148,042	2.23%	1,280	12.82%	149,322	2.24%
White	4,728,853	71.12%	4,495	45.01%	4,733,348	71.08%
Total	6,649,208	100.00%	9,986	99.99%[a]	6659194	100.00%

[a]Percentages do not sum to 100.0% because of rounding.

These two voter registration files have so many more broken records than the others that were prepared for analysis, that undertaking to repair them at this time did not seem appropriate, given the proportionally small amount of information that would be added to the snapshot file

North Carolina voter registration records — voter history

A *voter history* file was prepared so that I would have information about who voted in the elections I examined, and the modes they used to vote. [5]

The file that was used to create the voter history file was named voter_history_20140127.txt and provided by the SBOE through the DOJ.

Using Stata, the first five columns of this data file were imported for the voter history analysis. The variables used were: *election_id*, *county_id*, *voter_reg_num*, *voting_method*, and *party_cd*.

[5] Throughout this report, the mode voters used to cast a ballot is determined using the variable *voting_method* in the state-supplied voter history file. The following is the mapping of codes in *voting_method* to the voting methods reflected in the analysis of this report.

Voting modes in this report	Values of *voting_method*
Election Day	• CURBSIDE • IN-PERSON • LEGACY • Legacy • PROV • TRANSFER
Early voting	• ABS-1STOP
Absentee	• ABS-MAIL • ABSENTEE

There are 14 cases, out of 22,570,108 cases in the state-supplied voter history file that are excluded, corresponding with the following codes in the *voting_method* variable: ABS-NV, ELIG-NV.

There are 57,195,793 records in this file.

There appeared to be no issues with broken records or misaligned data fields.

I used the lookup file "lk_vh_election.txt" to identify the election date for each *election_id*, *county_id* pair in the voter history file. All of the elections were deleted except the November general elections in 2000, 2002, 2004, 2006, 2008, 2010, and 2012. After removing the unused elections, the file contained 22,570,108 voter history records.

Each voter history record uniquely identifies the voting activity of a single voter in a single election, identified using *election_id*, *county_id*, and *voter_reg_num*. The last two of these variables are used to uniquely identify voters in the voter snapshot or voter registration files.

I tested the accuracy of the voter history file by comparing statistics generated using it with turnout statistics available on downloaded ftp files.[6] I also compared the statistics generated using the state-provided voter history file with the individual-level voter history file available for download from the SBOE web site.[7]

The table that follows summarizes that comparison. The state-provided file reflects a slightly higher turnout level than the two downloaded ftp files. All these differences are a fraction of 1% on aggregate.

Comparison of voter turnout reflected in three sources of voter history information

	Source of turnout data			Raw difference		Percentage differences	
Year	State-provided voter history file	State report via ftp site	Voter history file on ftp site	State report via ftp site	Voter history file on ftp site	State report via ftp site	Voter history file on ftp site
2006	2,025,942	2,020,105	2,020,587	-5,837	-5,355	-0.29%	-0.26%
2008	4,363,494	4,329,528	4,347,942	-33,966	-15,552	-0.78%	-0.36%
2010	2,703,967	2,687,298	2,699,145	-16,669	-4,822	-0.62%	-0.18%
2012	4,545,180	4,539,171	4,540,846	-6,009	-4,334	-0.13%	-0.10%

I next compared the same turnout figures at the county level. The results are contained in Exhibits 7–10, which are consistent with the statewide comparison described in the previous paragraph. While there are only a few deviations between the state-provided file and the ftp files that are larger than 1% at the county level, in almost every case, the number of voters reflected in the state-provide file is less than what is reflected in the downloaded ftp files, although the differences are generally only a fraction of 1%.

[6] These are files historystats11xx07xx2006.txt, historystats11xx04xx2008.txt, historystats11xx02xx2010.txt, and historystats11xx06xx2012.txt. I also compared the results reported with a visual inspection of documentary reports available on the SBOE web site.

[7] These are 100 files named ncvhis*.txt (where the * is replaced with the county identification number) in the ftp site, with a file system date of 11/16/2013.

North Carolina voter absentee voters

The *absentee voter file* was prepared so that I would have information about voters who cast a one-stop absentee ballot (early vote).

The absentee voter file was prepared from the file named "abs_corr_20140127.txt." There are 8,277,947 rows of data in this file.

Columns 2 through 31 were imported using Stata.

As in the provisional file there are broken rows in this file due to new-line characters in text fields. There are 2,630 records that are broken into multiple rows in this file, and 3,019 rows that consist of data properly belonging to preceding records. Consequently, these rows had to be repaired. This was done by

(1) importing the complete file into Stata without breaking the rows into separate variables,
(2) appending the broken pieces of each row to the above record to which it belonged, and
(3) saving this file as a new text file, and then importing it into Stata again, this time breaking it into separate variables.

After this repair, there are 8,274,928 absentee records in the file.

The lookup file "lk_vh_election.txt" was used to identify the election date for each *election_id*, *county_id* pair in the file. All of the elections were deleted except the November general elections in 2000, 2002, 2004, 2006, 2008, 2010, and 2012. After removing the unused elections, the file contains 6,522,564 absentee ballot records.

The primary variables in this file that are used are *county_id*, *election_id*, and *voter_reg_num*, which uniquely identify each absentee ballot record, *request_type_lbl*, which identifies the type of absentee ballot, *return_status_lbl*, which identifies if the ballot was properly returned and counted, and *return_dt*, which identifies the date the ballot was returned, and in the case of one-stop voting, the date of voting.

I tested the accuracy of the absentee voter file by comparing the number of absentee ballots contained in it to the number of absentee voters in the voter history file. (Absentee voters in this case included civilian, military, one-stop, and overseas voters.) The results are reported in the following table. On aggregate, the totals in the two files are within a fraction of 1% for the elections of 2008, 2010, and 2012. The absentee voter file contains slightly fewer records than are reflected in the voter history file in each of these years.

Comparison of number of absentee voters in absentee voter file with number of absentee voters in voter history file.				
Year	State-provided absentee voter file	State-provided voter history file	Raw difference	Pct. difference
2006	7,793	422,350	414,557	5,319.6%
2008	2,640,260	2,651,321	11,061	0.4%
2010	961,115	962,815	1,700	0.2%
2012	2,774,594	2,777,320	2,726	0.1%

The year 2006 is a different matter. It is obvious that the absentee correspondence file contains information about only a tiny fraction of absentee voters in that year. County-by-county analysis reveals that absentee ballots are only reflected in this file for seven of North Carolina's 100 counties.

As a consequence, information about absentee voters in 2006 was obtained from the SBOE ftp site, from the file absentee11xx07xx2006.txt. Below, I describe separately the preparation of that file.

I performed the same comparison reflected in the previous table on a county-by-county basis for 2008, 2010, and 2012. The results are reported in Exhibits 12–14. With only a few exceptions, all the deviations are within a fraction of 1%. After 2008, the deviations tend to be less than 0.1%

2006 absentee ballot records

As mentioned above, the absentee correspondence file contained very few records about absentee voters in 2006. Therefore, I relied on the file named absentee11xx07xx2006.txt, available from the SBOE ftp site, to obtain information about absentee ballots cast in that year. The data in this file were examined for anomalies, and none were found.

There were a total of 406,497 records in the 2006 absentee ballot file, compared to 422,350 absentee voters reflected in the voter history file. This is a deviation of 3.9%

Upon examination of the county-by-county comparisons, there are two counties with notable discrepancies between the information in the absentee correspondence file and the voter history. (See Exhibit 11 for the county-by-county numbers.) The first is Alleghany County, which has 1,653 ballots accounted for in the absentee correspondence file but only 183 absentee voters in the voter history file. The second is Guilford, , which records 1,696 ballots in the absentee correspondence file but 18,231 absentee voters in the voter history file. Without Guilford, the discrepancy goes down to a mere 682 ballots in the remaining counties, or 0.2%.

The absence of the lion's share of absentee ballots for Guilford County in 2006 should make us proceed cautiously in drawing conclusions about absentee voting in 2006.

North Carolina provisional voters

A *provisional voter* file was prepared so that I would have information about individuals to whom provisional ballots were issued, and the reasons they were issued.

This file was prepared using input from the data file "provisional_voter_2014-127 –HIGHLY CONFIDENTIAL.txt". There are 308,747 rows of data in this file.

As in the absentee file and the 2006 voter snapshot, there are broken rows in this file due to new-line characters in text fields. There are 2,345 records that are broken into multiple rows in this file. Unlike the absentee case, there are variables after the broken text fields needed for our analysis. Consequently, these rows had to be repaired. This was done by

(1) importing the complete file into Stata without breaking the rows into separate variables,
(2) appending the broken pieces of each row to the above record to which it belonged, and
(3) saving this file as a new text file, and then importing it into Stata again, this time breaking it into separate variables.

After this repair, there are 305,921 provisional ballot records in the file.

After this repair, four records had some variables at the end shifted over by one column due to an extra tab character in a text field. This error was repaired by shifting the necessary variables to the correct fields.

The lookup file "lk_vh_election.txt" was used to identify the election date for each *election_id*, *county_id* pair in the file. All of the elections were deleted, except the November general elections in 2000, 2002, 2004, 2006, 2008, 2010, and 2012. After removing the unused elections, the file contains 207,144 provisional ballot records.

I tested the accuracy of the provisional ballot file by comparing the number of counted provisional ballots in the file with the number of voters recorded in the voter history file as having cast a provisional ballot. The table that follows reports the results of that comparison at the state level for the 2006, 2008, 2010, and 2012 general elections. As a general matter, the two provisional ballot counts are very close in the aggregate.

Comparison of number of provisional voters in state-provided provisional voter file with number of provisional voters in state-provided voter history file.				
Year	State-provided provisional voter file	State-provided voter history file	Raw difference	Pct. difference
2006	16,805	16,737	-68	-0.40%
2008	26,522	26,627	105	0.40%
2010	15,694	15,751	57	0.36%
2012	23,362	23,289	-73	-0.31%

I also carried this comparison to the county level, as I did with the previous data files. The county comparisons are reported in Exhibits 15–18. These comparisons also reveal that for the most part the records in the provisional voter file are consistent with voter history files at the county level. However, because the number of provisional voters is so small, especially when they are allocated to the 100 counties, it is possible for small numerical deviations to yield relatively large percentage differences. For instance, if the provisional voter file lists 10 provisional voters in a county, and the voter history lists 9, the difference is either 10% or 11%, depending on which figure is the denominator. Mostly, though, the deviations are such that there are more provisional voters reflected in the provisional voter file than in the voter history file, which gives me confidence that the provisional voter file is a comprehensive list of provisional voters.

Exhibit 3. Comparison of voters in state-provided snapshot file with voters in downloaded ftp "voterstats" file at the county level, 2006

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Alamance	81,106	78,724	-2,382	-2.94%
Alexander	24,477	24,570	93	0.38%
Alleghany	6,687	6,561	-126	-1.88%
Anson	15,028	14,695	-333	-2.22%
Ashe	19,811	19,920	109	0.55%
Avery	12,011	12,051	40	0.33%
Beaufort	29,331	29,107	-224	-0.76%
Bertie	13,646	13,346	-300	-2.20%
Bladen	21,073	21,140	67	0.32%
Brunswick	63,524	63,554	30	0.05%
Buncombe	159,635	161,685	2,050	1.28%
Burke	54,986	53,216	-1,770	-3.22%
Cabarrus	93,960	93,287	-673	-0.72%
Caldwell	49,603	49,058	-545	-1.10%
Camden	6,395	6,389	-6	-0.09%
Carteret	44,331	43,727	-604	-1.36%
Caswell	14,678	13,986	-692	-4.71%
Catawba	96,849	95,174	-1,675	-1.73%
Chatham	37,652	36,866	-786	-2.09%
Cherokee	20,401	19,114	-1,287	-6.31%
Chowan	9,338	9,107	-231	-2.47%
Clay	7,817	7,768	-49	-0.63%
Cleveland	58,119	54,705	-3,414	-5.87%
Columbus	36,294	36,446	152	0.42%
Craven	62,454	60,770	-1,684	-2.70%
Cumberland	177,640	179,479	1,839	1.04%
Currituck	15,023	14,934	-89	-0.59%
Dare	24,228	24,466	238	0.98%
Davidson	94,270	92,401	-1,869	-1.98%
Davie	23,598	23,508	-90	-0.38%
Duplin	26,075	26,131	56	0.21%
Durham	161,729	158,609	-3,120	-1.93%
Edgecombe	35,489	34,436	-1,053	-2.97%
Forsyth	188,700	189,004	304	0.16%
Franklin	31,509	30,757	-752	-2.39%
Gaston	117,546	111,446	-6,100	-5.19%
Gates	7,291	7,124	-167	-2.29%
Graham	6,424	6,457	33	0.51%
Granville	28,531	28,153	-378	-1.32%
Greene	10,015	9,835	-180	-1.80%
Guilford	306,029	309,370	3,341	1.09%
Halifax	33,421	32,834	-587	-1.76%
Harnett	56,362	52,900	-3,462	-6.14%
Haywood	39,868	39,339	-529	-1.33%
Henderson	71,213	70,026	-1,187	-1.67%
Hertford	13,984	13,282	-702	-5.02%
Hoke	22,057	20,792	-1,265	-5.74%
Hyde	3,591	3,484	-107	-2.98%
Iredell	87,495	87,291	-204	-0.23%
Jackson	24,626	24,724	98	0.40%
Johnston	86,977	88,089	1,112	1.28%
Jones	6,800	6,639	-161	-2.37%
Lee	29,333	29,002	-331	-1.13%
Lenoir	36,228	34,966	-1,262	-3.48%
Lincoln	44,569	44,095	-474	-1.06%
Macon	24,190	23,821	-369	-1.53%

Exhibits: 35

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Madison	15,315	15,406	91	0.59%
Martin	17,054	16,945	-109	-0.64%
McDowell	26,851	27,021	170	0.63%
Mecklenburg	521,497	528,073	6,576	1.26%
Mitchell	11,847	11,461	-386	-3.26%
Montgomery	15,966	15,423	-543	-3.40%
Moore	55,503	54,461	-1,042	-1.88%
Nash	58,393	57,572	-821	-1.41%
New Hanover	128,067	126,417	-1,650	-1.29%
Northampton	13,648	13,622	-26	-0.19%
Onslow	75,114	71,346	-3,768	-5.02%
Orange	91,140	89,730	-1,410	-1.55%
Pamlico	9,117	9,001	-116	-1.27%
Pasquotank	25,073	24,196	-877	-3.50%
Pender	29,634	29,317	-317	-1.07%
Perquimans	8,634	8,171	-463	-5.36%
Person	22,007	21,972	-35	-0.16%
Pitt	95,513	87,637	-7,876	-8.25%
Po k	13,828	13,980	152	1.10%
Randolph	79,549	79,973	424	0.53%
Richmond	30,719	27,050	-3,669	-11.94%
Robeson	75,382	62,398	-12,984	-17.22%
Rockingham	55,761	56,004	243	0.44%
Rowan	85,547	86,234	687	0.80%
Rutherford	40,352	39,075	-1,277	-3.16%
Sampson	34,284	33,797	-487	-1.42%
Scotland	21,135	20,519	-616	-2.91%
Stanly	36,617	36,019	-598	-1.63%
Stokes	28,800	28,051	-749	-2.60%
Surry	42,657	42,610	-47	-0.11%
Swain	10,387	9,402	-985	-9.48%
Transylvania	22,253	22,468	215	0.97%
Tyrrell	2,474	2,480	6	0.24%
Union	100,596	100,465	-131	-0.13%
Vance	25,645	25,886	241	0.94%
Wake	513,765	517,435	3,670	0.71%
Warren	14,002	13,356	-646	-4.61%
Washington	8,679	8,715	36	0.41%
Watauga	39,895	37,698	-2,197	-5.51%
Wayne	63,692	60,053	-3,639	-5.71%
Wilkes	40,484	39,924	-560	-1.38%
Wilson	49,274	47,872	-1,402	-2.85%
Yadkin	22,404	22,518	114	0.51%
Yancey	13,678	13,766	88	0.64%

Exhibit 4. Comparison of voters in state-provided snapshot file with voters in downloaded ftp "voterstats" file at the county level, 2008

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Alamance	90,196	89,392	-804	-0.89%
Alexander	24,380	23,557	-823	-3.38%
Alleghany	7,274	7,038	-236	-3.24%
Anson	16,323	16,364	41	0.25%
Ashe	20,423	20,318	-105	-0.51%
Avery	12,624	11,354	-1,270	-10.06%
Beaufort	32,135	30,805	-1,330	-4.14%
Bertie	14,388	13,741	-647	-4.50%
Bladen	22,273	22,028	-245	-1.10%
Brunswick	75,827	75,186	-641	-0.85%
Buncombe	175,359	174,380	-979	-0.56%
Burke	57,088	55,405	-1,683	-2.95%
Cabarrus	109,599	105,113	-4,486	-4.09%
Caldwell	53,660	51,294	-2,366	-4.41%
Camden	7,168	6,896	-272	-3.79%
Carteret	47,962	47,297	-665	-1.39%
Caswell	15,405	14,907	-498	-3.23%
Catawba	104,521	100,198	-4,323	-4.14%
Chatham	42,564	40,607	-1,957	-4.60%
Cherokee	20,798	20,011	-787	-3.78%
Chowan	10,550	10,433	-117	-1.11%
Clay	8,489	8,295	-194	-2.29%
Cleveland	61,517	60,738	-779	-1.27%
Columbus	38,808	38,451	-357	-0.92%
Craven	68,185	67,911	-274	-0.40%
Cumberland	210,796	187,905	-22,891	-10.86%
Currituck	16,516	15,487	-1,029	-6.23%
Dare	27,040	26,812	-228	-0.84%
Davidson	101,326	98,781	-2,545	-2.51%
Davie	26,791	25,926	-865	-3.23%
Duplin	28,765	28,659	-106	-0.37%
Durham	193,306	180,143	-13,163	-6.81%
Edgecombe	38,885	36,824	-2,061	-5.30%
Forsyth	222,147	222,101	-46	-0.02%
Franklin	36,285	35,985	-300	-0.83%
Gaston	128,003	127,310	-693	-0.54%
Gates	8,118	8,085	-33	-0.41%
Graham	6,588	6,561	-27	-0.41%
Granville	33,674	33,395	-279	-0.83%
Greene	10,982	10,686	-296	-2.70%
Guilford	355,208	352,802	-2,406	-0.68%
Halifax	37,579	37,098	-481	-1.28%
Harnett	62,829	58,472	-4,357	-6.93%
Haywood	42,589	40,712	-1,877	-4.41%
Henderson	77,063	73,372	-3,691	-4.79%
Hertford	15,396	15,161	-235	-1.53%
Hoke	25,290	25,349	59	0.23%
Hyde	3,700	3,633	-67	-1.81%
Iredell	101,703	97,614	-4,089	-4.02%
Jackson	27,423	26,053	-1,370	-5.00%
Johnston	101,224	94,965	-6,259	-6.18%
Jones	7,269	7,068	-201	-2.77%
Lee	32,861	31,721	-1,140	-3.47%
Lenoir	38,111	37,847	-264	-0.69%
Lincoln	49,879	48,235	-1,644	-3.30%
Macon	25,279	25,073	-206	-0.81%

Exhibits: 37

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Madison	16,533	16,341	-192	-1.16%
Martin	18,222	18,042	-180	-0.99%
McDowell	29,507	29,280	-227	-0.77%
Mecklenburg	628,068	627,022	-1,046	-0.17%
Mitchell	11,863	11,413	-450	-3.79%
Montgomery	16,865	15,641	-1,224	-7.26%
Moore	60,369	58,936	-1,433	-2.37%
Nash	64,752	64,550	-202	-0.31%
New Hanover	146,450	144,456	-1,994	-1.36%
Northampton	15,266	14,664	-602	-3.94%
Onslow	86,500	81,512	-4,988	-5.77%
Orange	105,535	98,263	-7,272	-6.89%
Pamlico	9,756	9,704	-52	-0.53%
Pasquotank	28,345	26,675	-1,670	-5.89%
Pender	33,805	33,734	-71	-0.21%
Perquimans	9,397	9,063	-334	-3.55%
Person	25,039	24,294	-745	-2.98%
Pitt	107,463	100,620	-6,843	-6.37%
Po k	15,119	14,628	-491	-3.25%
Randolph	85,703	85,033	-670	-0.78%
Richmond	29,974	29,773	-201	-0.67%
Robeson	71,580	67,876	-3,704	-5.17%
Rockingham	59,967	59,439	-528	-0.88%
Rowan	90,395	88,525	-1,870	-2.07%
Rutherford	42,871	41,341	-1,530	-3.57%
Sampson	36,999	36,889	-110	-0.30%
Scotland	23,079	21,861	-1,218	-5.28%
Stanly	39,069	37,914	-1,155	-2.96%
Stokes	30,673	30,424	-249	-0.81%
Surry	45,872	45,565	-307	-0.67%
Swain	9,914	9,382	-532	-5.37%
Transylvania	23,549	23,460	-89	-0.38%
Tyrrell	2,672	2,524	-148	-5.54%
Union	120,557	116,779	-3,778	-3.13%
Vance	29,747	28,344	-1,403	-4.72%
Wake	593,045	562,734	-30,311	-5.11%
Warren	14,637	14,003	-634	-4.33%
Washington	9,074	8,917	-157	-1.73%
Watauga	43,467	40,120	-3,347	-7.70%
Wayne	69,525	66,518	-3,007	-4.33%
Wilkes	42,252	42,033	-219	-0.52%
Wilson	53,102	52,608	-494	-0.93%
Yadkin	23,535	23,303	-232	-0.99%
Yancey	14,477	14,346	-131	-0.90%

Exhibit 5. Comparison of voters in state-provided snapshot file with voters in downloaded ftp "voterstats" file at the county level, 2010

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Alamance	90,100	90,224	124	0.14%
Alexander	24,042	24,056	14	0.06%
Alleghany	7,327	7,327	0	0.00%
Anson	16,611	16,615	4	0.02%
Ashe	20,724	20,723	-1	0.00%
Avery	11,698	11,699	1	0.01%
Beaufort	31,884	31,911	27	0.08%
Bertie	14,280	14,287	7	0.05%
Bladen	22,494	22,506	12	0.05%
Brunswick	77,612	77,675	63	0.08%
Buncombe	176,629	176,755	126	0.07%
Burke	57,412	57,435	23	0.04%
Cabarrus	110,129	110,207	78	0.07%
Caldwell	53,042	53,066	24	0.05%
Camden	7,347	7,350	3	0.04%
Carteret	47,854	47,941	87	0.18%
Caswell	15,297	15,307	10	0.07%
Catawba	103,001	103,025	24	0.02%
Chatham	42,746	42,782	36	0.08%
Cherokee	21,181	21,191	10	0.05%
Chowan	10,592	10,601	9	0.08%
Clay	8,866	8,871	5	0.06%
Cleveland	61,473	61,532	59	0.10%
Columbus	36,955	36,955	0	0.00%
Craven	67,491	67,646	155	0.23%
Cumberland	196,629	197,536	907	0.46%
Currituck	16,619	16,642	23	0.14%
Dare	26,792	26,793	1	0.00%
Davidson	102,110	102,210	100	0.10%
Davie	26,856	26,867	11	0.04%
Duplin	28,417	28,452	35	0.12%
Durham	183,715	183,966	251	0.14%
Edgecombe	37,665	37,699	34	0.09%
Forsyth	227,125	227,291	166	0.07%
Franklin	37,243	37,261	18	0.05%
Gaston	128,555	128,648	93	0.07%
Gates	8,198	8,198	0	0.00%
Graham	6,558	6,558	0	0.00%
Granville	34,081	34,102	21	0.06%
Greene	11,018	11,033	15	0.14%
Guilford	350,269	350,483	214	0.06%
Halifax	36,648	36,666	18	0.05%
Harnett	63,128	63,265	137	0.22%
Haywood	42,187	42,212	25	0.06%
Henderson	76,505	76,562	57	0.07%
Hertford	14,945	14,974	29	0.19%
Hoke	26,515	26,677	162	0.61%
Hyde	3,631	3,631	0	0.00%
Iredell	102,884	102,959	75	0.07%
Jackson	26,968	26,995	27	0.10%
Johnston	101,738	101,768	30	0.03%
Jones	7,431	7,433	2	0.03%
Lee	32,778	32,813	35	0.11%
Lenoir	37,830	37,858	28	0.07%
Lincoln	50,222	50,237	15	0.03%
Macon	24,656	24,665	9	0.04%

Exhibits: 39

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Madison	16,210	16,212	2	0.01%
Martin	17,891	17,899	8	0.04%
McDowell	28,009	28,035	26	0.09%
Mecklenburg	603,271	603,671	400	0.07%
Mitchell	11,664	11,671	7	0.06%
Montgomery	16,240	16,259	19	0.12%
Moore	60,597	60,676	79	0.13%
Nash	67,077	67,088	11	0.02%
New Hanover	146,687	146,817	130	0.09%
Northampton	14,935	14,935	0	0.00%
Onslow	87,840	88,451	611	0.70%
Orange	102,428	102,639	211	0.21%
Pamlico	9,243	9,254	11	0.12%
Pasquotank	28,086	28,120	34	0.12%
Pender	34,746	34,774	28	0.08%
Perquimans	9,564	9,573	9	0.09%
Person	24,953	24,992	39	0.16%
Pitt	104,242	104,305	63	0.06%
Po k	14,934	14,934	0	0.00%
Randolph	86,791	86,840	49	0.06%
Richmond	30,323	30,344	21	0.07%
Robeson	69,936	69,968	32	0.05%
Rockingham	58,435	58,480	45	0.08%
Rowan	90,519	90,579	60	0.07%
Rutherford	42,904	42,927	23	0.05%
Sampson	36,811	36,864	53	0.14%
Scotland	22,600	22,602	2	0.01%
Stanly	38,930	38,950	20	0.05%
Stokes	30,376	30,399	23	0.08%
Surry	43,885	43,908	23	0.05%
Swain	9,699	9,699	0	0.00%
Transylvania	23,549	23,566	17	0.07%
Tyrrell	2,663	2,664	1	0.04%
Union	124,278	124,342	64	0.05%
Vance	29,381	29,402	21	0.07%
Wake	586,187	586,567	380	0.06%
Warren	13,450	13,552	102	0.76%
Washington	9,069	9,098	29	0.32%
Watauga	41,683	41,705	22	0.05%
Wayne	70,132	70,292	160	0.23%
Wilkes	41,895	41,923	28	0.07%
Wilson	53,314	53,327	13	0.02%
Yadkin	23,518	23,540	22	0.09%
Yancey	15,075	15,079	4	0.03%

Exhibit 6. Comparison of voters in state-provided snapshot file with voters in downloaded ftp "voterstats" file at the county level, 2012

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Alamance	96,813	96,893	80	0.08%
Alexander	24,400	24,412	12	0.05%
Alleghany	7,395	7,398	3	0.04%
Anson	17,346	17,350	4	0.02%
Ashe	19,078	19,085	7	0.04%
Avery	12,007	12,012	5	0.04%
Beaufort	33,095	33,119	24	0.07%
Bertie	14,828	14,831	3	0.02%
Bladen	23,048	23,063	15	0.07%
Brunswick	83,190	83,260	70	0.08%
Buncombe	187,290	187,424	134	0.07%
Burke	58,800	58,826	26	0.04%
Cabarrus	119,319	119,429	110	0.09%
Caldwell	54,471	54,476	5	0.01%
Camden	7,516	7,519	3	0.04%
Carteret	50,962	51,030	68	0.13%
Caswell	16,017	16,025	8	0.05%
Catawba	104,592	104,613	21	0.02%
Chatham	46,650	46,692	42	0.09%
Cherokee	22,155	22,164	9	0.04%
Chowan	10,805	10,813	8	0.07%
Clay	9,089	9,093	4	0.04%
Cleveland	63,561	63,628	67	0.11%
Columbus	38,019	38,023	4	0.01%
Craven	71,942	72,027	85	0.12%
Cumberland	215,523	216,659	1,136	0.53%
Currituck	17,758	17,773	15	0.08%
Dare	28,279	28,287	8	0.03%
Davidson	105,401	105,452	51	0.05%
Davie	28,363	28,374	11	0.04%
Duplin	30,032	30,053	21	0.07%
Durham	212,669	212,882	213	0.10%
Edgecombe	39,903	39,919	16	0.04%
Forsyth	247,033	247,229	196	0.08%
Franklin	40,276	40,292	16	0.04%
Gaston	136,214	136,295	81	0.06%
Gates	8,587	8,592	5	0.06%
Graham	6,646	6,647	1	0.02%
Granville	36,769	36,812	43	0.12%
Greene	11,477	11,485	8	0.07%
Guilford	362,464	362,704	240	0.07%
Halifax	38,169	38,176	7	0.02%
Harnett	68,558	68,723	165	0.24%
Haywood	43,173	43,197	24	0.06%
Henderson	79,104	79,163	59	0.07%
Hertford	15,352	15,370	18	0.12%
Hoke	29,867	29,964	97	0.32%
Hyde	3,680	3,680	0	0.00%
Iredell	110,631	110,700	69	0.06%
Jackson	28,408	28,439	31	0.11%
Johnston	107,959	108,028	69	0.06%
Jones	7,545	7,551	6	0.08%
Lee	34,896	34,927	31	0.09%
Lenoir	40,127	40,152	25	0.06%
Lincoln	53,218	53,245	27	0.05%
Macon	25,208	25,220	12	0.05%

Exhibits: 41

County	Voters in state-provided snapshot file	Voters in downloaded ftp "voterstats" files	Raw diff.	Pct. diff.
Madison	16,683	16,689	6	0.04%
Martin	18,045	18,054	9	0.05%
McDowell	28,918	28,936	18	0.06%
Mecklenburg	678,318	678,771	453	0.07%
Mitchell	11,741	11,745	4	0.03%
Montgomery	16,717	16,737	20	0.12%
Moore	64,328	64,407	79	0.12%
Nash	68,199	68,230	31	0.05%
New Hanover	159,125	159,246	121	0.08%
Northampton	15,538	15,540	2	0.01%
Onslow	97,610	97,913	303	0.31%
Orange	112,114	112,371	257	0.23%
Pamlico	9,661	9,672	11	0.11%
Pasquotank	29,405	29,446	41	0.14%
Pender	36,321	36,359	38	0.10%
Perquimans	9,975	9,980	5	0.05%
Person	26,411	26,434	23	0.09%
Pitt	116,418	116,477	59	0.05%
Po k	15,286	15,289	3	0.02%
Randolph	91,502	91,535	33	0.04%
Richmond	31,020	31,030	10	0.03%
Robeson	75,366	75,393	27	0.04%
Rockingham	60,900	60,926	26	0.04%
Rowan	93,918	93,961	43	0.05%
Rutherford	43,910	43,932	22	0.05%
Sampson	37,977	37,997	20	0.05%
Scotland	23,107	23,118	11	0.05%
Stanly	40,419	40,445	26	0.06%
Stokes	30,942	30,958	16	0.05%
Surry	44,860	44,880	20	0.04%
Swain	10,198	10,198	0	0.00%
Transylvania	24,299	24,320	21	0.09%
Tyrrell	2,577	2,577	0	0.00%
Union	136,249	136,317	68	0.05%
Vance	30,791	30,807	16	0.05%
Wake	654,547	655,078	531	0.08%
Warren	13,730	13,738	8	0.06%
Washington	9,172	9,194	22	0.24%
Watauga	44,818	44,838	20	0.04%
Wayne	74,917	75,037	120	0.16%
Wilkes	42,479	42,496	17	0.04%
Wilson	56,218	56,219	1	0.00%
Yadkin	24,152	24,166	14	0.06%
Yancey	14,650	14,651	1	0.01%

Exhibit 7. Comparison of voters in state-provided voter history file with voters in downloaded ftp "historystats" and voter history files, 2006

	Source of turnout data			Raw differences		Percentage differences	
County	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Alamance	29,286	29,254	29,860	-32	574	-0.1%	2.0%
Alexander	10,609	10,530	10,551	-79	-58	-0.7%	-0.5%
Alleghany	4,035	3,850	4,044	-185	9	-4.6%	0.2%
Anson	5,687	5,676	5,600	-11	-87	-0.2%	-1.5%
Ashe	8,508	8,480	8,711	-28	203	-0.3%	2.4%
Avery	3,841	3,829	3,891	-12	50	-0.3%	1.3%
Beaufort	12,255	12,250	12,252	-5	-3	0.0%	0.0%
Bertie	4,053	4,049	4,011	-4	-42	-0.1%	-1.0%
Bladen	7,761	7,737	7,757	-24	-4	-0.3%	-0.1%
Brunswick	26,813	26,708	27,842	-105	1,029	-0.4%	3.8%
Buncombe	79,329	78,765	78,559	-564	-770	-0.7%	-1.0%
Burke	21,812	21,788	21,770	-24	-42	-0.1%	-0.2%
Cabarrus	31,622	31,564	32,190	-58	568	-0.2%	1.8%
Caldwell	20,687	20,620	20,509	-67	-178	-0.3%	-0.9%
Camden	3,025	3,025	2,947	0	-78	0.0%	-2.6%
Carteret	22,273	22,245	22,646	-28	373	-0.1%	1.7%
Caswell	5,111	5,106	5,113	-5	2	-0.1%	0.0%
Catawba	34,794	34,630	34,777	-164	-17	-0.5%	0.0%
Chatham	17,931	17,888	18,979	-43	1,048	-0.2%	5.8%
Cherokee	9,319	9,319	9,306	0	-13	0.0%	-0.1%
Chowan	2,867	2,858	2,869	-9	2	-0.3%	0.1%
Clay	4,663	4,644	4,639	-19	-24	-0.4%	-0.5%
Cleveland	23,598	23,580	23,505	-18	-93	-0.1%	-0.4%
Columbus	13,744	13,715	13,644	-29	-100	-0.2%	-0.7%
Craven	23,841	23,819	23,622	-22	-219	-0.1%	-0.9%
Cumberland	47,632	47,451	46,632	-181	-1,000	-0.4%	-2.1%
Currituck	6,620	6,619	6,479	-1	-141	0.0%	-2.1%
Dare	9,817	9,796	9,761	-21	-56	-0.2%	-0.6%
Davidson	31,103	31,066	31,635	-37	532	-0.1%	1.7%
Davie	11,097	11,077	11,241	-20	144	-0.2%	1.3%
Duplin	8,199	8,179	8,220	-20	21	-0.2%	0.3%
Durham	56,289	56,206	56,291	-83	2	-0.1%	0.0%
Edgecombe	8,664	8,629	8,530	-35	-134	-0.4%	-1.5%
Forsyth	72,171	72,064	71,912	-107	-259	-0.1%	-0.4%
Franklin	13,158	13,134	13,353	-24	195	-0.2%	1.5%
Gaston	37,761	37,675	38,184	-86	423	-0.2%	1.1%
Gates	2,553	2,549	2,515	-4	-38	-0.2%	-1.5%
Graham	4,045	4,034	3,991	-11	-54	-0.3%	-1.3%
Granville	8,852	8,834	9,239	-18	387	-0.2%	4.4%
Greene	3,589	3,583	3,568	-6	-21	-0.2%	-0.6%
Guilford	103,602	103,562	102,725	-40	-877	0.0%	-0.8%
Halifax	8,134	8,075	7,982	-59	-152	-0.7%	-1.9%
Harnett	18,472	18,460	18,646	-12	174	-0.1%	0.9%
Haywood	20,810	20,783	20,656	-27	-154	-0.1%	-0.7%
Henderson	33,663	33,634	34,489	-29	826	-0.1%	2.5%
Hertford	4,058	4,054	4,033	-4	-25	-0.1%	-0.6%
Hoke	6,064	6,046	6,190	-18	126	-0.3%	2.1%
Hyde	1,873	1,871	1,860	-2	-13	-0.1%	-0.7%
Iredell	29,346	29,290	29,515	-56	169	-0.2%	0.6%
Jackson	10,907	10,894	10,780	-13	-127	-0.1%	-1.2%
Johnston	30,826	30,800	31,752	-26	926	-0.1%	3.0%
Jones	3,163	3,163	3,200	0	37	0.0%	1.2%
Lee	12,645	12,627	12,450	-18	-195	-0.1%	-1.5%
Lenoir	12,268	12,262	12,056	-6	-212	0.0%	-1.7%
Lincoln	18,717	18,700	18,912	-17	195	-0.1%	1.0%
Macon	13,066	13,058	12,984	-8	-82	-0.1%	-0.6%

County	Source of turnout data			Raw differences		Percentage differences	
	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Madison	8,842	8,809	8,894	-33	52	-0.4%	0.6%
Martin	5,369	5,333	5,318	-36	-51	-0.7%	-0.9%
McDowell	11,743	11,723	11,780	-20	37	-0.2%	0.3%
Mecklenburg	157,337	156,821	154,549	-516	-2,788	-0.3%	-1.8%
Mitchell	5,122	5,120	5,093	-2	-29	0.0%	-0.6%
Montgomery	6,150	6,131	6,176	-19	26	-0.3%	0.4%
Moore	21,707	21,686	22,058	-21	351	-0.1%	1.6%
Nash	17,483	17,465	17,435	-18	-48	-0.1%	-0.3%
New Hanover	44,668	44,602	44,517	-66	-151	-0.1%	-0.3%
Northampton	5,475	5,475	5,443	0	-32	0.0%	-0.6%
Onslow	18,957	18,899	18,837	-58	-120	-0.3%	-0.6%
Orange	34,301	34,217	33,089	-84	-1,212	-0.2%	-3.5%
Pamlico	3,968	3,968	3,981	0	13	0.0%	0.3%
Pasquotank	6,446	6,432	6,442	-14	-4	-0.2%	-0.1%
Pender	11,072	11,053	11,329	-19	257	-0.2%	2.3%
Perquimans	2,732	2,728	2,750	-4	18	-0.1%	0.7%
Person	11,068	11,049	10,992	-19	-76	-0.2%	-0.7%
Pitt	25,935	25,896	26,053	-39	118	-0.2%	0.5%
Polk	7,808	7,790	7,879	-18	71	-0.2%	0.9%
Randolph	27,223	27,180	27,319	-43	96	-0.2%	0.4%
Richmond	8,745	8,707	8,599	-38	-146	-0.4%	-1.7%
Robeson	13,478	13,421	13,428	-57	-50	-0.4%	-0.4%
Rockingham	20,378	20,363	20,154	-15	-224	-0.1%	-1.1%
Rowan	25,938	25,901	26,051	-37	113	-0.1%	0.4%
Rutherford	18,584	18,568	18,562	-16	-22	-0.1%	-0.1%
Sampson	12,699	12,670	12,578	-29	-121	-0.2%	-1.0%
Scotland	8,607	8,565	8,404	-42	-203	-0.5%	-2.4%
Stanly	15,862	15,839	15,819	-23	-43	-0.1%	-0.3%
Stokes	12,230	12,200	12,179	-30	-51	-0.2%	-0.4%
Surry	16,573	16,553	16,594	-20	21	-0.1%	0.1%
Swain	4,775	4,774	4,706	-1	-69	0.0%	-1.4%
Transylvania	13,532	13,520	13,357	-12	-175	-0.1%	-1.3%
Tyrrell	993	982	994	-11	1	-1.1%	0.1%
Union	33,146	33,141	34,130	-5	984	0.0%	3.0%
Vance	12,084	12,070	11,733	-14	-351	-0.1%	-2.9%
Wake	209,427	207,746	206,324	-1,681	-3,103	-0.8%	-1.5%
Warren	4,287	4,259	4,348	-28	61	-0.7%	1.4%
Washington	4,096	4,081	3,967	-15	-129	-0.4%	-3.1%
Watauga	15,799	15,753	15,046	-46	-753	-0.3%	-4.8%
Wayne	20,237	20,141	19,871	-96	-366	-0.5%	-1.8%
Wilkes	13,940	13,931	13,971	-9	31	-0.1%	0.2%
Wilson	13,912	13,895	13,880	-17	-32	-0.1%	-0.2%
Yadkin	8,860	8,855	8,844	-5	-16	-0.1%	-0.2%
Yancey	7,726	7,689	7,739	-37	13	-0.5%	0.2%

Exhibit 8. Comparison of voters in state-provided voter history file with voters in downloaded ftp "historystats" and voter history files, 2008

	Source of turnout data			Raw differences		Percentage differences	
County	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Alamance	65,203	64,875	65,824	-328	621	-0.5%	1.0%
Alexander	17,576	17,408	17,533	-168	-43	-1.0%	-0.2%
Alleghany	5,446	5,393	5,462	-53	16	-1.0%	0.3%
Anson	10,847	10,713	10,635	-134	-212	-1.2%	-2.0%
Ashe	13,432	13,382	13,600	-50	168	-0.4%	1.3%
Avery	8,066	7,980	8,013	-86	-53	-1.1%	-0.7%
Beaufort	23,242	23,134	23,377	-108	135	-0.5%	0.6%
Bertie	9,897	9,797	9,792	-100	-105	-1.0%	-1.1%
Bladen	15,744	15,604	15,772	-140	28	-0.9%	0.2%
Brunswick	53,684	53,436	54,866	-248	1,182	-0.5%	2.2%
Buncombe	125,474	124,256	124,940	-1,218	-534	-1.0%	-0.4%
Burke	38,360	38,177	38,188	-183	-172	-0.5%	-0.4%
Cabarrus	78,805	78,585	80,015	-220	1,210	-0.3%	1.5%
Caldwell	35,800	35,523	35,680	-277	-120	-0.8%	-0.3%
Camden	4,882	4,854	4,857	-28	-25	-0.6%	-0.5%
Carteret	34,960	34,609	35,652	-351	692	-1.0%	2.0%
Caswell	11,027	10,960	10,989	-67	-38	-0.6%	-0.3%
Catawba	70,775	70,052	70,378	-723	-397	-1.0%	-0.6%
Chatham	33,121	32,732	34,144	-389	1,023	-1.2%	3.1%
Cherokee	12,870	12,853	12,850	-17	-20	-0.1%	-0.2%
Chowan	7,602	7,544	7,505	-58	-97	-0.8%	-1.3%
Clay	5,647	5,608	5,650	-39	3	-0.7%	0.1%
Cleveland	44,142	44,014	43,904	-128	-238	-0.3%	-0.5%
Columbus	24,692	24,574	24,535	-118	-157	-0.5%	-0.6%
Craven	45,152	44,671	44,997	-481	-155	-1.1%	-0.3%
Cumberland	129,431	127,825	126,973	-1,606	-2,458	-1.2%	-1.9%
Currituck	11,171	11,083	11,147	-88	-24	-0.8%	-0.2%
Dare	18,336	18,244	18,338	-92	2	-0.5%	0.0%
Davidson	69,897	69,736	70,580	-161	683	-0.2%	1.0%
Davie	20,671	20,531	20,865	-140	194	-0.7%	0.9%
Duplin	20,117	20,019	20,145	-98	28	-0.5%	0.1%
Durham	137,840	137,109	137,540	-731	-300	-0.5%	-0.2%
Edgecombe	26,323	26,047	25,825	-276	-498	-1.0%	-1.9%
Forsyth	168,074	166,875	167,392	-1,199	-682	-0.7%	-0.4%
Franklin	26,856	26,723	27,239	-133	383	-0.5%	1.4%
Gaston	85,346	84,851	85,941	-495	595	-0.6%	0.7%
Gates	5,505	5,461	5,480	-44	-25	-0.8%	-0.5%
Graham	4,335	4,321	4,316	-14	-19	-0.3%	-0.4%
Granville	24,970	24,819	25,270	-151	300	-0.6%	1.2%
Greene	8,195	8,169	8,098	-26	-97	-0.3%	-1.2%
Guilford	243,373	242,530	241,349	-843	-2,024	-0.3%	-0.8%
Halifax	25,495	25,124	25,093	-371	-402	-1.5%	-1.6%
Harnett	41,043	40,455	41,385	-588	342	-1.4%	0.8%
Haywood	28,796	28,710	28,943	-86	147	-0.3%	0.5%
Henderson	52,422	52,334	53,483	-88	1,061	-0.2%	2.0%
Hertford	10,760	10,687	10,588	-73	-172	-0.7%	-1.6%
Hoke	15,772	15,599	16,269	-173	497	-1.1%	3.2%
Hyde	2,506	2,490	2,506	-16	0	-0.6%	0.0%
Iredell	73,824	73,152	73,970	-672	146	-0.9%	0.2%
Jackson	17,228	16,937	16,648	-291	-580	-1.7%	-3.4%
Johnston	70,687	69,966	72,496	-721	1,809	-1.0%	2.6%
Jones	5,269	5,244	5,328	-25	59	-0.5%	1.1%
Lee	23,971	23,874	23,738	-97	-233	-0.4%	-1.0%
Lenoir	27,358	27,194	27,085	-164	-273	-0.6%	-1.0%
Lincoln	36,103	35,918	36,364	-185	261	-0.5%	0.7%
Macon	17,471	17,415	17,416	-56	-55	-0.3%	-0.3%

County	Source of turnout data			Raw differences		Percentage differences	
	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Madison	10,661	10,598	10,725	-63	64	-0.6%	0.6%
Martin	12,790	12,628	12,634	-162	-156	-1.3%	-1.2%
McDowell	18,588	18,436	18,648	-152	60	-0.8%	0.3%
Mecklenburg	417,111	413,824	414,123	-3,287	-2,988	-0.8%	-0.7%
Mitchell	7,996	7,972	8,021	-24	25	-0.3%	0.3%
Montgomery	11,427	11,319	11,410	-108	-17	-0.9%	-0.1%
Moore	45,701	45,611	45,964	-90	263	-0.2%	0.6%
Nash	47,393	47,199	47,178	-194	-215	-0.4%	-0.5%
New Hanover	101,720	100,648	101,052	-1,072	-668	-1.1%	-0.7%
Northampton	10,733	10,678	10,635	-55	-98	-0.5%	-0.9%
Onslow	50,705	49,852	50,298	-853	-407	-1.7%	-0.8%
Orange	75,365	74,398	71,054	-967	-4,311	-1.3%	-5.7%
Pamlico	6,834	6,798	6,848	-36	14	-0.5%	0.2%
Pasquotank	18,381	18,167	18,032	-214	-349	-1.2%	-1.9%
Pender	24,209	24,105	24,472	-104	263	-0.4%	1.1%
Perquimans	6,624	6,547	6,608	-77	-16	-1.2%	-0.2%
Person	18,777	18,611	18,727	-166	-50	-0.9%	-0.3%
Pitt	75,504	74,885	74,200	-619	-1,304	-0.8%	-1.7%
Polk	10,816	10,763	10,940	-53	124	-0.5%	1.1%
Randolph	56,531	56,352	56,565	-179	34	-0.3%	0.1%
Richmond	19,581	19,421	19,371	-160	-210	-0.8%	-1.1%
Robeson	41,684	41,315	41,290	-369	-394	-0.9%	-0.9%
Rockingham	41,917	41,820	41,663	-97	-254	-0.2%	-0.6%
Rowan	61,959	61,776	61,766	-183	-193	-0.3%	-0.3%
Rutherford	29,259	29,058	29,294	-201	35	-0.7%	0.1%
Sampson	26,365	26,193	26,152	-172	-213	-0.7%	-0.8%
Scotland	14,352	14,233	14,126	-119	-226	-0.8%	-1.6%
Stanly	28,849	28,591	28,892	-258	43	-0.9%	0.1%
Stokes	22,166	22,074	22,105	-92	-61	-0.4%	-0.3%
Surry	30,299	30,176	30,265	-123	-34	-0.4%	-0.1%
Swain	5,942	5,929	5,920	-13	-22	-0.2%	-0.4%
Transylvania	17,347	17,297	17,245	-50	-102	-0.3%	-0.6%
Tyrrell	1,946	1,920	1,900	-26	-46	-1.3%	-2.4%
Union	87,024	86,731	88,576	-293	1,552	-0.3%	1.8%
Vance	21,044	20,898	20,714	-146	-330	-0.7%	-1.6%
Wake	448,923	443,021	446,115	-5,902	-2,808	-1.3%	-0.6%
Warren	10,148	10,041	10,142	-107	-6	-1.1%	-0.1%
Washington	6,570	6,491	6,431	-79	-139	-1.2%	-2.1%
Watauga	28,728	28,587	26,261	-141	-2,467	-0.5%	-8.6%
Wayne	50,572	49,449	49,760	-1,123	-812	-2.2%	-1.6%
Wilkes	30,240	30,162	30,123	-78	-117	-0.3%	-0.4%
Wilson	37,701	37,511	37,391	-190	-310	-0.5%	-0.8%
Yadkin	17,313	17,238	17,277	-75	-36	-0.4%	-0.2%
Yancey	10,108	10,029	10,061	-79	-47	-0.8%	-0.5%

Exhibit 9. Comparison of voters in state-provided voter history file with voters in downloaded ftp "historystats" and voter history files, 2010

	Source of turnout data			Raw differences		Percentage differences	
County	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Alamance	42,070	41,841	42,230	-229	160	-0.5%	0.4%
Alexander	12,707	12,637	12,634	-70	-73	-0.6%	-0.6%
Alleghany	4,161	4,140	4,153	-21	-8	-0.5%	-0.2%
Anson	6,819	6,777	6,745	-42	-74	-0.6%	-1.1%
Ashe	9,797	9,756	9,849	-41	52	-0.4%	0.5%
Avery	5,114	5,088	5,129	-26	15	-0.5%	0.3%
Beaufort	16,693	16,612	16,726	-81	33	-0.5%	0.2%
Bertie	6,684	6,649	6,614	-35	-70	-0.5%	-1.0%
Bladen	12,729	12,676	12,656	-53	-73	-0.4%	-0.6%
Brunswick	40,501	40,274	40,855	-227	354	-0.6%	0.9%
Buncombe	80,855	80,205	80,617	-650	-238	-0.8%	-0.3%
Burke	23,082	22,973	23,043	-109	-39	-0.5%	-0.2%
Cabarrus	48,189	47,914	48,537	-275	348	-0.6%	0.7%
Caldwell	22,403	22,277	22,353	-126	-50	-0.6%	-0.2%
Camden	3,197	3,184	3,200	-13	3	-0.4%	0.1%
Carteret	23,417	23,277	23,625	-140	208	-0.6%	0.9%
Caswell	7,197	7,170	7,181	-27	-16	-0.4%	-0.2%
Catawba	41,955	41,670	41,838	-285	-117	-0.7%	-0.3%
Chatham	24,780	24,600	25,133	-180	353	-0.7%	1.4%
Cherokee	10,222	10,208	10,210	-14	-12	-0.1%	-0.1%
Chowan	5,425	5,386	5,381	-39	-44	-0.7%	-0.8%
Clay	5,079	5,057	5,054	-22	-25	-0.4%	-0.5%
Cleveland	27,020	26,930	26,932	-90	-88	-0.3%	-0.3%
Columbus	16,821	16,762	16,746	-59	-75	-0.4%	-0.4%
Craven	28,196	28,029	28,123	-167	-73	-0.6%	-0.3%
Cumberland	69,809	69,360	69,047	-449	-762	-0.6%	-1.1%
Currituck	7,954	7,927	7,899	-27	-55	-0.3%	-0.7%
Dare	12,171	12,109	12,124	-62	-47	-0.5%	-0.4%
Davidson	41,980	41,771	42,034	-209	54	-0.5%	0.1%
Davie	14,148	14,067	14,200	-81	52	-0.6%	0.4%
Duplin	13,421	13,350	13,392	-71	-29	-0.5%	-0.2%
Durham	81,688	80,871	81,933	-817	245	-1.0%	0.3%
Edgecombe	16,266	16,118	16,099	-148	-167	-0.9%	-1.0%
Forsyth	96,614	96,076	96,568	-538	-46	-0.6%	0.0%
Franklin	17,662	17,554	17,773	-108	111	-0.6%	0.6%
Gaston	50,066	49,835	50,231	-231	165	-0.5%	0.3%
Gates	3,398	3,383	3,369	-15	-29	-0.4%	-0.9%
Graham	3,927	3,911	3,901	-16	-26	-0.4%	-0.7%
Granville	15,007	14,911	15,180	-96	173	-0.6%	1.2%
Greene	5,663	5,619	5,632	-44	-31	-0.8%	-0.5%
Guilford	140,188	139,471	139,793	-717	-395	-0.5%	-0.3%
Halifax	14,610	14,520	14,545	-90	-65	-0.6%	-0.4%
Harnett	26,201	26,042	26,194	-159	-7	-0.6%	0.0%
Haywood	20,565	20,481	20,651	-84	86	-0.4%	0.4%
Henderson	36,637	36,509	37,007	-128	370	-0.3%	1.0%
Hertford	6,721	6,686	6,672	-35	-49	-0.5%	-0.7%
Hoke	8,491	8,435	8,586	-56	95	-0.7%	1.1%
Hyde	1,718	1,712	1,705	-6	-13	-0.3%	-0.8%
Iredell	43,290	43,063	43,348	-227	58	-0.5%	0.1%
Jackson	11,422	11,336	11,337	-86	-85	-0.8%	-0.7%
Johnston	48,010	47,708	48,323	-302	313	-0.6%	0.7%
Jones	3,860	3,848	3,882	-12	22	-0.3%	0.6%
Lee	14,793	14,690	14,675	-103	-118	-0.7%	-0.8%
Lenoir	17,990	17,905	17,916	-85	-74	-0.5%	-0.4%
Lincoln	23,449	23,326	23,453	-123	4	-0.5%	0.0%
Macon	13,106	13,086	13,102	-20	-4	-0.2%	0.0%

County	Source of turnout data			Raw differences		Percentage differences	
	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Madison	8,326	8,274	8,316	-52	-10	-0.6%	-0.1%
Martin	8,577	8,470	8,472	-107	-105	-1.2%	-1.2%
McDowell	12,515	12,463	12,485	-52	-30	-0.4%	-0.2%
Mecklenburg	229,341	227,876	228,181	-1,465	-1,160	-0.6%	-0.5%
Mitchell	5,519	5,499	5,514	-20	-5	-0.4%	-0.1%
Montgomery	7,881	7,845	7,869	-36	-12	-0.5%	-0.2%
Moore	28,583	28,483	28,752	-100	169	-0.3%	0.6%
Nash	31,541	31,351	31,431	-190	-110	-0.6%	-0.3%
New Hanover	64,778	64,357	64,717	-421	-61	-0.6%	-0.1%
Northampton	7,722	7,696	7,689	-26	-33	-0.3%	-0.4%
Onslow	26,798	26,643	26,735	-155	-63	-0.6%	-0.2%
Orange	46,201	45,630	45,157	-571	-1,044	-1.2%	-2.3%
Pamlico	4,735	4,714	4,750	-21	15	-0.4%	0.3%
Pasquotank	9,823	9,751	9,752	-72	-71	-0.7%	-0.7%
Pender	16,763	16,631	16,834	-132	71	-0.8%	0.4%
Perquimans	4,220	4,198	4,200	-22	-20	-0.5%	-0.5%
Person	11,775	11,702	11,718	-73	-57	-0.6%	-0.5%
Pitt	41,877	41,578	41,649	-299	-228	-0.7%	-0.5%
Polk	7,911	7,869	7,963	-42	52	-0.5%	0.7%
Randolph	33,355	33,201	33,415	-154	60	-0.5%	0.2%
Richmond	12,552	12,472	12,431	-80	-121	-0.6%	-1.0%
Robeson	23,597	23,476	23,472	-121	-125	-0.5%	-0.5%
Rockingham	26,305	26,204	26,173	-101	-132	-0.4%	-0.5%
Rowan	36,983	36,813	36,988	-170	5	-0.5%	0.0%
Rutherford	19,195	19,134	19,190	-61	-5	-0.3%	0.0%
Sampson	17,962	17,872	17,821	-90	-141	-0.5%	-0.8%
Scotland	8,610	8,560	8,534	-50	-76	-0.6%	-0.9%
Stanly	18,867	18,792	18,864	-75	-3	-0.4%	0.0%
Stokes	14,615	14,520	14,541	-95	-74	-0.7%	-0.5%
Surry	19,159	19,083	19,093	-76	-66	-0.4%	-0.3%
Swain	4,643	4,628	4,610	-15	-33	-0.3%	-0.7%
Transylvania	12,641	12,577	12,606	-64	-35	-0.5%	-0.3%
Tyrrell	1,387	1,376	1,376	-11	-11	-0.8%	-0.8%
Union	50,312	50,080	50,752	-232	440	-0.5%	0.9%
Vance	14,168	14,076	13,953	-92	-215	-0.6%	-1.5%
Wake	280,931	278,600	280,269	-2,331	-662	-0.8%	-0.2%
Warren	6,536	6,508	6,516	-28	-20	-0.4%	-0.3%
Washington	4,628	4,598	4,575	-30	-53	-0.6%	-1.1%
Watauga	17,174	17,025	16,895	-149	-279	-0.9%	-1.6%
Wayne	31,166	30,909	30,856	-257	-310	-0.8%	-1.0%
Wilkes	19,934	19,874	19,921	-60	-13	-0.3%	-0.1%
Wilson	27,155	26,994	26,832	-161	-323	-0.6%	-1.2%
Yadkin	11,739	11,685	11,724	-54	-15	-0.5%	-0.1%
Yancey	9,529	9,439	9,419	-90	-110	-0.9%	-1.2%

Exhibit 10. Comparison of voters in state-provided voter history file with voters in downloaded ftp "historystats" and voter history files, 2012

	Source of turnout data			Raw differences		Percentage differences	
County	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Alamance	68,326	68,243	68,293	-83	-33	-0.1%	0.0%
Alexander	17,424	17,401	17,415	-23	-9	-0.1%	-0.1%
Alleghany	5,164	5,160	5,171	-4	7	-0.1%	0.1%
Anson	11,366	11,345	11,333	-21	-33	-0.2%	-0.3%
Ashe	12,905	12,894	12,930	-11	25	-0.1%	0.2%
Avery	7,823	7,817	7,825	-6	2	-0.1%	0.0%
Beaufort	23,771	23,747	23,786	-24	15	-0.1%	0.1%
Bertie	10,205	10,182	10,178	-23	-27	-0.2%	-0.3%
Bladen	16,089	16,062	16,061	-27	-28	-0.2%	-0.2%
Brunswick	57,967	57,904	58,139	-63	172	-0.1%	0.3%
Buncombe	128,613	128,528	128,531	-85	-82	-0.1%	-0.1%
Burke	37,116	37,091	37,123	-25	7	-0.1%	0.0%
Cabarrus	84,132	84,052	84,256	-80	124	-0.1%	0.1%
Caldwell	35,319	35,285	35,310	-34	-9	-0.1%	0.0%
Camden	4,779	4,775	4,776	-4	-3	-0.1%	-0.1%
Carteret	35,754	35,719	35,841	-35	87	-0.1%	0.2%
Caswell	11,196	11,184	11,205	-12	9	-0.1%	0.1%
Catawba	70,235	70,168	70,203	-67	-32	-0.1%	0.0%
Chatham	35,684	35,646	35,854	-38	170	-0.1%	0.5%
Cherokee	13,058	13,055	13,059	-3	1	0.0%	0.0%
Chowan	7,558	7,555	7,540	-3	-18	0.0%	-0.2%
Clay	5,682	5,678	5,679	-4	-3	-0.1%	-0.1%
Cleveland	43,536	43,509	43,531	-27	-5	-0.1%	0.0%
Columbus	24,512	24,496	24,480	-16	-32	-0.1%	-0.1%
Craven	46,441	46,334	46,339	-107	-102	-0.2%	-0.2%
Cumberland	129,013	128,698	128,575	-315	-438	-0.2%	-0.3%
Currituck	11,340	11,337	11,326	-3	-14	0.0%	-0.1%
Dare	18,158	18,146	18,161	-12	3	-0.1%	0.0%
Davidson	71,872	71,832	71,979	-40	107	-0.1%	0.1%
Davie	20,931	20,907	20,956	-24	25	-0.1%	0.1%
Duplin	20,703	20,689	20,664	-14	-39	-0.1%	-0.2%
Durham	147,683	147,317	147,191	-366	-492	-0.2%	-0.3%
Edgecombe	27,205	27,125	27,087	-80	-118	-0.3%	-0.4%
Forsyth	175,756	175,548	175,391	-208	-365	-0.1%	-0.2%
Franklin	28,577	28,551	28,585	-26	8	-0.1%	0.0%
Gaston	91,179	90,993	91,098	-186	-81	-0.2%	-0.1%
Gates	5,471	5,458	5,453	-13	-18	-0.2%	-0.3%
Graham	4,100	4,093	4,092	-7	-8	-0.2%	-0.2%
Granville	26,453	26,428	26,452	-25	-1	-0.1%	0.0%
Greene	8,300	8,291	8,293	-9	-7	-0.1%	-0.1%
Guilford	255,756	255,568	255,335	-188	-421	-0.1%	-0.2%
Halifax	26,397	26,165	26,290	-232	-107	-0.9%	-0.4%
Harnett	43,716	43,681	43,698	-35	-18	-0.1%	0.0%
Haywood	28,374	28,356	28,401	-18	27	-0.1%	0.1%
Henderson	52,999	52,984	53,165	-15	166	0.0%	0.3%
Hertford	11,027	11,018	11,013	-9	-14	-0.1%	-0.1%
Hoke	17,230	17,203	17,270	-27	40	-0.2%	0.2%
Hyde	2,412	2,407	2,404	-5	-8	-0.2%	-0.3%
Iredell	76,926	76,867	76,905	-59	-21	-0.1%	0.0%
Jackson	17,007	16,986	16,927	-21	-80	-0.1%	-0.5%
Johnston	77,187	77,090	77,426	-97	239	-0.1%	0.3%
Jones	5,259	5,258	5,267	-1	8	0.0%	0.2%
Lee	24,380	24,359	24,328	-21	-52	-0.1%	-0.2%
Lenoir	28,468	28,449	28,432	-19	-36	-0.1%	-0.1%
Lincoln	37,029	37,002	37,052	-27	23	-0.1%	0.1%
Macon	17,078	17,076	17,085	-2	7	0.0%	0.0%

County	Source of turnout data			Raw differences		Percentage differences	
	State-provided voter history file (1)	State report via ftp site (2)	Voter history file on ftp site (3)	Col (2) minus Col (1)	Col (3) minus Col (1)	Col (2) minus Col (1)	Col (3) minus Col (1)
Madison	10,396	10,392	10,420	-4	24	0.0%	0.2%
Martin	12,756	12,748	12,732	-8	-24	-0.1%	-0.2%
McDowell	18,319	18,304	18,322	-15	3	-0.1%	0.0%
Mecklenburg	453,302	452,567	451,934	-735	-1,368	-0.2%	-0.3%
Mitchell	7,888	7,882	7,868	-6	-20	-0.1%	-0.3%
Montgomery	11,389	11,362	11,370	-27	-19	-0.2%	-0.2%
Moore	46,659	46,630	46,751	-29	92	-0.1%	0.2%
Nash	48,797	48,751	48,738	-46	-59	-0.1%	-0.1%
New Hanover	104,426	104,320	104,353	-106	-73	-0.1%	-0.1%
Northampton	10,844	10,837	10,827	-7	-17	-0.1%	-0.2%
Onslow	51,838	51,758	51,831	-80	-7	-0.2%	0.0%
Orange	77,105	77,008	76,787	-97	-318	-0.1%	-0.4%
Pamlico	6,835	6,833	6,833	-2	-2	0.0%	0.0%
Pasquotank	18,264	18,218	18,265	-46	1	-0.3%	0.0%
Pender	24,903	24,867	24,945	-36	42	-0.1%	0.2%
Perquimans	6,723	6,717	6,713	-6	-10	-0.1%	-0.1%
Person	19,217	19,203	19,210	-14	-7	-0.1%	0.0%
Pitt	79,287	79,231	79,291	-56	4	-0.1%	0.0%
Polk	10,582	10,568	10,600	-14	18	-0.1%	0.2%
Randolph	61,288	61,236	61,360	-52	72	-0.1%	0.1%
Richmond	19,668	19,619	19,614	-49	-54	-0.2%	-0.3%
Robeson	43,693	43,602	43,573	-91	-120	-0.2%	-0.3%
Rockingham	42,262	42,232	42,231	-30	-31	-0.1%	-0.1%
Rowan	62,767	62,725	62,739	-42	-28	-0.1%	0.0%
Rutherford	29,202	29,185	29,196	-17	-6	-0.1%	0.0%
Sampson	26,451	26,421	26,435	-30	-16	-0.1%	-0.1%
Scotland	14,242	14,223	14,216	-19	-26	-0.1%	-0.2%
Stanly	28,945	28,928	28,971	-17	26	-0.1%	0.1%
Stokes	21,880	21,860	21,861	-20	-19	-0.1%	-0.1%
Surry	29,972	29,947	29,936	-25	-36	-0.1%	-0.1%
Swain	5,828	5,819	5,818	-9	-10	-0.2%	-0.2%
Transylvania	16,994	16,987	17,001	-7	7	0.0%	0.0%
Tyrrell	1,802	1,799	1,801	-3	-1	-0.2%	-0.1%
Union	95,398	95,351	95,741	-47	343	0.0%	0.4%
Vance	20,986	20,971	20,935	-15	-51	-0.1%	-0.2%
Wake	489,409	488,416	488,413	-993	-996	-0.2%	-0.2%
Warren	10,317	10,301	10,304	-16	-13	-0.2%	-0.1%
Washington	6,550	6,545	6,530	-5	-20	-0.1%	-0.3%
Watauga	27,887	27,845	27,963	-42	76	-0.2%	0.3%
Wayne	51,807	51,651	51,586	-156	-221	-0.3%	-0.4%
Wilkes	29,517	29,504	29,535	-13	18	0.0%	0.1%
Wilson	39,468	39,443	39,417	-25	-51	-0.1%	-0.1%
Yadkin	16,951	16,937	16,981	-14	30	-0.1%	0.2%
Yancey	9,725	9,716	9,740	-9	15	-0.1%	0.2%

Exhibit 11. Comparison of absentee voters in downloaded ftp absentee file with absentee voters in state-provided voter history file, 2006.

County	Absentee voters in downloaded ftp absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Alamance	7,253	7,258	5	0.1%
Alexander	2,830	2,852	22	0.8%
Alleghany	1,653	183	-1,470	-88.9%
Anson	1,482	1,483	1	0.1%
Ashe	1,962	1,963	1	0.1%
Avery	624	559	-65	-10.4%
Beaufort	2,504	2,502	-2	-0.1%
Bertie	829	829	0	0.0%
Bladen	1,871	1,873	2	0.1%
Brunswick	8,904	8,932	28	0.3%
Buncombe	29,762	29,967	205	0.7%
Burke	4,654	4,656	2	0.0%
Cabarrus	4,353	4,364	11	0.3%
Caldwell	5,991	6,014	23	0.4%
Camden	877	877	0	0.0%
Carteret	6,416	6,422	6	0.1%
Caswell	533	534	1	0.2%
Catawba	9,835	9,885	50	0.5%
Chatham	4,282	4,289	7	0.2%
Cherokee	2,717	2,714	-3	-0.1%
Chowan	495	496	1	0.2%
Clay	2,315	2,321	6	0.3%
Cleveland	4,551	4,555	4	0.1%
Columbus	3,274	3,277	3	0.1%
Craven	8,537	8,534	-3	0.0%
Cumberland	6,537	6,562	25	0.4%
Currituck	701	702	1	0.1%
Dare	2,083	2,087	4	0.2%
Davidson	6,404	6,408	4	0.1%
Davie	2,095	2,098	3	0.1%
Duplin	772	772	0	0.0%
Durham	5,373	5,374	1	0.0%
Edgecombe	870	877	7	0.8%
Forsyth	7,778	7,791	13	0.2%
Franklin	1,423	1,424	1	0.1%
Gaston	7,772	7,778	6	0.1%
Gates	325	324	-1	-0.3%
Graham	1,757	1,761	4	0.2%
Granville	1,494	1,487	-7	-0.5%
Greene	614	614	0	0.0%
Guilford	1,696	18,231	16,535	974.9%
Halifax	391	397	6	1.5%
Harnett	3,210	3,212	2	0.1%
Haywood	6,469	6,473	4	0.1%
Henderson	11,938	11,955	17	0.1%
Hertford	403	402	-1	-0.2%
Hoke	1,774	1,777	3	0.2%
Hyde	169	169	0	0.0%
Iredell	5,798	5,810	12	0.2%
Jackson	3,654	3,628	-26	-0.7%
Johnston	3,224	3,227	3	0.1%
Jones	341	341	0	0.0%
Lee	3,555	3,559	4	0.1%
Lenoir	2,638	2,636	-2	-0.1%
Lincoln	2,009	2,010	1	0.0%
Macon	5,797	5,662	-135	-2.3%

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County	Absentee voters in downloaded ftp absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Madison	2,923	2,934	11	0.4%
Martin	634	635	1	0.2%
McDowell	3,867	3,870	3	0.1%
Mecklenburg	30,859	30,862	3	0.0%
Mitchell	1,370	1,370	0	0.0%
Montgomery	658	659	1	0.2%
Moore	3,423	3,425	2	0.1%
Nash	2,539	2,539	0	0.0%
New Hanover	6,895	6,907	12	0.2%
Northampton	414	414	0	0.0%
Onslow	3,427	3,433	6	0.2%
Orange	7,299	7,319	20	0.3%
Pamlico	1,427	1,426	-1	-0.1%
Pasquotank	2,343	2,349	6	0.3%
Pender	3,426	3,418	-8	-0.2%
Perquimans	602	603	1	0.2%
Person	4,314	4,320	6	0.1%
Pitt	6,019	6,020	1	0.0%
Polk	3,740	3,752	12	0.3%
Randolph	4,766	4,869	103	2.2%
Richmond	1,621	1,625	4	0.2%
Robeson	630	629	-1	-0.2%
Rockingham	2,719	2,718	-1	0.0%
Rowan	3,653	3,657	4	0.1%
Rutherford	6,327	6,333	6	0.1%
Sampson	1,543	1,549	6	0.4%
Scotland	3,380	3,397	17	0.5%
Stanly	4,098	4,104	6	0.1%
Stokes	944	941	-3	-0.3%
Surry	4,602	4,590	-12	-0.3%
Swain	1,978	2,018	40	2.0%
Transylvania	6,722	6,723	1	0.0%
Tyrrell	146	146	0	0.0%
Union	5,397	5,400	3	0.1%
Vance	2,460	2,462	2	0.1%
Wake	29,420	29,653	233	0.8%
Warren	702	697	-5	-0.7%
Washington	833	818	-15	-1.8%
Watauga	5,767	5,794	27	0.5%
Wayne	6,595	6,629	34	0.5%
Wilkes	2,693	2,694	1	0.0%
Wilson	2,476	2,477	1	0.0%
Yadkin	700	701	1	0.1%
Yancey	2,578	2,584	6	0.2%

Exhibit 12. Comparison of absentee voters in state-provided absentee correspondence file with absentee voters in state-provided voter history file, 2008.

County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Alamance	37,087	37,163	76	0.20%
Alexander	9,150	9,216	66	0.72%
Alleghany	3,244	3,246	2	0.06%
Anson	5,907	5,947	40	0.68%
Ashe	6,091	6,097	6	0.10%
Avery	2,426	2,430	4	0.16%
Beaufort	12,129	12,139	10	0.08%
Bertie	6,146	6,160	14	0.23%
Bladen	10,387	10,429	42	0.40%
Brunswick	37,882	38,025	143	0.38%
Buncombe	89,110	89,757	647	0.73%
Burke	25,072	25,102	30	0.12%
Cabarrus	34,580	34,643	63	0.18%
Caldwell	23,111	23,195	84	0.36%
Camden	2,896	2,902	6	0.21%
Carteret	21,219	21,237	18	0.08%
Caswell	5,525	5,539	14	0.25%
Catawba	46,671	46,834	163	0.35%
Chatham	22,021	22,080	59	0.27%
Cherokee	6,596	6,595	-1	-0.02%
Chowan	5,052	5,071	19	0.38%
Clay	3,525	3,534	9	0.26%
Cleveland	24,579	24,608	29	0.12%
Columbus	13,367	13,391	24	0.18%
Craven	29,227	29,266	39	0.13%
Cumberland	81,694	82,085	391	0.48%
Currituck	4,004	4,005	1	0.02%
Dare	9,425	9,437	12	0.13%
Davidson	35,851	35,876	25	0.07%
Davie	12,355	12,378	23	0.19%
Duplin	9,513	9,530	17	0.18%
Durham	102,825	103,245	420	0.41%
Edgecombe	18,252	18,372	120	0.66%
Forsyth	94,480	94,793	313	0.33%
Franklin	14,387	14,412	25	0.17%
Gaston	52,191	52,321	130	0.25%
Gates	2,443	2,482	39	1.60%
Graham	2,122	2,122	0	0.00%
Granville	16,034	16,107	73	0.46%
Greene	4,811	4,822	11	0.23%
Guilford	160,418	161,966	1,548	0.96%
Halifax	14,718	15,070	352	2.39%
Harnett	20,848	20,880	32	0.15%
Haywood	16,267	16,287	20	0.12%
Henderson	33,381	33,406	25	0.07%
Hertford	7,186	7,193	7	0.10%
Hoke	9,769	9,796	27	0.28%
Hyde	575	579	4	0.70%
Iredell	43,097	43,184	87	0.20%
Jackson	10,045	10,069	24	0.24%
Johnston	37,747	37,817	70	0.19%
Jones	2,363	2,362	-1	-0.04%
Lee	17,910	17,946	36	0.20%
Lenoir	18,324	18,379	55	0.30%
Lincoln	19,545	19,567	22	0.11%
Macon	10,725	10,730	5	0.05%

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County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Madison	5,931	5,941	10	0.17%
Martin	6,262	6,344	82	1.31%
McDowell	11,559	11,581	22	0.19%
Mecklenburg	234,315	235,459	1,144	0.49%
Mitchell	4,514	4,519	5	0.11%
Montgomery	4,788	4,804	16	0.33%
Moore	29,509	29,535	26	0.09%
Nash	31,574	31,601	27	0.09%
New Hanover	59,750	59,918	168	0.28%
Northampton	5,582	5,583	1	0.02%
Onslow	32,110	32,203	93	0.29%
Orange	55,555	55,688	133	0.24%
Pamlico	4,848	4,848	0	0.00%
Pasquotank	13,447	13,488	41	0.30%
Pender	18,089	18,115	26	0.14%
Perquimans	3,895	3,903	8	0.21%
Person	12,423	12,453	30	0.24%
Pitt	52,380	52,480	100	0.19%
Po k	7,850	7,865	15	0.19%
Randolph	29,717	29,759	42	0.14%
Richmond	12,115	12,164	49	0.40%
Robeson	15,422	15,513	91	0.59%
Rockingham	24,128	24,145	17	0.07%
Rowan	36,774	36,821	47	0.13%
Rutherford	17,802	17,820	18	0.10%
Sampson	14,761	14,779	18	0.12%
Scotland	9,483	9,520	37	0.39%
Stanly	17,788	17,809	21	0.12%
Stokes	9,063	9,108	45	0.50%
Surry	17,156	17,151	-5	-0.03%
Swain	3,175	3,178	3	0.09%
Transylvania	10,691	10,711	20	0.19%
Tyrrell	1,030	1,043	13	1.26%
Union	57,657	57,713	56	0.10%
Vance	13,643	13,672	29	0.21%
Wake	273,930	277,106	3,176	1.16%
Warren	6,472	6,055	-417	-6.44%
Washington	3,638	3,660	22	0.60%
Watauga	18,925	18,968	43	0.23%
Wayne	35,803	36,003	200	0.56%
Wilkes	14,916	14,925	9	0.06%
Wilson	24,937	24,970	33	0.13%
Yadkin	5,544	5,548	4	0.07%
Yancey	5,004	5,028	24	0.48%

Exhibit 13. Comparison of absentee voters in state-provided absentee correspondence file with absentee voters in state-provided voter history file, 2010.

County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Alamance	18,326	18,344	18	0.10%
Alexander	4,987	4,996	9	0.18%
Alleghany	2,177	2,179	2	0.09%
Anson	2,446	2,464	18	0.74%
Ashe	3,602	3,604	2	0.06%
Avery	1,156	1,159	3	0.26%
Beaufort	6,131	6,140	9	0.15%
Bertie	2,532	2,535	3	0.12%
Bladen	7,136	7,149	13	0.18%
Brunswick	22,482	22,510	28	0.12%
Buncombe	35,928	36,060	132	0.37%
Burke	8,409	8,414	5	0.06%
Cabarrus	13,189	13,205	16	0.12%
Caldwell	9,918	9,945	27	0.27%
Camden	1,221	1,221	0	0.00%
Carteret	9,477	9,486	9	0.09%
Caswell	2,341	2,345	4	0.17%
Catawba	16,245	16,291	46	0.28%
Chatham	12,108	12,128	20	0.17%
Cherokee	3,604	3,604	0	0.00%
Chowan	2,497	2,501	4	0.16%
Clay	2,831	2,837	6	0.21%
Cleveland	9,372	9,378	6	0.06%
Columbus	6,408	6,416	8	0.12%
Craven	10,200	10,213	13	0.13%
Cumberland	24,086	24,153	67	0.28%
Currituck	1,934	1,935	1	0.05%
Dare	3,825	3,829	4	0.10%
Davidson	13,421	13,424	3	0.02%
Davie	5,277	5,283	6	0.11%
Duplin	3,830	3,833	3	0.08%
Durham	26,030	26,097	67	0.26%
Edgecombe	5,796	5,808	12	0.21%
Forsyth	29,475	29,517	42	0.14%
Franklin	5,867	5,872	5	0.09%
Gaston	16,506	16,531	25	0.15%
Gates	665	667	2	0.30%
Graham	1,601	1,605	4	0.25%
Granville	5,392	5,407	15	0.28%
Greene	2,261	2,265	4	0.18%
Guilford	48,316	48,344	28	0.06%
Halifax	2,010	2,015	5	0.25%
Harnett	8,772	8,776	4	0.05%
Haywood	8,192	8,194	2	0.02%
Henderson	18,533	18,541	8	0.04%
Hertford	1,455	1,458	3	0.21%
Hoke	3,550	3,557	7	0.20%
Hyde	291	291	0	0.00%
Iredell	15,633	15,643	10	0.06%
Jackson	4,801	4,806	5	0.10%
Johnston	15,090	15,104	14	0.09%
Jones	921	921	0	0.00%
Lee	7,625	7,631	6	0.08%
Lenoir	8,577	8,582	5	0.06%
Lincoln	7,183	7,188	5	0.07%
Macon	6,304	6,304	0	0.00%

County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Madison	3,693	3,699	6	0.16%
Martin	2,514	2,534	20	0.80%
McDowell	5,393	5,404	11	0.20%
Mecklenburg	71,154	71,316	162	0.23%
Mitchell	2,622	2,627	5	0.19%
Montgomery	1,782	1,785	3	0.17%
Moore	7,563	7,567	4	0.05%
Nash	12,447	12,454	7	0.06%
New Hanover	23,025	23,062	37	0.16%
Northampton	2,334	2,334	0	0.00%
Onslow	9,176	9,196	20	0.22%
Orange	17,231	17,262	31	0.18%
Pamlico	2,035	2,035	0	0.00%
Pasquotank	4,926	4,932	6	0.12%
Pender	9,265	9,273	8	0.09%
Perquimans	1,751	1,751	0	0.00%
Person	4,779	4,783	4	0.08%
Pitt	15,141	15,174	33	0.22%
Po k	4,356	4,361	5	0.11%
Randolph	10,179	10,184	5	0.05%
Richmond	4,924	4,937	13	0.26%
Robeson	4,448	4,462	14	0.31%
Rockingham	8,597	8,599	2	0.02%
Rowan	11,480	11,490	10	0.09%
Rutherford	7,258	7,260	2	0.03%
Sampson	6,248	6,259	11	0.18%
Scotland	3,945	3,953	8	0.20%
Stanly	6,837	6,839	2	0.03%
Stokes	3,439	3,445	6	0.17%
Surry	7,906	7,909	3	0.04%
Swain	2,181	2,181	0	0.00%
Transylvania	6,312	6,314	2	0.03%
Tyrrell	524	527	3	0.57%
Union	17,998	18,004	6	0.03%
Vance	6,950	6,965	15	0.22%
Wake	79,970	80,304	334	0.42%
Warren	2,480	2,481	1	0.04%
Washington	1,787	1,792	5	0.28%
Watauga	8,053	8,071	18	0.22%
Wayne	15,221	15,281	60	0.39%
Wilkes	5,963	5,967	4	0.07%
Wilson	12,772	12,788	16	0.13%
Yadkin	1,814	1,815	1	0.06%
Yancey	4,700	4,734	34	0.72%

Exhibit 14. Comparison of absentee voters in state-provided absentee correspondence file with absentee voters in state-provided voter history file, 2012.

County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Alamance	38,975	39,022	47	0.12%
Alexander	9,615	9,622	7	0.07%
Alleghany	3,254	3,255	1	0.03%
Anson	6,572	6,582	10	0.15%
Ashe	6,083	6,084	1	0.02%
Avery	2,557	2,558	1	0.04%
Beaufort	13,985	13,998	13	0.09%
Bertie	6,108	6,118	10	0.16%
Bladen	10,529	10,541	12	0.11%
Brunswick	40,973	40,995	22	0.05%
Buncombe	89,154	89,187	33	0.04%
Burke	23,253	23,261	8	0.03%
Cabarrus	41,531	41,556	25	0.06%
Caldwell	23,546	23,560	14	0.06%
Camden	2,526	2,526	0	0.00%
Carteret	21,831	21,853	22	0.10%
Caswell	5,889	5,894	5	0.08%
Catawba	42,006	42,031	25	0.06%
Chatham	24,686	24,704	18	0.07%
Cherokee	6,613	6,613	0	0.00%
Chowan	5,122	5,123	1	0.02%
Clay	3,620	3,621	1	0.03%
Cleveland	22,460	22,469	9	0.04%
Columbus	12,972	12,983	11	0.08%
Craven	30,936	30,995	59	0.19%
Cumberland	82,859	83,048	189	0.23%
Currituck	3,788	3,788	0	0.00%
Dare	8,101	8,106	5	0.06%
Davidson	39,095	39,107	12	0.03%
Davie	12,229	12,238	9	0.07%
Duplin	9,803	9,807	4	0.04%
Durham	107,118	107,322	204	0.19%
Edgecombe	18,082	18,129	47	0.26%
Forsyth	113,164	113,269	105	0.09%
Franklin	15,880	15,886	6	0.04%
Gaston	60,053	60,157	104	0.17%
Gates	2,284	2,292	8	0.35%
Graham	2,135	2,135	0	0.00%
Granville	17,603	17,612	9	0.05%
Greene	4,934	4,937	3	0.06%
Guilford	173,940	173,978	38	0.02%
Halifax	15,510	15,706	196	1.26%
Harnett	24,467	24,474	7	0.03%
Haywood	15,975	15,979	4	0.03%
Henderson	33,636	33,638	2	0.01%
Hertford	6,476	6,479	3	0.05%
Hoke	10,852	10,865	13	0.12%
Hyde	746	747	1	0.13%
Iredell	44,015	44,031	16	0.04%
Jackson	9,923	9,928	5	0.05%
Johnston	43,324	43,362	38	0.09%
Jones	2,418	2,418	0	0.00%
Lee	17,170	17,178	8	0.05%
Lenoir	19,504	19,513	9	0.05%
Lincoln	20,078	20,084	6	0.03%
Macon	10,329	10,329	0	0.00%

County	Absentee voters in state-provided absentee file	Absentee voters in state-provided voter history file	Raw diff.	Pct. diff
Madison	5,825	5,827	2	0.03%
Martin	6,086	6,089	3	0.05%
McDowell	10,473	10,480	7	0.07%
Mecklenburg	280,124	280,469	345	0.12%
Mitchell	4,704	4,707	3	0.06%
Montgomery	4,636	4,644	8	0.17%
Moore	27,972	27,979	7	0.03%
Nash	31,398	31,403	5	0.02%
New Hanover	65,990	66,042	52	0.08%
Northampton	6,164	6,168	4	0.06%
Onslow	29,970	30,013	43	0.14%
Orange	54,069	54,101	32	0.06%
Pamlico	4,404	4,404	0	0.00%
Pasquotank	12,575	12,607	32	0.25%
Pender	17,479	17,499	20	0.11%
Perquimans	3,936	3,936	0	0.00%
Person	13,185	13,190	5	0.04%
Pitt	51,781	51,801	20	0.04%
Po k	7,305	7,208	-97	-1.33%
Randolph	30,764	30,781	17	0.06%
Richmond	10,813	10,829	16	0.15%
Robeson	18,243	18,273	30	0.16%
Rockingham	23,970	23,971	1	0.00%
Rowan	35,692	35,701	9	0.03%
Rutherford	17,033	17,040	7	0.04%
Sampson	14,384	14,393	9	0.06%
Scotland	8,877	8,884	7	0.08%
Stanly	16,860	16,863	3	0.02%
Stokes	10,157	10,161	4	0.04%
Surry	18,142	18,152	10	0.06%
Swain	3,182	3,182	0	0.00%
Transylvania	10,891	10,893	2	0.02%
Tyrrell	926	927	1	0.11%
Union	60,375	60,398	23	0.04%
Vance	14,357	14,367	10	0.07%
Wake	286,155	286,691	536	0.19%
Warren	6,663	6,672	9	0.14%
Washington	3,963	3,965	2	0.05%
Watauga	16,625	16,643	18	0.11%
Wayne	37,260	37,360	100	0.27%
Wilkes	14,156	14,158	2	0.01%
Wilson	25,508	25,519	11	0.04%
Yadkin	5,802	5,802	0	0.00%
Yancey	5,433	5,435	2	0.04%

Exhibit 15. Comparison of provisional voters in state-provided provisional voter file with provisional voters in state-provided voter history file, 2006.

County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Alamance	216	214	-2	-0.93%
Alexander	47	48	1	2.13%
Alleghany	13	12	-1	-7.69%
Anson	85	85	0	0.00%
Ashe	27	25	-2	-7.41%
Avery	56	56	0	0.00%
Beaufort	34	30	-4	-11.76%
Bertie	34	33	-1	-2.94%
Bladen	1	1	0	0.00%
Brunswick	93	95	2	2.15%
Buncombe	589	592	3	0.51%
Burke	213	213	0	0.00%
Cabarrus	231	234	3	1.30%
Caldwell	162	160	-2	-1.23%
Camden	9	9	0	0.00%
Carteret	139	137	-2	-1.44%
Caswell	9	9	0	0.00%
Catawba	420	426	6	1.43%
Chatham	113	112	-1	-0.88%
Cherokee	24	24	0	0.00%
Chowan	46	46	0	0.00%
Clay	26	27	1	3.85%
Cleveland	129	129	0	0.00%
Columbus	134	129	-5	-3.73%
Craven	297	275	-22	-7.41%
Cumberland	442	441	-1	-0.23%
Currituck	77	77	0	0.00%
Dare	51	51	0	0.00%
Davidson	8	8	0	0.00%
Davie	15	15	0	0.00%
Duplin	57	54	-3	-5.26%
Durham	900	890	-10	-1.11%
Edgecombe	14	14	0	0.00%
Forsyth	355	356	1	0.28%
Franklin	133	132	-1	-0.75%
Gaston	173	169	-4	-2.31%
Gates	18	18	0	0.00%
Graham	6	0	-6	—
Granville	83	80	-3	-3.61%
Greene	1	1	0	0.00%
Guilford	117	119	2	1.71%
Halifax	157	146	-11	-7.01%
Harnett	129	127	-2	-1.55%
Haywood	26	23	-3	-11.54%
Henderson	80	80	0	0.00%
Hertford	1	1	0	0.00%
Hoke	54	54	0	0.00%
Hyde	10	11	1	10.00%
Iredell	144	144	0	0.00%
Jackson	22	22	0	0.00%
Johnston	589	586	-3	-0.51%
Jones	13	13	0	0.00%
Lee	230	231	1	0.43%
Lenoir	120	120	0	0.00%
Lincoln	34	34	0	0.00%
Macon	48	47	-1	-2.08%

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County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Madison	32	34	2	6.25%
Martin	22	23	1	4.55%
McDowell	48	49	1	2.08%
Mecklenburg	1,029	966	-63	-6.12%
Mitchell	31	30	-1	-3.23%
Montgomery	27	23	-4	-14.81%
Moore	95	95	0	0.00%
Nash	2	1	-1	-50.00%
New Hanover	330	324	-6	-1.82%
Northampton	13	13	0	0.00%
Onslow	206	208	2	0.97%
Orange	494	494	0	0.00%
Pamlico	17	18	1	5.88%
Pasquotank	35	36	1	2.86%
Pender	121	120	-1	-0.83%
Perquimans	6	23	17	283.33%
Person	17	17	0	0.00%
Pitt	226	224	-2	-0.88%
Polk	1	1	0	0.00%
Randolph	274	274	0	0.00%
Richmond	86	86	0	0.00%
Robeson	209	208	-1	-0.48%
Rockingham	265	260	-5	-1.89%
Rowan	99	62	-37	-37.37%
Rutherford	134	135	1	0.75%
Sampson	35	36	1	2.86%
Scotland	117	120	3	2.56%
Stanly	68	69	1	1.47%
Stokes	107	109	2	1.87%
Surry	160	157	-3	-1.88%
Swain	4	2	-2	-50.00%
Transylvania	211	211	0	0.00%
Tyrrell	17	16	-1	-5.88%
Union	168	167	-1	-0.60%
Vance	7	7	0	0.00%
Wake	4,389	4,482	93	2.12%
Warren	66	65	-1	-1.52%
Washington	9	11	2	22.22%
Watauga	170	170	0	0.00%
Wayne	80	83	3	3.75%
Wi kes	65	65	0	0.00%
Wilson	18	16	-2	-11.11%
Yadkin	6	6	0	0.00%
Yancey	35	36	1	2.86%

Exhibit 16. Comparison of provisional voters in state-provided provisional voter file with provisional voters in state-provided voter history file, 2008.

County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Alamance	392	389	-3	-0.8%
Alexander	58	58	0	0.0%
Alleghany	12	11	-1	-8.3%
Anson	196	175	-21	-10.7%
Ashe	45	42	-3	-6.7%
Avery	92	130	38	41.3%
Beaufort	65	61	-4	-6.2%
Bertie	166	166	0	0.0%
Bladen	12	12	0	0.0%
Brunswick	148	144	-4	-2.7%
Buncombe	438	439	1	0.2%
Burke	285	284	-1	-0.4%
Cabarrus	957	967	10	1.0%
Caldwell	200	203	3	1.5%
Camden	30	28	-2	-6.7%
Carteret	176	181	5	2.8%
Caswell	23	23	0	0.0%
Catawba	288	301	13	4.5%
Chatham	170	173	3	1.8%
Cherokee	35	35	0	0.0%
Chowan	59	64	5	8.5%
Clay	19	19	0	0.0%
Cleveland	247	249	2	0.8%
Columbus	70	71	1	1.4%
Craven	341	336	-5	-1.5%
Cumberland	1,283	1,307	24	1.9%
Currituck	128	128	0	0.0%
Dare	106	110	4	3.8%
Davidson	97	98	1	1.0%
Davie	34	34	0	0.0%
Duplin	202	201	-1	-0.5%
Durham	1,162	1,176	14	1.2%
Edgecombe	63	64	1	1.6%
Forsyth	569	555	-14	-2.5%
Franklin	162	164	2	1.2%
Gaston	442	437	-5	-1.1%
Gates	14	15	1	7.1%
Graham	7	6	-1	-14.3%
Granville	139	134	-5	-3.6%
Greene	39	39	0	0.0%
Guilford	464	446	-18	-3.9%
Halifax	417	414	-3	-0.7%
Harnett	545	549	4	0.7%
Haywood	5	5	0	0.0%
Henderson	49	49	0	0.0%
Hertford	41	43	2	4.9%
Hoke	160	159	-1	-0.6%
Hyde	25	25	0	0.0%
Iredell	292	300	8	2.7%
Jackson	66	69	3	4.5%
Johnston	756	801	45	6.0%
Jones	25	24	-1	-4.0%
Lee	206	206	0	0.0%
Lenoir	122	121	-1	-0.8%
Lincoln	109	111	2	1.8%
Macon	72	72	0	0.0%

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County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Madison	31	46	15	48.4%
Martin	92	100	8	8.7%
McDowell	98	93	-5	-5.1%
Mecklenburg	2,199	2,204	5	0.2%
Mitchell	45	44	-1	-2.2%
Montgomery	85	87	2	2.4%
Moore	220	219	-1	-0.5%
Nash	152	129	-23	-15.1%
New Hanover	1,008	957	-51	-5.1%
Northampton	21	18	-3	-14.3%
Onslow	496	500	4	0.8%
Orange	145	160	15	10.3%
Pamlico	36	31	-5	-13.9%
Pasquotank	149	151	2	1.3%
Pender	199	203	4	2.0%
Perquimans	16	17	1	6.3%
Person	52	52	0	0.0%
Pitt	1,235	1,261	26	2.1%
Polk	5	5	0	0.0%
Randolph	485	483	-2	-0.4%
Richmond	233	245	12	5.2%
Robeson	1,359	1,387	28	2.1%
Rockingham	547	538	-9	-1.6%
Rowan	322	328	6	1.9%
Rutherford	186	186	0	0.0%
Sampson	154	162	8	5.2%
Scotland	79	79	0	0.0%
Stanly	204	206	2	1.0%
Stokes	207	206	-1	-0.5%
Surry	220	221	1	0.5%
Swain	8	9	1	12.5%
Transylvania	185	187	2	1.1%
Tyrrell	2	3	1	50.0%
Union	408	405	-3	-0.7%
Vance	94	90	-4	-4.3%
Wake	2,067	2,039	-28	-1.4%
Warren	146	125	-21	-14.4%
Washington	17	27	10	58.8%
Watauga	94	94	0	0.0%
Wayne	294	307	13	4.4%
Wi kes	197	200	3	1.5%
Wilson	281	282	1	0.4%
Yadkin	83	81	-2	-2.4%
Yancey	41	37	-4	-9.8%

Exhibit 17. Comparison of provisional voters in state-provided provisional voter file with provisional voters in state-provided voter history file, 2010.

County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Alamance	112	108	-4	-3.57%
Alexander	26	26	0	0.00%
Alleghany	8	7	-1	-12.50%
Anson	69	42	-27	-39.13%
Ashe	20	20	0	0.00%
Avery	46	48	2	4.35%
Beaufort	34	34	0	0.00%
Bertie	93	93	0	0.00%
Bladen	12	12	0	0.00%
Brunswick	95	94	-1	-1.05%
Buncombe	437	431	-6	-1.37%
Burke	40	40	0	0.00%
Cabarrus	323	325	2	0.62%
Caldwell	83	81	-2	-2.41%
Camden	13	13	0	0.00%
Carteret	95	102	7	7.37%
Caswell	1	1	0	0.00%
Catawba	158	161	3	1.90%
Chatham	115	123	8	6.96%
Cherokee	24	25	1	4.17%
Chowan	54	56	2	3.70%
Clay	15	17	2	13.33%
Cleveland	277	278	1	0.36%
Columbus	53	55	2	3.77%
Craven	285	287	2	0.70%
Cumberland	627	628	1	0.16%
Currituck	42	42	0	0.00%
Dare	36	35	-1	-2.78%
Davidson	18	18	0	0.00%
Davie	24	24	0	0.00%
Duplin	81	82	1	1.23%
Durham	2,471	2,506	35	1.42%
Edgecombe	16	16	0	0.00%
Forsyth	418	423	5	1.20%
Franklin	91	91	0	0.00%
Gaston	173	164	-9	-5.20%
Gates	18	16	-2	-11.11%
Graham	14	16	2	14.29%
Granville	68	67	-1	-1.47%
Greene	4	4	0	0.00%
Guilford	158	156	-2	-1.27%
Halifax	229	230	1	0.44%
Harnett	212	212	0	0.00%
Haywood	6	6	0	0.00%
Henderson	33	34	1	3.03%
Hertford	25	25	0	0.00%
Hoke	73	73	0	0.00%
Hyde	5	5	0	0.00%
Iredell	129	129	0	0.00%
Jackson	18	18	0	0.00%
Johnston	605	612	7	1.16%
Jones	14	14	0	0.00%
Lee	174	175	1	0.57%
Lenoir	107	107	0	0.00%
Lincoln	49	49	0	0.00%
Macon	21	22	1	4.76%

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County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Madison	31	31	0	0.00%
Martin	16	16	0	0.00%
McDowell	33	3	-30	-90.91%
Mecklenburg	876	883	7	0.80%
Mitchell	17	17	0	0.00%
Montgomery	6	6	0	0.00%
Moore	51	52	1	1.96%
Nash	31	27	-4	-12.90%
New Hanover	441	447	6	1.36%
Northampton	26	27	1	3.85%
Onslow	351	350	-1	-0.28%
Orange	261	265	4	1.53%
Pamlico	13	13	0	0.00%
Pasquotank	69	69	0	0.00%
Pender	213	213	0	0.00%
Person	20	20	0	0.00%
Pitt	977	987	0	0.00%
Polk	9	10	10	1.02%
Randolph	86	86	1	11.11%
Richmond	96	98	0	0.00%
Robeson	387	393	2	2.08%
Rockingham	263	267	6	1.55%
Rowan	126	127	4	1.52%
Rutherford	88	93	1	0.79%
Sampson	29	31	5	5.68%
Scotland	32	33	2	6.90%
Stanly	167	168	1	3.13%
Stokes	54	54	1	0.60%
Surry	250	250	0	0.00%
Swain	1	2	0	0.00%
Transylvania	125	126	1	100.00%
Tyrrell	2	2	1	0.80%
Union	209	197	0	0.00%
Vance	42	40	-12	-5.74%
Wake	1,311	1,328	-2	-4.76%
Warren	73	77	17	1.30%
Washington	20	16	4	5.48%
Watauga	17	17	-4	-20.00%
Wayne	162	169	0	0.00%
Wi kes	90	91	7	4.32%
Wilson	141	141	1	1.11%
Yadkin	8	8	0	0.00%
Yancey	27	23	0	0.00%

Exhibit 18. Comparison of provisional voters in state-provided provisional voter file with provisional voters in state-provided voter history file, 2012.

County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Alamance	300	300	0	0.00%
Alexander	53	54	1	1.89%
Alleghany	16	16	0	0.00%
Anson	161	150	-11	-6.83%
Ashe	50	50	0	0.00%
Avery	70	74	4	5.71%
Beaufort	67	68	1	1.49%
Bertie	169	171	2	1.18%
Bladen	25	29	4	16.00%
Brunswick	165	161	-4	-2.42%
Buncombe	455	461	6	1.32%
Burke	50	49	-1	-2.00%
Cabarrus	678	679	1	0.15%
Caldwell	217	208	-9	-4.15%
Camden	13	13	0	0.00%
Carteret	200	205	5	2.50%
Caswell	15	16	1	6.67%
Catawba	158	158	0	0.00%
Chatham	113	114	1	0.88%
Cherokee	17	18	1	5.88%
Chowan	58	59	1	1.72%
Clay	19	19	0	0.00%
Cleveland	624	630	6	0.96%
Columbus	104	106	2	1.92%
Craven	259	235	-24	-9.27%
Cumberland	912	943	31	3.40%
Currituck	81	71	-10	-12.35%
Dare	95	95	0	0.00%
Davidson	202	188	-14	-6.93%
Davie	92	95	3	3.26%
Duplin	185	178	-7	-3.78%
Durham	1,442	1,450	8	0.55%
Edgecombe	61	61	0	0.00%
Forsyth	512	471	-41	-8.01%
Franklin	158	163	5	3.16%
Gaston	425	426	1	0.24%
Gates	67	43	-24	-35.82%
Graham	7	0	-6	—
Granville	91	91	0	0.00%
Greene	19	19	0	0.00%
Guilford	375	370	-5	-1.33%
Halifax	279	272	-7	-2.51%
Harnett	449	450	1	0.22%
Haywood	41	43	2	4.88%
Henderson	34	34	0	0.00%
Hertford	34	34	0	0.00%
Hoke	134	136	2	1.49%
Hyde	17	19	2	11.76%
Iredell	177	177	0	0.00%
Jackson	38	38	0	0.00%
Johnston	361	357	-4	-1.11%
Jones	27	26	-1	-3.70%
Lee	288	289	1	0.35%
Lenoir	179	178	-1	-0.56%
Lincoln	90	92	2	2.22%
Macon	27	27	0	0.00%

County	Provisional voters in state-provided provisional voter file	Provisional voters in state-provided voter history file	Raw diff.	Pct. diff.
Madison	32	32	0	0.00%
Martin	84	90	6	7.14%
McDowell	56	63	7	12.50%
Mecklenburg	1,525	1,531	6	0.39%
Mitchell	34	33	-1	-2.94%
Montgomery	26	26	0	0.00%
Moore	254	254	0	0.00%
Nash	101	99	-2	-1.98%
New Hanover	609	601	-8	-1.31%
Northampton	29	21	-8	-27.59%
Onslow	755	754	-1	-0.13%
Orange	158	170	12	7.59%
Pamlico	26	26	0	0.00%
Pasquotank	134	137	3	2.24%
Pender	380	383	3	0.79%
Perquimans	8	8	0	0.00%
Person	40	40	0	0.00%
Pitt	1,679	1,653	-26	-1.55%
Polk	18	16	-2	-11.11%
Randolph	89	89	0	0.00%
Richmond	242	253	11	4.55%
Robeson	1,339	1,357	18	1.34%
Rockingham	269	269	0	0.00%
Rowan	203	206	3	1.48%
Rutherford	227	229	2	0.88%
Sampson	93	93	0	0.00%
Scotland	87	86	-1	-1.15%
Stanly	300	299	-1	-0.33%
Stokes	110	111	1	0.91%
Surry	230	230	0	0.00%
Swain	—	—	—	—
Transylvania	201	201	0	0.00%
Tyrrell	2	2	0	0.00%
Union	456	454	-2	-0.44%
Vance	54	54	0	0.00%
Wake	1,767	1,768	1	0.06%
Warren	84	82	-2	-2.38%
Washington	29	30	1	3.45%
Watauga	51	55	4	7.84%
Wayne	214	204	-10	-4.67%
Wi kes	137	138	1	0.73%
Wilson	147	151	4	2.72%
Yadkin	73	73	0	0.00%
Yancey	55	39	-16	-29.09%

Exhibit 19. Survey research datasets used in this report

I used two data sources that are based on survey research programs to support some of the analysis in this report. This exhibit describes the two studies in detail, the Voting and Registration Supplement of the Current Population Survey and the Survey of the Performance of American Elections.

Voting and Registration Supplement of the Current Population Survey

The Voting and Registration Supplement (VRS) of the Current Population Survey (CPS), as the name implies, is a supplemental section to the Current Population Survey that is administered in the November of each even-numbered year. The Current Population Survey is a large monthly national sample of households undertaken by the Census Bureau (jointly sponsored by the Bureau of Labor Statistics) primarily to gather information about the nation's labor force.[8] Immediately after each federal election since the 1960s, the CPS has included a short set of questions to inquire into the voter registration and turnout status of individuals in the preceding election. Relevant to this report, respondents are asked whether they voted in the most recent election and whether they are registered (if they did not vote). Voters are asked the mode they used to vote — in-person on Election Day, in-person before Election Day, or by mail.

The dataset is available for public download through the Census Bureau's Dataferrett service.[9]

The number of observations is very large, which helps to ground the results obtained through the VRS with a high degree of statistical precision. The following table reports the number of (unweighted) respondents, nationwide and in North Carolina, in the dataset for the years used in this report.

Number of observations in November CPS, 1996 - 2012 election years.

	Total November sample		Number asked about voting	
Year	U.S.	N.C.	U.S.	N.C.
1996	124,112	3,131	78,309	2,126
1998	123,569	3,188	77,533	2,076
2000	121,283	3,017	74,174	1,962
2002	143,633	2,969	89,184	1,954
2004	140,277	2,922	86,782	1,916
2006	136,046	2,620	83,929	1,639
2008	132,812	2,622	80,667	1,726
2010	134,179	2,663	79,819	1,690
2012	133,427	2,709	82,820	1,701

[8] Information about the CPS may be obtained at its Web site: www.census.gov/cps.
[9] dataferrett.census.gov

With sample sizes of this magnitude, the statistical error of any estimate is likely to be much smaller than is typical with survey research into political behavior. For instance, with a sample size of 3,000, the 95% confidence interval around a point-estimate of 50% would be 1.8 percentage points. (Colloquially, this quantity is often called the "margin of error.")

One issue with any survey of voting behavior is whether respondents to the CPS accurately report whether they voted, or whether they are registered. It is well known that social-desirability bias tends to inflate estimates of turnout when they are based on self-reports of turnout, and the VRS is not immune to this.[10] The VRS over-reporting of turnout was for a long time less than that associated with other large national post-election turnout studies. However, recent scholarship has documented the rise of over-reporting of turnout within the VRS study in recent years.[11]

However, for the purposes to which VRS is put in this report, it is likely that over-reporting of voting is not a serious issue. First, I primarily use the VRS to provide estimates of *how* people voted (on Election Day, early, or absentee), and it does not appear that one more is more socially desirable than another. Second, Professor Barry Burden has recently written that responses to the question about voter registration in the VRS are significantly less inflated than official voter registration statistics maintained by states.[12] Therefore, in the area of election administration, the VRS can have advantages over even official statistics.

Finally, it should be noted that because of its large sample size and geographic coverage, the VRS is the source of some of the most important work in the field of political science about issues of voter turnout and registration. For instance, the classic book *Who Votes?*,[13] which is the touchstone for modern research into the subject of voter participation, relied almost exclusively on data from the VRS.

Survey of the Performance of American Elections

The Survey of the Performance of American Elections (SPAE) is a national study of election administration from the perspective of voters. It has been administered following the 2008 and 2012 national elections. In each election, the survey was administered to 200 respondents in each state (the District of Columbia was added in 2012) via the Internet by the online polling firm Polimetrix/YouGov. Data from the SPAE is available for download through the Harvard Dataverse.[14] I was part of the research team that developed the SPAE in 2008, and was the sole principal investigator in 2012.

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[10] On over-reporting generally see Brian D. Silver, Barbara A Anderson, and Paul R. Abramson, "Who overreports voting?" *American Political Science Review* 80 (1986): 613–624.
[11] Aram Hur and Christopher Achen, "Coding Voter Turnout Responses in the Current Population Survey," *Public Opinion Quarterly* 77 (2013): 985–993.
[12] Barry C. Burden, "Registration and Voting: A View from the Top," in *Measuring American Democracy*, Barry C. Burden and Charles Stewart III, eds., New York: Cambridge University Press, forthcoming.
[13] Raymond E. Wolfinger and Stephen Rosenstone, *Who Votes?* New Haven: Yale University Press, 1980.
[14] http://thedata harvard.edu/dvn/dv/measuringelections/faces/study/StudyPage.xhtml?studyId=88425&versionNumber=2

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The focus on the SPAE is not *who* someone voted for, but the experience of the voter when he or she cast a vote. Questions include whether the respondent encountered any problems with their registration and how long the respondent waited in line to vote.

Like the VRS, the SPAE is a survey, and therefore there is undoubtedly an inflation of voting rates due to social desirability bias. However, the SPAE is not being used here to gauge turnout levels, but rather to provide estimates of how long voters waited in line to vote, and what times of day they went to the polls. It is unclear what the socially desirable answers to such questions would be, and therefore I do not believe that this problem likely infects the SPAE, as used in this report.

Exhibit 20. Racial and ethnic composition of 2012 snapshot file.

a. Race	Number	Pct.
Asian	59,678	0.9%
Black	1,492,839	22.5%
Indian/Nat. Amer.	53,485	0.8%
Mixed	37,533	0.6%
Other	128,778	1.9%
Unknown	148,042	2.2%
White	4,728,853	71.1%
Total	6,649,208	100.0%

b. Ethnicity	Number	Pct.
Hispanic/Latino	113,782	1.7%
Not Hispanic/Latino	5,327,963	80.1%
Unclassified	1,207,463	18.2%
Total	6,649,208	100.0%

Exhibit 21. Turnout and registration, by party, 2006–2012
(Source: State-provided 2012 snapshot and voter history files)

a. Turnout

Year	Democrat	Republican	Libertarian	Unaffiliated	Total
2006	986,161	749,153	10	290,618	2,025,942
2008	2,062,828	1,431,044	3,478	866,144	4,363,494
2010	1,234,639	985,546	3,137	480,645	2,703,967
2012	2,009,593	1,494,575	12,050	1,028,962	4,545,180

b. Registration

Year	Democrat	Republican	Libertarian	Unaffiliated	Total
2006	2,532,812	1,922,928	—	1,110,509	5,566,249
2008	2,866,668	2,002,415	3,637	1,392,010	6,264,730
2010	2,769,336	1,958,509	9,252	1,463,626	6,200,723
2012	2,870,701	2,052,256	19,321	1,706,930	6,649,208

Exhibit 22. Turnout and registration, by race, 2006–2012
(Source: State-provided 2012 snapshot and voter history files)

a. Turnout

Year	Black	White	Other	Total
2006	318,271	1,662,425	45,246	2,025,942
2008	975,413	3,191,314	196,767	4,363,494
2010	543,590	2,075,139	85,238	2,703,967
2012	1,046,424	3,240,325	258,431	4,545,180

b. Registration

Year	Black	White	Other	Total
2006	1,116,818	4,248,469	200,962	5,566,249
2008	1,354,976	4,596,476	313,278	6,264,730
2010	1,339,180	4,534,617	326,926	6,200,723
2012	1,492,839	4,728,853	427,516	6,649,208

Exhibit 23. Turnout and registration, by ethnicity, 2006–2012
(Source: State-provided 2012 snapshot and voter history files)

a. Turnout

Year	Hispanic	Non-Hispanic	Total
2006	6,820	2,019,122	2,025,942
2008	43,656	4,319,838	4,363,494
2010	16,088	2,687,879	2,703,967
2012	61,516	4,483,664	4,545,180

b. Registration

Year	Hispanic	Non-Hispanic	Total
2006	33,569	5,532,680	5,566,249
2008	68,053	6,196,677	6,264,730
2010	78,689	6,122,034	6,200,723
2012	113,782	6,535,426	6,649,208

Exhibit 24. Turnout and registration, by party and race, 2006–2012
(Source: State-provided 2012 snapshot and voter history files)

a. Turnout

	Democrats			Republicans			Libertarians			Unaffiliated		
Year	Black	White	Other	Black	White	Other	Black	White	Other	Black	White	Other
2006	290,385	674,403	21,373	7,497	730,221	11,435	—	10	—	20,389	257,791	12,438
2008	862,711	1,106,198	93,919	18,759	1,378,021	34,264	230	2,846	402	93,713	704,249	68,182
2010	491,718	703,307	39,614	8,676	958,569	18,301	134	2,741	262	43,062	410,522	27,061
2012	917,567	977,717	114,309	18,487	1,432,276	43,812	986	9,667	1,397	109,384	820,665	98,913

b. Registration

	Democrats			Republicans			Libertarians			Unaffiliated		
Year	Black	White	Other	Black	White	Other	Black	White	Other	Black	White	Other
2006	945,958	1,494,490	92,364	46,622	1,831,760	44,546	—	—	—	124,238	922,219	64,052
2008	1,161,120	1,561,780	143,768	40,472	1,906,588	55,355	267	2,884	486	153,117	1,125,224	113,669
2010	1,142,899	1,480,600	145,837	38,157	1,864,241	56,111	658	7,654	940	157,466	1,182,122	124,038
2012	1,266,018	1,423,018	181,665	37,994	1,945,437	68,825	1,624	15,482	2,215	187,203	1,344,916	174,811

Exhibit 25. Turnout and registration, by party and ethnicity, 2006–2012
(Source: State-provided 2012 snapshot and voter history files)

a. Turnout

	Democrats		Republicans		Libertarians		Unaffiliated	
Year	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic
2006	3,031	983,130	2,017	747,136	1	9	1,771	288,847
2008	21,182	2,041,646	8,595	1,422,449	79	3,399	13,800	852,344
2010	7,318	1,227,321	4,022	981,524	46	3,091	4,702	475,943
2012	29,403	1,980,190	10,765	1,483,810	401	11,649	20,947	1,008,015

b. Registration

	Democrats		Republicans		Libertarians		Unaffiliated	
Year	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic	Hispanic	Non-Hispanic
2006	13,578	2,519,234	9,008	1,913,920	-	-	10,983	1,099,526
2008	30,961	2,835,707	13,713	1,988,702	95	3,542	23,284	1,368,726
2010	35,386	2,733,950	15,140	1,943,369	268	8,984	27,895	1,435,731
2012	51,221	2,819,480	19,590	2,032,666	785	18,536	42,186	1,664,744

Exhibit 26. Distribution of registration dates in 2012 snapshot file.

Two-year election cycle (year ending)	Most recent registration record		First registration record	
	Count	Pct.	Count	Pct.
Before1960	159,158	1.4%	160,901	1.4%
1960	36,054	0.3%	36,483	0.3%
1962	38,119	0.3%	38,432	0.3%
1964	87,800	0.8%	88,744	0.8%
1966	63,488	0.6%	64,107	0.6%
1968	289,862	2.6%	292,750	2.6%
1970	97,253	0.9%	98,087	0.9%
1972	169,360	1.5%	172,914	1.5%
1974	75,545	0.7%	76,990	0.7%
1976	167,498	1.5%	170,948	1.5%
1978	108,137	1.0%	110,596	1.0%
1980	247,875	2.2%	253,880	2.2%
1982	134,666	1.2%	137,555	1.2%
1984	426,992	3.8%	437,982	3.9%
1986	135,389	1.2%	138,802	1.2%
1988	394,453	3.5%	406,527	3.6%
1990	386,883	3.4%	398,794	3.5%
1992	588,193	5.2%	609,504	5.4%
1994	352,825	3.1%	366,591	3.2%
1996	904,375	8.0%	948,037	8.4%
1998	619,328	5.5%	656,977	5.8%
2000	741,895	6.5%	805,819	7.1%
2002	583,634	5.1%	648,966	5.7%
2004	1,002,600	8.8%	1,178,856	10.4%
2006	578,332	5.1%	601,354	5.3%
2008	1,374,063	12.1%	1,203,965	10.6%
2010	522,496	4.6%	422,531	3.7%
2012	1,066,387	9.4%	825,568	7.3%
Total	11,352,660	100.3%[a]	11,352,660	100.1%[a]

[a]Percentages do not sum to 100.0% because of rounding.

Exhibit 27. On the comparison of elections in North Carolina

The purpose of this report is to examine past electoral patterns in North Carolina in order to understand the likely effects of HB 589. In doing so, it is important that we be clear about which elections are being analyzed and how elections might be compared.

In the study of electoral dynamics in the United States, particularly the study of voter turnout, political scientists have focused on federal elections, that is, general elections that occur in even-numbered years. Within the set of federal elections, presidential elections have been the subject of the greatest scrutiny, because they occur on the same day across the country; the presidency is the most valued political position in America, and thus all presidential elections are competitive; turnout is high; and the candidates facing each other are usually the same in each state. Thus, if we were interested in studying a change to voter registration law, with the intention of estimating its effect on voter turnout, we would tend to focus on turnout in the presidential election years that were closest in time to the change in law. We would do this because other factors that might induce variability in turnout across time (different election calendars, varying visibility of the office, varying intensity of electoral competition, etc.) are minimized.

So-called midterm federal elections, or midterm congressional elections, are another set of elections that are often compared by political scientists. However, the factors that facilitate comparing presidential elections with each other may not be present in the midterm congressional elections. The one common factor in all midterm congressional elections is that all seats in the U.S. House of Representatives are up for election at midterm, and so there should be a House election on each ballot. However, the 435 House races that are held vary considerably in how competitive they are, and even if they have two-party competition.[15] Thus, even within a state, there can be tremendous variability in turnout across its congressional districts, due to variability in the nature of competition for U.S. House seats. In a study of the effects of changing election law on turnout, competition-induced variability in turnout is likely to exceed law-induced variability in turnout, making it difficult to draw inferences.

However, despite the fact that the turnout rate in midterm federal elections is likely to be more variable, due to the variability in competition for U.S. House seats, two other factors can intervene to make the turnout dynamics during the midterm more like presidential election years. First, thirty-nine states now hold their gubernatorial elections in the midterm year.[16] Among these states, the factors that induce turnout stability and raise turnout overall in presidential election years can apply when the governor is at the top of the ballot. Second, because of the six-year electoral cycle of U.S. Senate seats, there is also the race for the U.S. Senate at the top of the ballot in two-out-of-three midterm elections. U.S. Senate elections tend to be highly competitive, thus raising turnout and lowering turnout volatility.

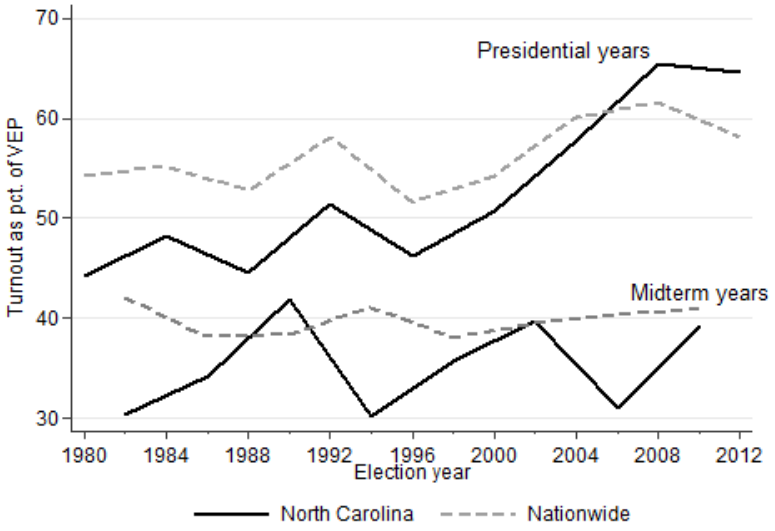
Thus, the ability to compare midterms depends very much on which state one is analyzing. In the case of North Carolina, it remains one of the 11 states that hold gubernatorial elections to coincide with the presidential election. But, like all states, the U.S. Senate seat is at the top of

[15] Some states, notably Florida, do not place U.S. House races on the ballot if they are uncontested.
[16] National Governors Association, "Governors Roster 2014: Governors' Political Affiliations & Terms of Office," http://www nga.org/files/live/sites/NGA/files/pdf/GOVLIST.PDF.

the ballot two-out-of-three midterm years. Therefore we should expect that midterm years with the U.S. Senate on the ballot to be one set of comparable elections, while the midterm years without the senator on the ballot will be another set of comparable statewide elections.

The accompanying graph bears out this analysis in the case of North Carolina. This chart graphs turnout in North Carolina since 1980, expressed as a percentage of voting eligible population (VEP), showing the national trends for comparison. The set of two lines with higher values are associated with presidential elections; the other two lines are associated with midterm congressional elections.

Voting turnout as a percent of voting-eligible population, North Carolina and nationwide, 1980–2012 (Source: United States Elections Project, elections.gmu.edu)



Nationwide turnout in presidential election years has been relatively stable during this time, with a notable shift of about five percentage points in 2004. The midterm turnout trend nationally has been virtually flat. North Carolina's turnout history has been different. First, in two decades North Carolina has moved from having a presidential turnout level well below the national average (and even below 50%), to one that is above the national average. Second, the midterm turnout levels in North Carolina are more volatile than the national trend, although the statewide average across the period has not trended upward like the presidential years. The three notable troughs in midterm turnout are associated with years when there was not a U.S. senator on the statewide ballot — 1982, 1994, and 2006.

These trends have a direct bearing on the types of comparisons that I make in this report. Presidential elections in North Carolina are consistently the highest-turnout elections in the state, suggesting the highest degree of political interest, the greatest degree of political mobilization, and the least variability in turnout across the state. The two most recent presidential elections, 2008 and 2012, had turnout levels that are similar, suggesting that the factors that might

confound an analysis of turnout and registration are at a relative minimum. Therefore, I put the greatest emphasis in this report on comparisons across presidential elections.

Turnout in North Carolina's midterm elections is clearly influenced by the presence of a U.S. Senate race at the top of the ticket. The average turnout level for the three non-Senate elections since 1980 is 31.8%, compared to 37.4% in the Senate years, which means that the electorate for Senate-year midterms is about 17.6% greater than for other midterms.[17] Clearly, public attention to midterm elections in North Carolina is less when a U.S. senator is not on the ballot, statewide mobilization of voters to the polls by all sides is less, and turnout across the state is more variable, depending on the other races on the ballot.

The two midterm elections that are part of the SEIMS election data are 2006 and 2010. (Recall that all counties did not participate in SEIMS until 2006.) The first is a non-Senate year, while 2010 is a Senate-election year. This year, 2014, will also be a U.S. Senate election year. With the Senate seat on the ballot, and the North Carolina race potentially determining partisan control of the U.S. Senate, it is reasonable to assume that the experience of 2010 is more informative about how electoral dynamics are likely to unfold in the upcoming midterm election than 2006.

[17] (37.4%-31.8%)/31.8% = 17.6%

Exhibit 28. Number of registrations submitted each for the two-year election cycle, 2002, 2004, 2006, 2008, 2010, and 2012
(Source: State-provided 2012 snapshot file)

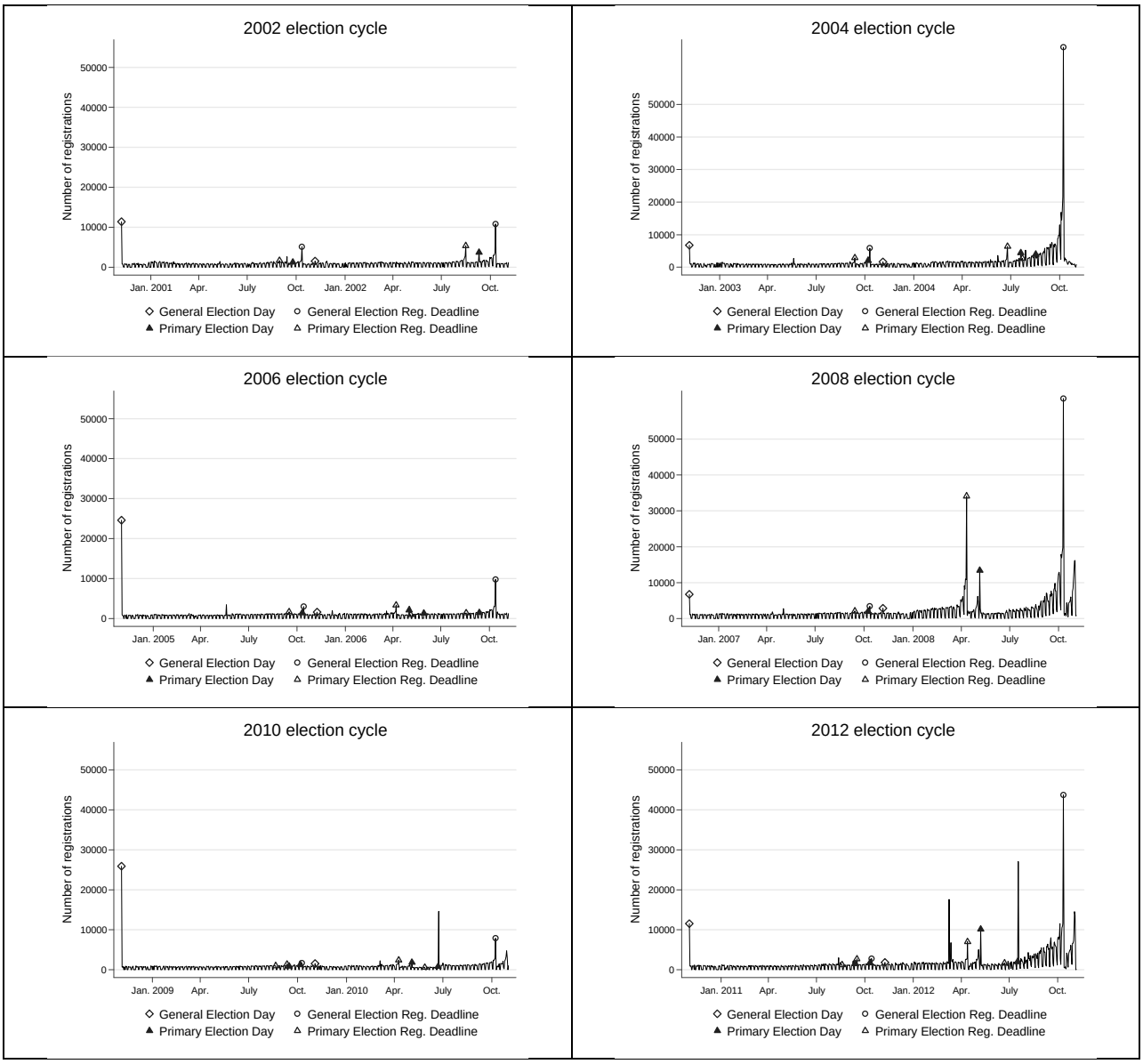


Exhibit 29. Number of registrants in the period after the Election Day registration deadline, 2002–2012[a]
(Source: State-provided 2012 snapshot file)

	2002			2004			2006		
	Date	Number	Pct.	Date	Number	Pct.	Date	Number	Pct.
Post-2007 same-day registration period	10/12/2002	185	0.032	10/9/2004	2,950	0.298	10/14/2006	182	0.031
	10/13/2002	50	0.009	10/10/2004	1,922	0.194	10/15/2006	66	0.011
	10/14/2002	911	0.157	10/11/2004	2,884	0.291	10/16/2006	1,677	0.285
	10/15/2002	966	0.166	10/12/2004	2,328	0.235	10/17/2006	1,428	0.242
	10/16/2002	846	0.146	10/13/2004	2,480	0.251	10/18/2006	1,185	0.201
	Subtotal	2,958	0.510		12,564	1.270		4,538	0.771
	10/17/2002	898	0.155	10/14/2004	1,603	0.162	10/19/2006	1,053	0.179
	10/18/2002	980	0.169	10/15/2004	1,458	0.147	10/20/2006	1,212	0.206
	10/19/2002	57	0.010	10/16/2004	895	0.090	10/21/2006	85	0.014
	10/20/2002	53	0.009	10/17/2004	895	0.090	10/22/2006	39	0.007
	10/21/2002	951	0.164	10/18/2004	1,618	0.163	10/23/2006	1,113	0.189
	10/22/2002	907	0.156	10/19/2004	1,791	0.181	10/24/2006	1,031	0.175
	10/23/2002	870	0.150	10/20/2004	1,621	0.164	10/25/2006	973	0.165
	10/24/2002	860	0.148	10/21/2004	1,224	0.124	10/26/2006	974	0.165
	10/25/2002	933	0.161	10/22/2004	1,402	0.142	10/27/2006	1,181	0.201
	10/26/2002	104	0.018	10/23/2004	826	0.083	10/28/2006	54	0.009
	10/27/2002	39	0.007	10/24/2004	1,213	0.123	10/29/2006	32	0.005
	10/28/2002	944	0.163	10/25/2004	803	0.081	10/30/2006	1,222	0.207
	10/29/2002	901	0.155	10/26/2004	837	0.085	10/31/2006	1,109	0.188
	10/30/2002	890	0.153	10/27/2004	789	0.080	11/1/2006	1,042	0.177
	10/31/2002	995	0.171	10/28/2004	913	0.092	11/2/2006	1,078	0.183
	11/1/2002	1,160	0.200	10/29/2004	1,013	0.102	11/3/2006	1,401	0.238
	11/2/2002	244	0.042	10/30/2004	351	0.035	11/4/2006	121	0.021
	Subtotal	11,786	2.030		19,252	1.945		13,720	2.330
	11/3/2002	49	0.008	10/31/2004	32	0.003	11/5/2006	35	0.006
	11/4/2002	1,215	0.209	11/1/2004	846	0.085	11/6/2006	1,255	0.213
	Subtotal	1,264	0.218		878	0.089		1,290	0.219
	Total	16,008	2.758		32,694	3.304		19,548	3.319

(Continued)

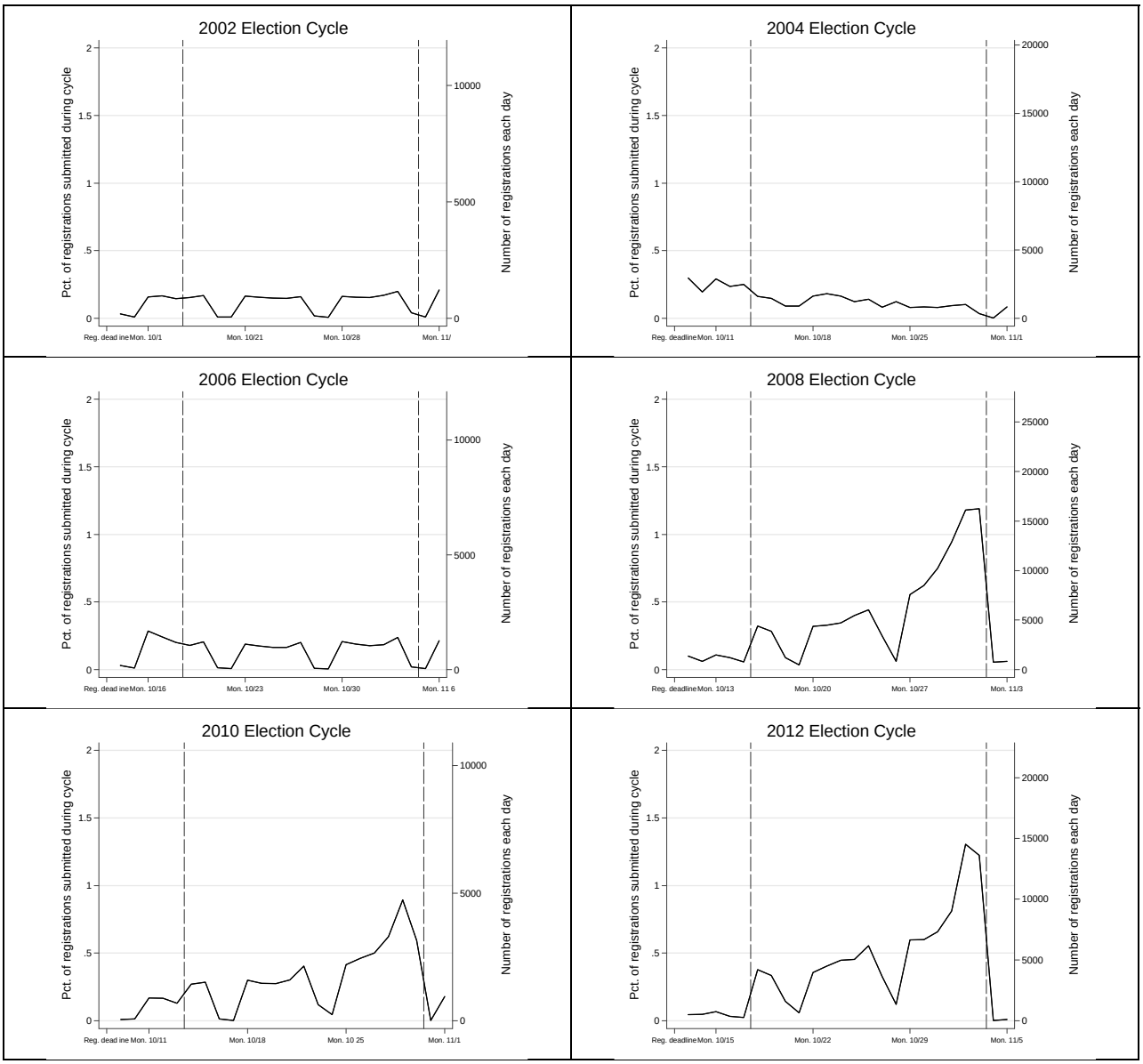
Exhibit 29. Number of registrants in the period after the Election Day registration deadline, 2002–2012[a] (continued)

	2008			2010			2012		
	Date	Number	Pct.	Date	Number	Pct.	Date	Number	Pct.
	10/11/2008	1,371	0.100	10/9/2010	50	0.009	10/13/2012	503	0.045
	10/12/2008	830	0.061	10/10/2010	71	0.013	10/14/2012	527	0.047
	10/13/2008	1,468	0.108	10/11/2010	891	0.168	10/15/2012	746	0.067
	10/14/2008	1,222	0.090	10/12/2010	878	0.166	10/16/2012	370	0.033
	10/15/2008	762	0.056	10/13/2010	685	0.129	10/17/2012	271	0.024
	Subtotal	5,653	0.414		2,575	0.486		2,417	0.217
Post-2007 same-day registration period	10/16/2008	4,407	0.323	10/14/2010	1,436	0.271	10/18/2012	4,204	0.378
	10/17/2008	3,868	0.283	10/15/2010	1,514	0.286	10/19/2012	3,717	0.334
	10/18/2008	1,200	0.088	10/16/2010	73	0.014	10/20/2012	1,584	0.142
	10/19/2008	474	0.035	10/17/2010	16	0.003	10/21/2012	665	0.060
	10/20/2008	4,355	0.319	10/18/2010	1,586	0.299	10/22/2012	3,967	0.357
	10/21/2008	4,475	0.328	10/19/2010	1,460	0.276	10/23/2012	4,500	0.405
	10/22/2008	4,707	0.345	10/20/2010	1,449	0.274	10/24/2012	4,974	0.447
	10/23/2008	5,443	0.399	10/21/2010	1,605	0.303	10/25/2012	5,037	0.453
	10/24/2008	6,057	0.444	10/22/2010	2,141	0.404	10/26/2012	6,179	0.555
	10/25/2008	3,384	0.248	10/23/2010	628	0.119	10/27/2012	3,632	0.326
	10/26/2008	820	0.060	10/24/2010	240	0.045	10/28/2012	1,353	0.122
	10/27/2008	7,578	0.555	10/25/2010	2,191	0.414	10/29/2012	6,657	0.598
	10/28/2008	8,499	0.623	10/26/2010	2,443	0.461	10/30/2012	6,679	0.600
	10/29/2008	10,220	0.749	10/27/2010	2,652	0.501	10/31/2012	7,329	0.659
	10/30/2008	12,867	0.943	10/28/2010	3,297	0.623	11/1/2012	9,039	0.813
	10/31/2008	16,120	1.181	10/29/2010	4,733	0.894	11/2/2012	14,529	1.306
	11/1/2008	16,245	1.190	10/30/2010	3,148	0.594	11/3/2012	13,620	1.224
	Subtotal	110,719	8.111		30,612	5.780		97,665	8.780
	11/2/2008	744	0.055	10/31/2010	12	0.002	11/4/2012	27	0.002
	11/3/2008	817	0.060	11/1/2010	951	0.180	11/5/2012	113	0.010
	Subtotal	1,561	0.114		963	0.182		140	0.013
	Total	117,933	8.639		34,150	6.449		100,222	9.009

[a]Total number of registrations across two-year election cycle

2002	580,479
2004	989,654
2006	588,954
2008	1,365,094
2010	529,575
2012	1,112,412

Exhibit 30. Percentage of registrations submitted each day following the registration deadline for the general election, 2002 –2012
(Source: State-provide 2012 snapshot file)



Note: Vertical lines in the graphs mark the same-day registration period begun after 2007.

Exhibit 31. Black and white registrants in the period after the Election Day registration deadline, by race, 2002–2012 (Source: State-provided 2012 snapshot file)

a. As a percentage of all registrants during the two-year election cycle

2002			2004			2006		
Date	Black	White	Date	Black	White	Date	Black	White
10/12/2002	0.050	0.024	10/9/2004	0.343	0.280	10/14/2006	0.010	0.034
10/13/2002	0.008	0.008	10/10/2004	0.220	0.186	10/15/2006	0.007	0.012
10/14/2002	0.142	0.156	10/11/2004	0.321	0.278	10/16/2006	0.226	0.298
10/15/2002	0.145	0.165	10/12/2004	0.232	0.233	10/17/2006	0.204	0.249
10/16/2002	0.132	0.149	10/13/2004	0.246	0.251	10/18/2006	0.214	0.200
Subtotal	0.477	0.503		1.362	1.229		0.661	0.794
10/17/2002	0.151	0.152	10/14/2004	0.130	0.172	10/19/2006	0.155	0.183
10/18/2002	0.183	0.163	10/15/2004	0.121	0.152	10/20/2006	0.209	0.203
10/19/2002	0.012	0.009	10/16/2004	0.120	0.078	10/21/2006	0.015	0.013
10/20/2002	0.007	0.009	10/17/2004	0.118	0.080	10/22/2006	0.006	0.007
10/21/2002	0.158	0.164	10/18/2004	0.207	0.147	10/23/2006	0.182	0.189
10/22/2002	0.160	0.152	10/19/2004	0.170	0.186	10/24/2006	0.167	0.179
10/23/2002	0.144	0.150	10/20/2004	0.166	0.160	10/25/2006	0.171	0.162
10/24/2002	0.134	0.152	10/21/2004	0.149	0.114	10/26/2006	0.160	0.166
10/25/2002	0.140	0.164	10/22/2004	0.198	0.120	10/27/2006	0.201	0.200
10/26/2002	0.022	0.016	10/23/2004	0.132	0.066	10/28/2006	0.011	0.007
10/27/2002	0.009	0.005	10/24/2004	0.152	0.113	10/29/2006	0.004	0.005
10/28/2002	0.163	0.164	10/25/2004	0.084	0.080	10/30/2006	0.197	0.207
10/29/2002	0.145	0.159	10/26/2004	0.089	0.081	10/31/2006	0.174	0.191
10/30/2002	0.134	0.158	10/27/2004	0.076	0.081	11/1/2006	0.168	0.178
10/31/2002	0.200	0.167	10/28/2004	0.091	0.095	11/2/2006	0.201	0.177
11/1/2002	0.206	0.196	10/29/2004	0.089	0.106	11/3/2006	0.250	0.229
11/2/2002	0.069	0.034	10/30/2004	0.055	0.029	11/4/2006	0.016	0.020
Subtotal	2.036	2.013		2.147	1.861		2.288	2.315
11/3/2002	0.011	0.008	10/31/2004	0.003	0.003	11/5/2006	0.006	0.006
11/4/2002	0.257	0.196	11/1/2004	0.067	0.092	11/6/2006	0.238	0.207
Subtotal	0.268	0.204		0.070	0.095		0.245	0.213
Total	2.781	2.719		3.579	3.185		3.194	3.321

b. Number of registrants by day

2002			2004			2006		
Date	Black	White	Date	Black	White	Date	Black	White
10/12/2002	57	106	10/9/2004	818	1,926	10/14/2006	11	153
10/13/2002	9	35	10/10/2004	524	1,284	10/15/2006	8	52
10/14/2002	162	685	10/11/2004	765	1,918	10/16/2006	248	1,330
10/15/2002	166	727	10/12/2004	553	1,605	10/17/2006	224	1,111
10/16/2002	151	656	10/13/2004	586	1,728	10/18/2006	235	892
Subtotal	545	2,209		3,246	8,461		726	3,538
10/17/2002	172	667	10/14/2004	310	1,185	10/19/2006	170	814
10/18/2002	209	717	10/15/2004	289	1,045	10/20/2006	230	906
10/19/2002	14	39	10/16/2004	287	540	10/21/2006	17	56
10/20/2002	8	39	10/17/2004	281	550	10/22/2006	7	32
10/21/2002	181	720	10/18/2004	494	1,010	10/23/2006	200	843
10/22/2002	183	669	10/19/2004	405	1,283	10/24/2006	183	796
10/23/2002	164	661	10/20/2004	395	1,105	10/25/2006	188	723
10/24/2002	153	670	10/21/2004	355	788	10/26/2006	176	739
10/25/2002	160	720	10/22/2004	471	829	10/27/2006	221	890
10/26/2002	25	70	10/23/2004	314	456	10/28/2006	12	32
10/27/2002	10	24	10/24/2004	363	780	10/29/2006	4	23
10/28/2002	186	721	10/25/2004	201	554	10/30/2006	216	921
10/29/2002	166	698	10/26/2004	212	555	10/31/2006	191	849
10/30/2002	153	694	10/27/2004	180	558	11/1/2006	185	795
10/31/2002	228	732	10/28/2004	216	651	11/2/2006	221	787
11/1/2002	235	860	10/29/2004	213	732	11/3/2006	275	1,020
11/2/2002	79	148	10/30/2004	132	199	11/4/2006	18	89
Subtotal	2,326	8,849		5,118	12,820		2,514	10,315
11/3/2002	12	35	10/31/2004	6	19	11/5/2006	7	26
11/4/2002	294	860	11/1/2004	160	633	11/6/2006	262	922
Subtotal	306	895		166	652		269	948
Total	3,177	11,953		8,530	21,933		3,509	14,801

(continued)

Exhibit 31. Black and white registrants in the period after the Election Day registration deadline, by race, 2002–2012 (Source: State-provided 2012 snapshot file) (continued)

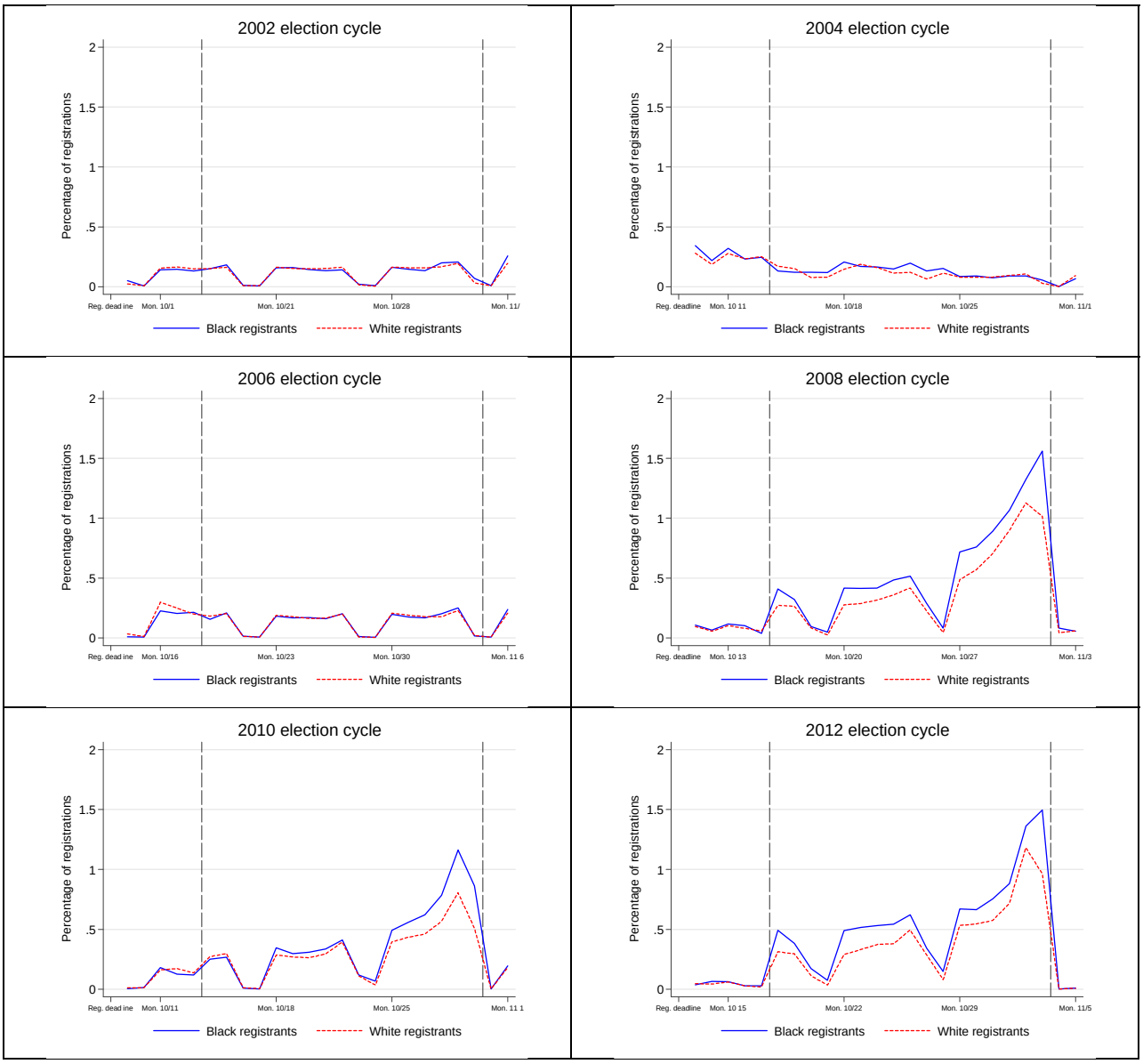
a. As a percentage of all registrants during the two-year election cycle

2008			2010			2012		
Date	Black	White	Date	Black	White	Date	Black	White
10/11/2008	0.106	0.096	10/9/2010	0.005	0.011	10/13/2012	0.036	0.046
10/12/2008	0.066	0.057	10/10/2010	0.015	0.013	10/14/2012	0.065	0.042
10/13/2008	0.116	0.103	10/11/2010	0.180	0.162	10/15/2012	0.064	0.061
10/14/2008	0.101	0.080	10/12/2010	0.126	0.172	10/16/2012	0.030	0.028
10/15/2008	0.040	0.058	10/13/2010	0.120	0.136	10/17/2012	0.029	0.019
Subtotal	0.430	0.393		0.445	0.494		0.224	0.196
10/16/2008	0.409	0.272	10/14/2010	0.250	0.273	10/18/2012	0.491	0.313
10/17/2008	0.320	0.265	10/15/2010	0.267	0.297	10/19/2012	0.381	0.296
10/18/2008	0.094	0.084	10/16/2010	0.010	0.013	10/20/2012	0.173	0.113
10/19/2008	0.048	0.025	10/17/2010	0.001	0.004	10/21/2012	0.075	0.034
10/20/2008	0.416	0.277	10/18/2010	0.346	0.285	10/22/2012	0.488	0.290
10/21/2008	0.415	0.287	10/19/2010	0.297	0.269	10/23/2012	0.517	0.330
10/22/2008	0.417	0.316	10/20/2010	0.309	0.263	10/24/2012	0.530	0.374
10/23/2008	0.484	0.360	10/21/2010	0.335	0.295	10/25/2012	0.542	0.380
10/24/2008	0.516	0.417	10/22/2010	0.412	0.394	10/26/2012	0.620	0.496
10/25/2008	0.288	0.224	10/23/2010	0.119	0.111	10/27/2012	0.342	0.287
10/26/2008	0.081	0.044	10/24/2010	0.067	0.034	10/28/2012	0.148	0.079
10/27/2008	0.718	0.487	10/25/2010	0.492	0.395	10/29/2012	0.670	0.532
10/28/2008	0.759	0.570	10/26/2010	0.560	0.434	10/30/2012	0.665	0.545
10/29/2008	0.892	0.706	10/27/2010	0.621	0.461	10/31/2012	0.755	0.575
10/30/2008	1.067	0.898	10/28/2010	0.784	0.567	11/1/2012	0.882	0.716
10/31/2008	1.324	1.127	10/29/2010	1.163	0.806	11/2/2012	1.362	1.182
11/1/2008	1.561	1.016	10/30/2010	0.862	0.509	11/3/2012	1.496	0.961
Subtotal	9.809	7.375		6.894	5.411		10.139	7.502
11/2/2008	0.082	0.043	10/31/2010	0.001	0.002	11/4/2012	0.001	0.002
11/3/2008	0.056	0.059	11/1/2010	0.195	0.179	11/5/2012	0.010	0.008
Subtotal	0.138	0.103		0.196	0.181		0.011	0.010
Total	10.376	7.870		7.536	6.086		10.374	7.708

b. Number of registrants by day

2008			2010			2012		
Date	Black	White	Date	Black	White	Date	Black	White
10/11/2008	419	797	10/9/2010	5	42	10/13/2012	112	305
10/12/2008	261	471	10/10/2010	16	49	10/14/2012	199	281
10/13/2008	459	855	10/11/2010	195	607	10/15/2012	196	404
10/14/2008	400	670	10/12/2010	136	648	10/16/2012	92	188
10/15/2008	156	482	10/13/2010	130	510	10/17/2012	90	124
Subtotal	1,695	3,275		482	1,856		689	1,302
10/16/2008	1,615	2,270	10/14/2010	270	1,026	10/18/2012	1,508	2,075
10/17/2008	1,263	2,207	10/15/2010	289	1,118	10/19/2012	1,171	1,962
10/18/2008	370	698	10/16/2010	11	48	10/20/2012	530	747
10/19/2008	188	206	10/17/2010	1	15	10/21/2012	229	227
10/20/2008	1,641	2,306	10/18/2010	374	1,070	10/22/2012	1,499	1,923
10/21/2008	1,636	2,391	10/19/2010	321	1,012	10/23/2012	1,588	2,191
10/22/2008	1,645	2,636	10/20/2010	334	990	10/24/2012	1,627	2,478
10/23/2008	1,908	2,999	10/21/2010	363	1,108	10/25/2012	1,664	2,518
10/24/2008	2,035	3,477	10/22/2010	446	1,481	10/26/2012	1,904	3,287
10/25/2008	1,138	1,867	10/23/2010	129	417	10/27/2012	1,051	1,902
10/26/2008	321	367	10/24/2010	73	129	10/28/2012	455	524
10/27/2008	2,831	4,054	10/25/2010	532	1,486	10/29/2012	2,058	3,531
10/28/2008	2,994	4,745	10/26/2010	606	1,631	10/30/2012	2,043	3,613
10/29/2008	3,519	5,880	10/27/2010	672	1,733	10/31/2012	2,318	3,816
10/30/2008	4,208	7,483	10/28/2010	848	2,131	11/1/2012	2,707	4,747
10/31/2008	5,225	9,393	10/29/2010	1,258	3,030	11/2/2012	4,181	7,840
11/1/2008	6,160	8,463	10/30/2010	933	1,913	11/3/2012	4,594	6,377
Subtotal	38,697	61,442		7,460	20,338		31,127	49,758
11/2/2008	323	362	10/31/2010	1	7	11/4/2012	3	13
11/3/2008	220	494	11/1/2010	211	673	11/5/2012	30	52
Subtotal	543	856		212	680		33	65
Total	40,935	65,573		8,154	22,874		31,849	51,125

Exhibit 32. Percentage of registrations submitted each day following the registration deadline for the general election, by race, 2002–2012
(Source: State-provided 2012 snapshot file)



Note: Vertical lines in the graphs mark the same-day registration period begun after 2007.

Exhibit 33. Black-white difference in the percentage of registrations submitted each day following the registration deadline for midterm election years
(Source: State-provided 2012 snapshot files)

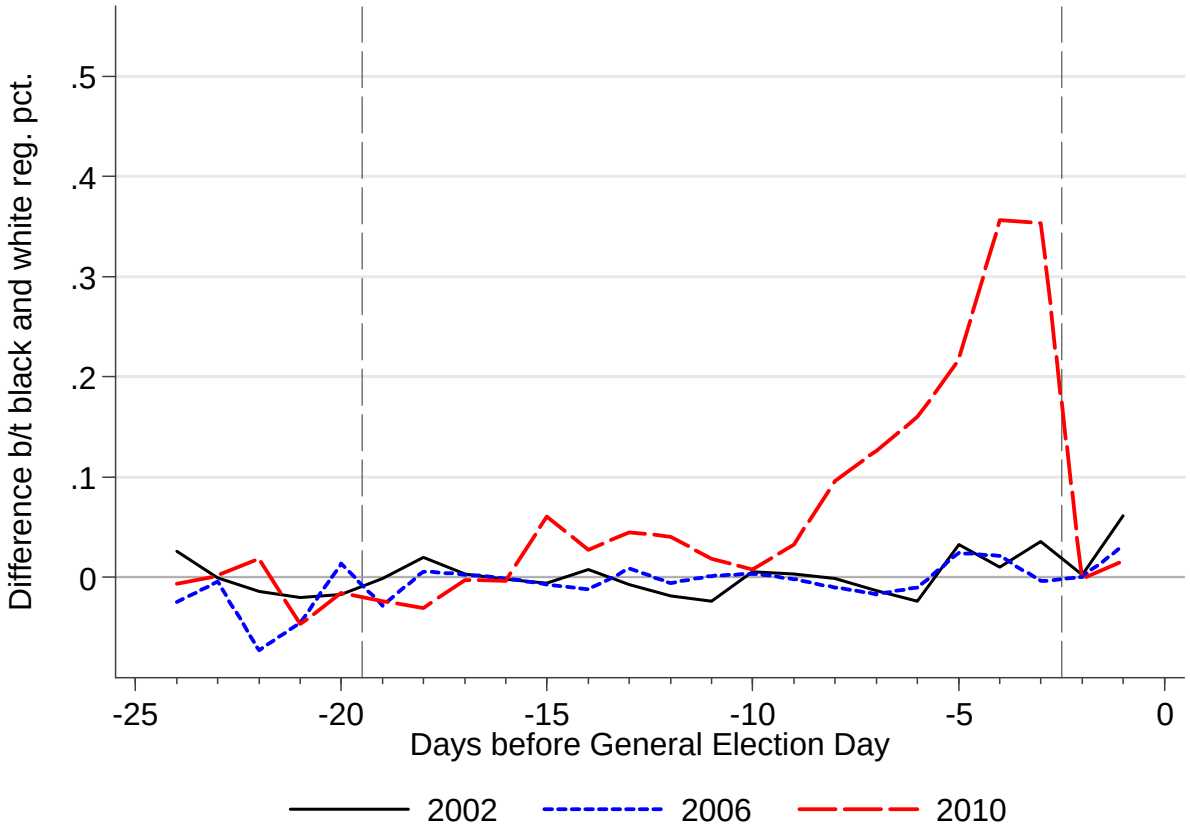


Exhibit 34. Relative frequency of Google searches for voter registration information on a weekly basis, 2012 (revised)

	Search frequency			Registrations	
Week	"voter registration"	"register to vote"	Average search frequency	Number	Normalized (Revised)
2012-01-01-2012-01-07	7	4	5.5	5651	4.8
2012-01-08-2012-01-14	8	4	6	6819	6.2
2012-01-15-2012-01-21	4	5	4.5	6357	5.6
2012-01-22-2012-01-28	7	7	7	7269	6.8
2012-01-29-2012-02-04	5	4	4.5	7098	6.6
2012-02-05-2012-02-11	5	4	4.5	6714	6.1
2012-02-12-2012-02-18	5	2	3.5	7105	6.6
2012-02-19-2012-02-25	7	3	5	6870	6.3
2012-02-26-2012-03-03	7	3	5	7603	7.2
2012-03-04-2012-03-10	7	5	6	20467	23.3
2012-03-11-2012-03-17	7	4	5.5	14457	15.8
2012-03-18-2012-03-24	6	3	4.5	8461	8.3
2012-03-25-2012-03-31	8	4	6	8638	8.5
2012-04-01-2012-04-07	9	4	6.5	7342	6.9
2012-04-08-2012-04-14	14	9	11.5	16140	17.9
2012-04-15-2012-04-21	12	8	10	5335	4.4
2012-04-22-2012-04-28	16	7	11.5	8339	8.1
2012-04-29-2012-05-05	26	14	20	17017	19.0
2012-05-06-2012-05-12	61	21	41	13173	14.2
2012-05-13-2012-05-19	3	2	2.5	5716	4.8
2012-05-20-2012-05-26	6	2	4	5196	4.2
2012-05-27-2012-06-02	5	2	3.5	4865	3.8
2012-06-03-2012-06-09	5	2	3.5	5822	5.0
2012-06-10-2012-06-16	7	2	4.5	5721	4.8
2012-06-17-2012-06-23	5	4	4.5	6404	5.7
2012-06-24-2012-06-30	8	5	6.5	6506	5.8
2012-07-01-2012-07-07	4	4	4	6900	6.3

(continued)

Exhibit 34. Relative frequency of Google searches for voter registration information on a weekly basis, 2012 (revised) (continued)

	Search frequency			Registrations	
Week	"voter registration"	"register to vote"	Average search frequency	Number	Normalized (Revised)
2012-07-08-2012-07-14	8	4	6	8730	8.6
2012-07-15-2012-07-21	10	5	7.5	33361	39.5
2012-07-22-2012-07-28	9	5	7	11514	12.1
2012-07-29-2012-08-04	8	6	7	10879	11.3
2012-08-05-2012-08-11	11	5	8	15492	17.1
2012-08-12-2012-08-18	17	11	14	17965	20.2
2012-08-19-2012-08-25	16	8	12	18460	20.8
2012-08-26-2012-09-01	20	13	16.5	23058	26.6
2012-09-02-2012-09-08	33	32	32.5	20895	23.9
2012-09-09-2012-09-15	29	21	25	29340	34.5
2012-09-16-2012-09-22	31	27	29	30902	36.4
2012-09-23-2012-09-29	53	37	45	32427	38.3
2012-09-30-2012-10-06	70	71	70.5	44300	53.2
2012-10-07-2012-10-13	83	98	90.5	81607	100.0
2012-10-14-2012-10-20	59	46	52.5	11766	12.4
2012-10-21-2012-10-27	65	43	54	28808	33.8
2012-10-28-2012-11-03	59	35	47	60569	73.6
2012-11-04-2012-11-10	100	51	75.5	27517	32.2
2012-11-11-2012-11-17	5	3	4	2748	1.1
2012-11-18-2012-11-24	3	3	3	2694	1.0
2012-11-25-2012-12-01	5	3	4	4777	3.7
2012-12-02-2012-12-08	4	2	3	4138	2.9
2012-12-09-2012-12-15	3	0	1.5	3832	2.5
2012-12-16-2012-12-22	3	0	1.5	3742	2.4
2012-12-23-2012-12-29	3	0	1.5	1857	0.0
2012-12-30-2013-01-05	4	0	2	---	---

Exhibit 35. Relative frequency of Google searches for voter registration information on a daily basis, September 1, 2012 – November 30, 2012

	Search frequency			Registrations			Search frequency			Registrations	
Day	"voter registration"	"register to vote"	Average search frequency	Number	Normalized	Day	"voter registration"	"register to vote"	Average search frequency	Number	Normalized
9/1/2012	6	0	3	1,137	2.8	10/1/2012	20	18	19	7,271	17.6
9/2/2012	7	0	3.5	693	1.7	10/2/2012	22	18	20	7,589	18.4
9/3/2012	7	5	6	934	2.3	10/3/2012	20	21	20.5	7,071	17.2
9/4/2012	9	8	8.5	5,188	12.6	10/4/2012	33	42	37.5	7,835	19.0
9/5/2012	11	11	11	4,542	11.0	10/5/2012	25	25	25	10,792	26.2
9/6/2012	14	17	15.5	4,081	9.9	10/6/2012	16	21	18.5	2,612	6.3
9/7/2012	20	14	17	4,079	9.9	10/7/2012	17	16	16.5	1,245	3.0
9/8/2012	10	8	9	1,378	3.3	10/8/2012	23	22	22.5	7,624	18.5
9/9/2012	7	7	7	798	1.9	10/9/2012	34	35	34.5	9,811	23.8
9/10/2012	11	7	9	5,464	13.3	10/10/2012	31	33	32	10,338	25.1
9/11/2012	12	8	10	5,275	12.8	10/11/2012	26	32	29	10,881	26.4
9/12/2012	9	7	8	5,922	14.4	10/12/2012	44	56	50	41,223	100.0
9/13/2012	11	6	8.5	4,733	11.5	10/13/2012	16	16	16	485	1.2
9/14/2012	10	8	9	4,915	11.9	10/14/2012	9	7	8	500	1.2
9/15/2012	6	7	6.5	2,233	5.4	10/15/2012	22	14	18	849	2.1
9/16/2012	7	5	6	713	1.7	10/16/2012	20	14	17	456	1.1
9/17/2012	8	7	7.5	6,310	15.3	10/17/2012	27	25	26	438	1.1
9/18/2012	11	11	11	7,422	18.0	10/18/2012	26	20	23	4,193	10.2
9/19/2012	14	10	12	4,915	11.9	10/19/2012	24	15	19.5	3,795	9.2
9/20/2012	11	10	10.5	4,779	11.6	10/20/2012	14	8	11	1,535	3.7
9/21/2012	11	6	8.5	5,249	12.7	10/21/2012	12	7	9.5	630	1.5
9/22/2012	9	7	8	1,514	3.7	10/22/2012	28	12	20	4,051	9.8
9/23/2012	5	8	6.5	870	2.1	10/23/2012	29	27	28	4,467	10.8
9/24/2012	17	12	14.5	6,291	15.3	10/24/2012	22	17	19.5	4,971	12.1
9/25/2012	23	17	20	6,450	15.6	10/25/2012	27	15	21	4,958	12.0
9/26/2012	23	17	20	5,792	14.0	10/26/2012	22	14	18	6,198	15.0
9/27/2012	16	16	16	5,492	13.3	10/27/2012	13	6	9.5	3,533	8.6
9/28/2012	17	7	12	5,305	12.9	10/28/2012	10	9	9.5	1,342	3.3
9/29/2012	13	9	11	2,227	5.4	10/29/2012	15	13	14	6,615	16.0
9/30/2012	11	13	12	1,130	2.7	10/30/2012	19	10	14.5	6,721	16.3
				7,271	17.6	10/31/2012	13	11	12	7,268	17.6

(continued)

Exhibit 35. Relative frequency of Google searches for voter registration information on a daily basis, September 1, 2012 – November 30, 2012 (continued)

	Search frequency			Registrations	
Day	"voter registration"	"register to vote"	Average search frequency	Number	Normalized
11/1/2012	18	9	13.5	9,161	22.2
11/2/2012	28	21	24.5	15,079	36.6
11/3/2012	25	17	21	14,383	34.9
11/4/2012	9	17	13	18	0.0
11/5/2012	56	27	41.5	527	1.3
11/6/2012	100	53	76.5	24,240	58.8
11/7/2012	18	5	11.5	1,509	3.7
11/8/2012	5	0	2.5	551	1.3
11/9/2012	0	0	0	664	1.6
11/10/2012	0	0	0	8	0.0
11/11/2012	0	0	0	12	0.0
11/12/2012	0	0	0	38	0.1
11/13/2012	0	0	0	716	1.7
11/14/2012	0	0	0	654	1.6
11/15/2012	0	0	0	561	1.4
11/16/2012	0	0	0	716	1.7
11/17/2012	0	0	0	51	0.1
11/18/2012	0	0	0	7	0.0
11/19/2012	0	0	0	861	2.1
11/20/2012	0	0	0	914	2.2
11/21/2012	0	0	0	903	2.2
11/22/2012	0	0	0	1	0.0
11/23/2012	0	0	0	4	0.0
11/24/2012	0	0	0	4	0.0
11/25/2012	0	0	0	2	0.0
11/26/2012	0	0	0	1,048	2.5
11/27/2012	0	0	0	828	2.0
11/28/2012	0	0	0	825	2.0
11/29/2012	0	0	0	990	2.4
11/30/2012	0	0	0	1,068	2.6

Exhibit 36. Share of North Carolina voters reporting they voted in-person on General Election Day, early, and by mail-in absentee ballot.
(Source: U.S. Census Bureau, Voting and Registration Supplement, Current Population Survey, various years.)

	Percent		
Year	Election Day	Early	By-mail absentee
1996	96.3	1.0	2.6
1998	96.8	0.1	3.1
2000	89.3	8.1	2.7
2002	93.0	5.0	2.0
2004	71.5	23.8	4.8
2006	86.0	11.6	2.5
2008	45.7	48.7	5.7
2010	69.2	28.6	2.2
2012	42.4	53.2	4.4

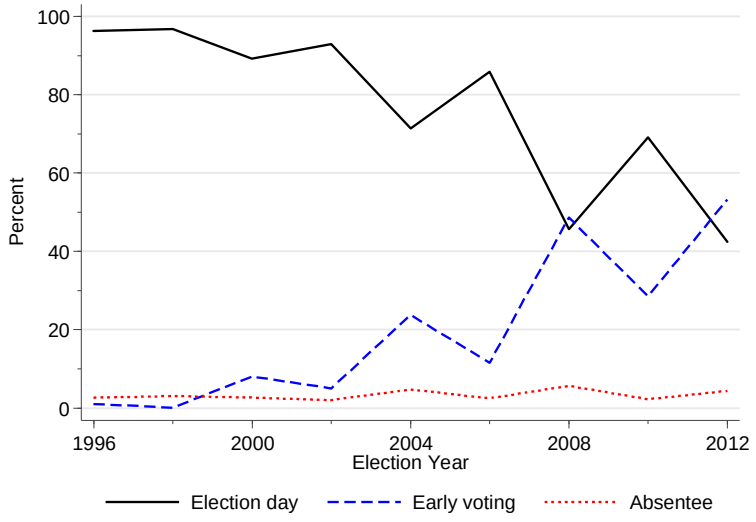


Exhibit 37. Share of North Carolina voters who voted in-person on General Election Day, early, and by mail-in absentee ballot.
(Source: State-provided voter history file)

	Percent		
Year	Election Day	Early	By-mail absentee
2006	79.2	19.2	1.7
2008	39.2	55.5	5.2
2010	64.4	33.5	2.1
2012	38.9	56.3	4.8

Exhibit 38. Distribution of early voting across North Carolina counties, 2006, 2008, 2010, and 2012
(Source: State-provided voter history file)

	Percent					Percent			
County	2006	2008	2010	2012	County	2006	2008	2010	2012
Alamance	23.4	50.6	41.5	51.7	Johnston	9.5	49.4	30.4	52.8
Alexander	25.7	48.3	37.0	51.5	Jones	9.5	40.9	22.3	42.6
Alleghany	3.5	55.0	49.2	59.0	Lee	26.1	71.0	49.5	67.0
Anson	24.8	52.8	34.4	55.7	Lenoir	20.3	63.8	46.8	65.5
Ashe	20.9	40.3	34.0	42.0	Lincoln	9.1	49.0	28.2	50.2
Avery	14.6	25.0	20.0	28.0	Macon	41.0	54.9	45.4	54.6
Beaufort	18.8	48.4	35.4	55.5	Madison	28.2	50.6	41.1	51.7
Bertie	19.9	60.3	36.7	58.0	Martin	10.9	46.9	28.5	45.5
Bladen	20.7	62.9	50.0	61.1	McDowell	30.7	58.0	41.8	54.1
Brunswick	31.5	66.1	53.8	66.4	Mecklenburg	18.6	50.2	28.7	55.4
Buncombe	35.6	67.3	42.6	64.9	Mitchell	22.1	48.6	44.0	53.5
Burke	19.6	60.8	34.7	58.6	Montgomery	9.2	36.4	20.8	36.7
Cabarrus	12.4	38.0	25.5	43.6	Moore	13.1	56.0	23.3	52.8
Caldwell	27.9	59.6	42.6	63.0	Nash	14.0	63.5	38.4	61.4
Camden	27.4	54.9	36.3	49.4	New Hanover	13.8	53.2	32.9	57.8
Carteret	26.4	54.7	38.4	56.0	Northampton	5.6	48.9	28.6	54.1
Caswell	9.5	46.6	31.1	48.4	Onslow	16.9	58.5	33.0	53.4
Catawba	27.3	60.7	37.3	55.7	Orange	19.8	69.1	35.6	65.2
Chatham	22.6	63.0	47.3	65.5	Pamlico	33.7	66.2	41.1	60.0
Cherokee	24.0	44.3	31.8	44.4	Pasquotank	35.8	69.9	48.9	65.5
Chowan	15.9	62.0	44.0	63.7	Pender	28.1	70.0	53.7	66.1
Clay	47.1	58.3	53.3	59.7	Perquimans	20.0	55.5	40.0	54.9
Cleveland	18.5	52.0	33.8	48.2	Person	38.5	64.2	40.0	66.6
Columbus	22.4	51.1	36.8	50.0	Pitt	21.8	66.3	34.8	62.0
Craven	31.6	58.0	33.8	61.1	Polk	42.5	64.6	51.2	61.6
Cumberland	12.5	58.9	33.2	60.6	Randolph	17.4	47.7	29.4	46.0
Currituck	9.1	31.5	22.3	29.4	Richmond	17.7	59.4	38.1	52.7
Dare	20.4	47.0	29.8	39.6	Robeson	4.1	35.1	18.1	40.0
Davidson	19.2	43.3	30.0	47.8	Rockingham	12.0	52.9	30.8	52.8
Davie	17.4	54.0	35.1	53.6	Rowan	12.5	53.6	29.5	51.9
Duplin	8.9	44.1	27.6	44.7	Rutherford	32.2	56.2	35.9	54.5
Durham	8.5	71.1	30.6	69.3	Sampson	11.0	51.9	33.8	51.6
Edgecombe	9.8	68.1	35.1	65.3	Scotland	37.9	62.7	44.4	59.6
Forsyth	7.7	48.1	26.0	56.3	Stanly	24.8	57.3	34.9	54.7
Franklin	9.9	50.4	32.1	52.8	Stokes	5.6	35.1	21.1	41.7
Gaston	19.5	54.6	31.2	60.3	Surry	24.5	46.2	36.7	52.9
Gates	11.4	41.1	18.4	39.2	Swain	35.0	48.9	44.2	50.9
Graham	38.7	44.0	38.2	47.4	Transylvania	47.4	57.2	47.8	59.5
Granville	16.2	61.3	35.2	63.8	Tyrrell	14.5	50.3	36.9	48.7
Greene	15.9	56.1	38.6	57.0	Union	14.9	59.7	34.2	57.8
Guilford	16.1	60.7	32.2	63.3	Vance	19.3	62.2	48.2	66.0
Halifax	4.2	56.2	12.3	57.2	Wake	12.5	56.7	26.5	53.4
Harnett	15.7	46.9	31.8	51.1	Warren	15.4	56.9	36.8	61.4
Haywood	29.2	52.3	38.2	51.9	Washington	19.1	53.3	37.8	58.1
Henderson	31.7	55.8	47.4	56.9	Watauga	34.4	61.9	43.9	55.0
Hertford	8.6	64.1	19.9	56.4	Wayne	31.9	67.7	48.1	69.0
Hoke	28.1	58.9	40.9	59.5	Wilkes	17.4	43.0	27.1	43.2
Hyde	5.2	17.8	15.0	26.8	Wilson	16.9	62.3	45.8	61.6
Iredell	17.9	51.7	33.1	50.7	Yadkin	6.7	26.5	13.0	29.2
Jackson	30.9	54.7	40.1	54.6	Yancey	23.5	39.5	36.9	49.0

Exhibit 39. Early voting percentages for black and white North Carolina voters, 2006–2012 (Source: State-provided 2012 snapshot and voter history files)

	Percent	
Year	Black	White
2006	13.1	20.4
2008	70.9	51.0
2010	36.0	33.1
2012	70.5	51.9

Exhibit 40. Number of early voters in North Carolina, by day, 2006–2012 (Source: State-provided absentee correspondence and 2012 snapshot file, and 2006 absentee file downloaded from SBOE ftp site)

	Days before election	Number of early voters			
		2006	2008	2010	2012
Revoked period	19	16,591	116,598	35,925	166,617
	18	16,980	113,146	35,010	156,664
	17	2,157	36,909	2,654	63,950
	16	163	14,155	-	25,534
	15	18,832	139,561	44,261	155,921
	14	19,019	141,651	45,893	161,595
	13	20,213	140,636	43,306	168,802
Retained period	12	20,311	149,912	45,429	162,373
	11	20,714	161,707	62,380	182,897
	10	8,361	91,593	24,474	110,708
	9	3,418	22,925	10,116	35,964
	8	30,443	196,217	76,857	188,468
	7	31,015	198,346	87,964	168,824
	6	32,922	208,464	87,273	167,968
	5	39,762	223,537	99,114	187,697
	4	53,645	245,029	125,467	249,318
	3	37,438	209,986	79,083	202,928
Revoked period		93,955	702,656	207,049	899,083
Retained period		278,029	1,707,716	698,157	1,657,145
Total		371,984	2,410,372	905,206	2,556,228

Exhibit 41. Black and white voters who voted on each day of early voting, 2006–2012 (Source: State-provided absentee correspondence and 2012 snapshot file, and 2006 absentee file downloaded from SBOE ftp site)

a. As percentage of all voters (by race)

		Percent											
		2006			2008			2010			2012		
	Days before Election Day	Black	White	Black - White	Black	White	Black - White	Black	White	Black - White	Black	White	Black - White
Eliminated period	19	0.42	0.90	-0.48	4.32	2.19	2.13	1.11	1.40	-0.29	5.88	3.01	2.87
	18	0.36	0.94	-0.58	3.37	2.38	0.99	1.05	1.38	-0.33	4.80	3.07	1.73
	17	0.02	0.12	-0.10	1.10	0.76	0.34	0.06	0.11	-0.05	2.17	1.14	1.02
	16	0.02	0.01	0.01	0.71	0.20	0.51	0.00	0.00	0.00	1.06	0.38	0.68
	15	0.55	1.01	-0.46	4.70	2.78	1.93	1.51	1.69	-0.17	4.96	3.01	1.96
	14	0.54	1.02	-0.49	4.50	2.90	1.60	1.58	1.75	-0.17	4.81	3.21	1.59
	13	0.62	1.08	-0.46	4.28	2.94	1.34	1.39	1.68	-0.29	4.57	3.49	1.08
	Subtotal	2.53	5.08	-2.56	22.99	14.14	8.84	6.69	8.00	-1.31	28.24	17.32	10.92
Retained period	12	0.64	1.08	-0.44	4.27	3.21	1.06	1.53	1.74	-0.20	4.15	3.44	0.71
	11	0.54	1.12	-0.58	4.45	3.51	0.94	2.04	2.40	-0.36	4.45	3.93	0.52
	10	0.23	0.45	-0.22	2.93	1.82	1.11	0.92	0.90	0.02	3.12	2.19	0.93
	9	0.16	0.17	0.00	0.92	0.38	0.54	0.62	0.31	0.31	1.24	0.61	0.62
	8	1.04	1.60	-0.56	5.78	4.14	1.64	2.85	2.87	-0.02	4.73	4.01	0.72
	7	1.01	1.64	-0.64	5.18	4.39	0.79	3.33	3.27	0.06	3.99	3.66	0.33
	6	1.08	1.74	-0.65	5.21	4.66	0.55	3.62	3.15	0.47	3.98	3.61	0.37
	5	1.39	2.08	-0.69	5.57	4.98	0.59	4.29	3.52	0.76	4.31	4.07	0.24
	4	1.89	2.80	-0.92	6.27	5.39	0.88	5.81	4.34	1.48	5.95	5.27	0.68
	3	1.58	1.90	-0.32	6.70	4.15	2.55	4.17	2.59	1.59	6.20	3.73	2.46
	Subtotal	9.56	14.58	-5.03	47.29	36.63	10.66	29.18	25.07	4.11	42.12	34.52	7.60
	Total	12.08	19.67	-7.58	70.28	50.77	19.51	35.88	33.08	2.80	70.36	51.85	18.52

b. Number of voters

		Numbers							
		2006		2008		2010		2012	
	Days before Election Day	Black	White	Black	White	Black	White	Black	White
Eliminated period	19	1,334	15,017	42,097	69,901	6,051	29,092	61,530	97,595
	18	1,135	15,591	32,876	75,977	5,696	28,620	50,228	99,608
	17	67	2,058	10,777	24,283	312	2,276	22,678	37,074
	16	49	113	6,955	6,354	-	-	11,073	12,410
	15	1,766	16,800	45,893	88,614	8,232	34,973	51,936	97,457
	14	1,708	17,019	43,927	92,592	8,571	36,337	50,281	104,132
	13	1,978	17,919	41,705	93,686	7,531	34,815	47,833	113,091
	Subtotal	8,037	84,517	224,230	451,407	36,393	166,113	295,559	561,367
Retained period	12	2,029	17,976	41,652	102,429	8,328	36,039	43,413	111,348
	11	1,720	18,677	43,390	112,029	11,069	49,740	46,566	127,394
	10	731	7,409	28,625	58,090	4,985	18,642	32,645	70,832
	9	524	2,751	9,008	12,231	3,367	6,341	12,951	19,860
	8	3,313	26,613	56,419	132,094	15,512	59,615	49,498	129,936
	7	3,208	27,332	50,495	139,988	18,097	67,771	41,769	118,664
	6	3,451	28,913	50,828	148,725	19,689	65,359	41,649	117,124
	5	4,427	34,640	54,378	159,047	23,303	73,120	45,119	131,778
	4	6,006	46,624	61,138	171,886	31,604	89,978	62,261	170,701
	3	5,016	31,523	65,341	132,362	22,673	53,662	64,856	120,975
	Subtotal	30,425	242,458	461,274	1,168,881	158,627	520,267	440,727	1,118,612
	Total	38,462	326,975	685,504	1,620,288	195,020	686,380	736,286	1,679,979

Note: The percentages in subtable a are calculated with the total turnout (by race) for the particular year as the denominator. For instance, a total of 318,271 blacks voted in the 2006 general election. Of these, 1,334 voted on the first day of early voting. This represents 0.42% of all blacks who voted in 2006. This is the very first number reported for black voters in 2006 in subtable a.

Exhibit 42. Reported voting wait times in 2008 and 2012
(Source: Survey of the Performance of American Elections.)

	2008					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	44.2%	33.3%	48.5%	20.2%	4.3	-13.1
Less than 10 minutes	27.4%	28.0%	16.0%	24.1%	-11.3	-3.9
10-30 minutes	15.9%	20.4%	16.5%	24.2%	0.5	3.8
30 min. - 1 hr.	8.5%	11.4%	14.8%	21.5%	6.3	10.2
More than 1 hr.	4.0%	7.0%	4.2%	10.0%	0.2	3.1
N	6,132	1,646	68	95		

	2012					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	39.6%	39.1%	31.5%	25.7%	-8.1	-13.4
Less than 10 minutes	32.2%	28.5%	38.7%	26.3%	6.5	-2.2
10-30 minutes	18.4%	19.1%	24.9%	25.5%	6.6	6.4
30 min. - 1 hr.	7.5%	9.8%	4.9%	21.0%	-2.6	11.2
More than 1 hr.	2.3%	3.5%	0.0%	1.5%	-2.3	-2.0
N	6,033	1,646	80	91		

	Combined					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	41.9%	36.2%	39.3%	22.9%	-2.6	-13.3
Less than 10 minutes	29.8%	28.2%	28.3%	25.1%	-1.5	-3.1
10-30 minutes	17.1%	19.8%	21.0%	24.8%	3.9	5.1
30 min. - 1 hr.	8.0%	10.6%	9.5%	21.3%	1.5	10.7
More than 1 hr.	3.2%	5.2%	1.9%	5.8%	-1.2	0.6
N	12,165	3,292	148	186		

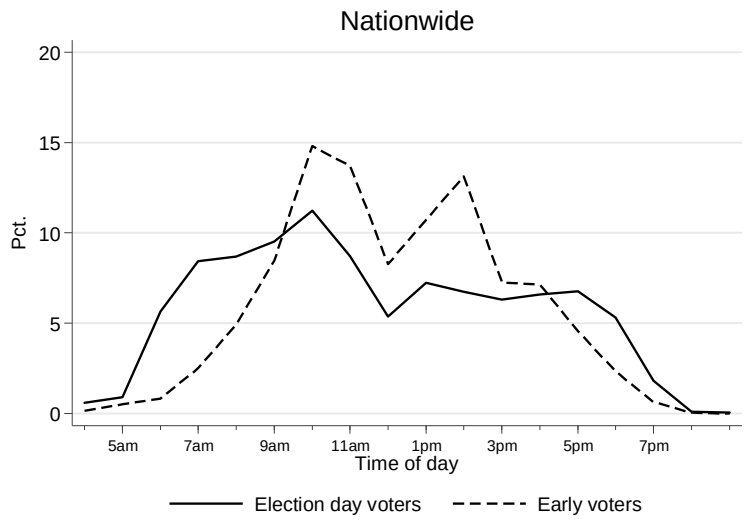
Exhibit 43. Analysis of the time-of-day when in-person voters go to the polls using responses to the Survey of the Performance of American Elections

In this analysis I use survey research data to illustrate national trends about when voters go to the polls.

All in-person voters who participated in the Survey of the Performance of American Elections were asked what time of day they went to the polls.[18] The response categories were one-hour blocs, starting with the 5:00 a.m. – 5:59 a.m. bloc, ending with the 8:00 p.m. – 8:59 p.m. bloc.

The graph below shows the distribution of the time-of-day when Election Day voters (solid line) and early voters (dashed line) reported going to the polls in 2012. Note that early voters tend to vote most often in the mid-morning and mid-afternoon. Election Day voters are more distributed throughout the day. As a consequence, the turnout pattern has a relatively large number of voters (compared to early voting) in the periods right before and after the 9-to-5 work day. Finally, for both sets of voters, after the morning surge, there is a gradual decline in voters throughout the day. For both early and Election Day voters, more people vote before noon than after noon.

Voting times for Election Day and early voters (Source: Survey of the Performance of American Elections, 2012)

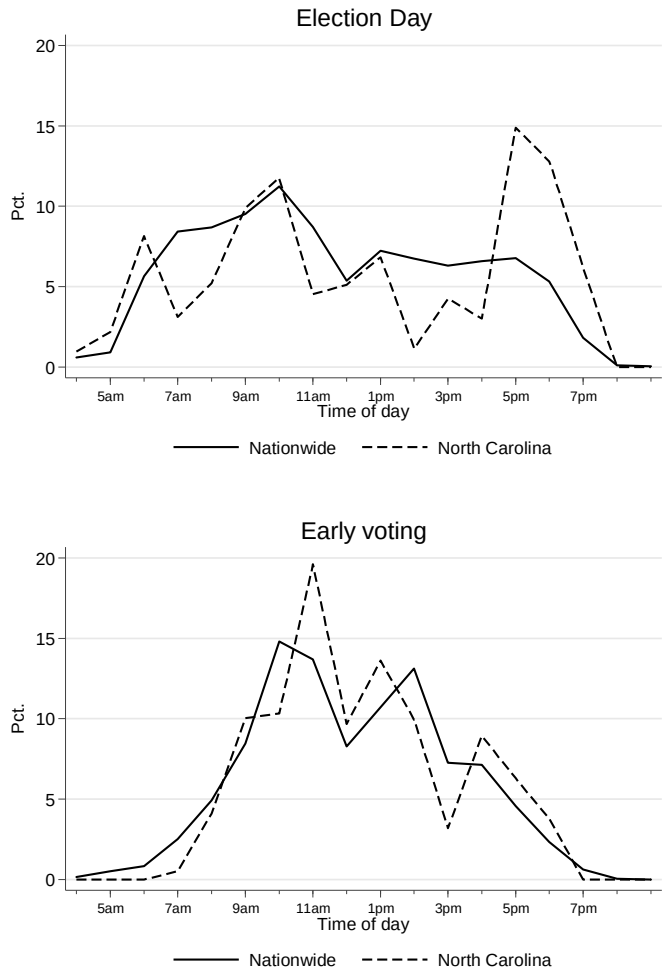


North Carolina voters generally fit the mold of voters nationwide in 2012. This is demonstrated by the following two graphs, which compare the time of day when Election Day voters (upper panel) and early voters (lower panel) went to the polls, according to responses to the SPAE. In

[18] The exact wording of the question was "What time was it when you went to vote, that is, when you first arrived at the polling place and got in line?

each graph, the solid line reports the distribution of voting times for the nationwide sample, while the dashed lines report the distribution for North Carolinians in the study.[19]

Voting times for Election Day voters, nationwide and North Carolina. (Source: Survey of the Performance of American Elections, 2012)



[19] I also tested whether the distribution of early voting times reflected in the SPAE responses differed statistically from the voting times reflected in the state-provided absentee correspondence file. The most straightforward test of this is to perform a regression in which the fraction of voters in a time period in the SPAE dataset is compared to the fraction of voters in a time period in the absentee correspondence file. When I conducted that regression, the intercept coefficient was 0.46 (s.e. = 1.15) and the slope coefficient was 0.92 (s.e. = 0.15). A *t*-test of whether the intercept coefficient was statistically different from zero failed at the $p = .70$ level (*t*-statistic = 0.40). A *t*-test of whether the slope coefficient was statistically different from one failed at the $p = .70$ level (*t*-statistic = .53). Therefore, I cannot reject the null hypothesis that the time distribution of early voting respondents to the SPAE from North Carolina is the same as the time distribution of the actual population of early voters.

Exhibit 44. Results of counterfactual simulation, to estimate whether current early voting sites could accommodate the "no lost hours" provision of HB 589

		Hours added by new uniform closing times		
County	Hours from revoked period to be accommodated	5:00 p.m.	7:00 p.m.	9:00 p.m.
Alamance	130	35	102	**180**
Alexander	50	8	36	**64**
Alleghany	50	8	36	**64**
Anson	50	4	18	44
Ashe	52	8	30	52
Avery	45	0	24	**48**
Beaufort	78	0	8	16
Bertie	87.5	12	48	**96**
Bladen	100	**240**	**288**	**384**
Brunswick	364.5	210	346	**566**
Buncombe	884	504	756	**1260**
Burke	135	0	72	**144**
Cabarrus	42.5	**45**	**69**	**93**
Caldwell	108	0	56	**112**
Camden	45	0	24	**48**
Carteret	140	**192**	**192**	**192**
Caswell	45	0	24	**48**
Catawba	110	16	48	104
Chatham	166	60	72	84
Cherokee	54	10	26	54
Chowan	45	0	24	**48**
Clay	51	8	36	**64**
Cleveland	55	20	31	51
Columbus	78.5	**216**	**240**	**264**
Craven	224	32	96	208
Cumberland	381	256	358	**514**
Currituck	45	0	24	**48**
Dare	82.5	**120**	**192**	**264**
Davidson	117	70	**129**	**223**
Davie	45	**80**	**119**	**183**
Duplin	40	12	36	**60**
Durham	395.5	98	224	350
Edgecombe	196	88	152	**264**
Forsyth	153	**202**	**320**	**438**
Franklin	93	60	84	**108**
Gaston	169	68	148	**228**
Gates	48	16	39	**67**
Graham	42.5	4	30	**56**
Granville	87	2	48	**100**
Greene	47	4	26	**48**
Guilford	817.5	564	**870**	**1386**

County	Hours from revoked period to be accommodated	Hours added by new uniform closing times		
		5:00 p.m.	7:00 p.m.	9:00 p.m.
Halifax	141	14	92	**170**
Harnett	78	0	24	48
Haywood	85	0	48	**96**
Henderson	147.5	108	**168**	**264**
Hertford	82.5	**110**	**138**	**166**
Hoke	79	**80**	**108**	**136**
Hyde	40	18	**42**	**66**
Iredell	53	**58**	**111**	**185**
Jackson	180	180	**276**	**404**
Johnston	181	148	**188**	**228**
Jones	45	0	24	**48**
Lee	90	8	60	**112**
Lenoir	170	19	121	**223**
Lincoln	99	23	70	**140**
Macon	54	10	26	54
Madison	147	102	114	126
Martin	45	0	24	**48**
McDowell	138	66	132	**198**
Mecklenburg	1065	804	888	972
Mitchell	90	0	48	**96**
Montgomery	42.5	0	24	**48**
Moore	59	**149**	**215**	**297**
Nash	98	49	86	**152**
New Hanover	192	56	168	**280**
Northampton	122.5	39	117	**195**
Onslow	108	2	64	**128**
Orange	215	195	**261**	**327**
Pamlico	62	2	18	46
Pasquotank	45	0	24	**48**
Pender	225	60	120	**240**
Perquimans	45	0	24	**48**
Person	85	25	67	**109**
Pitt	197	128	192	**256**
Polk	112.5	96	**120**	**144**
Randolph	127.5	15	81	**147**
Richmond	71.5	46	**81**	**135**
Robeson	142	96	**150**	**204**
Rockingham	50	25	25	25
Rowan	124	120	**220**	**344**
Rutherford	95.5	40	72	**136**
Sampson	139	**171**	**197**	**223**
Scotland	45	0	24	**48**
Stanly	52.5	**91**	**99**	**107**
Stokes	42.5	10	34	**58**

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County	Hours from revoked period to be accommodated	Hours added by new uniform closing times		
		5:00 p.m.	7:00 p.m.	9:00 p.m.
Surry	43.75	10	34	**58**
Swain	80	48	72	**96**
Transylvania	49	22	38	**66**
Tyrrell	40	12	36	**60**
Union	247.5	146	226	**366**
Vance	85	0	52	**104**
Wake	470.5	**490**	**537**	**607**
Warren	47	8	36	**64**
Washington	42.5	0	24	**48**
Watauga	66	20	**67**	**117**
Wayne	135	104	110	116
Wilkes	40	36	**84**	**132**
Wilson	78	24	60	**108**
Yadkin	45	0	24	**48**
Yancey	45	12	22	40

Exhibit 45. Multiple regression analysis predicting the number of early voting hours in North Carolina counties, 2012

The purpose of this analysis is to explain statistically the number of hours of early voting county boards of elections chose to undertake in the 2012 presidential election.

The quantity to be explained (the "dependent variable" in social science argot) is the number of early voting hours available in each county, reflected in the epb_site_assignment_hours.txt file.[20]

The factors I used to explain the number of early voting hours were the following:

- size of the county, measured by the number of registered voters in 2012,
- partisanship of the county, measured by the vote share received by President Obama in the county in 2012,
- racial composition of the county, measured by the share of the voters in the 2012 "snapshot file" who were non-white, and
- past use of early voting, measured by the fraction of voters who voted early in 2010.

Because the dependent variable exhibits a "right skew" (that is, there are a few counties with a very large number of early voting hours, and a large number with much fewer hours), as does the number of registered voters, I took logarithms of both of these variables.[21]

The table below reports the results of my regressions. First, I report the individual (bivariate) regression results, then I report the results with all the variables entered simultaneously.

Regression results explaining the number of hours of early voting in North Carolina counties in 2012 (standard errors in parentheses)

	(1)	(2)	(3)	(4)	(5)
log(reg. voters)	0.56	—	—	—	0.54
	(0.05)				(0.05)
Obama pct.	—	1.33	—	—	1.70
		(0.63)			(0.83)
Nonwhite pct.	—	—	0.32	—	-0.74
			(0.44)		(0.57)
Early voting pct. 2010	—	—	—	-0.001	0.002
				(0.009)	(0.006)
Intercept	-0.43	4.83	5.33	5.47	-0.88
	(0.55)	(0.29)	(0.14)	(0.32)	(0.61)
Number of observations	100	100	100	100	100
R^2	.54	.04	.01	.0003	.56

[20] That data was double-checked against a spreadsheet received from the SBOE that listed all early voting sites and the hours they were open; the data file was corrected to reflect the information in this spreadsheet.
[21] See Edward R. Tufte, *Data analysis for politics and policy*, New Jersey: Prentice-Hall, 1974 for an accessible explanation and justification for this procedure.

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The main conclusion from this analysis is that the primary factor determining the number of early voting hours is the number of registered voters, with the partisanship of the county also playing a role — Democratic counties tend to have more early voting hours than Republican counties. Once we control for county size and partisan leanings, there is a negative relationship between the nonwhite population of a county and the number of available early voting hours — but this effect is not statistically significant at the 95% confidence level.

Exhibit 46. Resolution of provisional ballots, 2006–2012
(Source: State-provided provisional ballot file)

a. 2006

	Resolution			
	Not counted	Partial	Approved	Total
No Record of Registration	4,548	167	2,234	6,949
	(65.4%)	(2.4%)	(32.1%)	(99.9%[a])
Unreported Move	440	1,028	9,006	10,474
	(4.2%)	(9.8%)	(86.0%)	(100.0%)
Incorrect Precinct	101	1,166	1,848	3,115
(Out-of-precinct)	(3.2%)	(37.4%)	(59.3%)	(99.9%[a])
Previously Removed	780	41	778	1,599
	(48.8%)	(2.6%)	(48.7%)	(100.1%[a])
Jurisdiction Dispute	79	22	402	503
	(15.7%)	(4.4%)	(79.9%)	(100.0%)
Id Not Provided	16	2	62	80
	(20.0%)	(2.5%)	(77.5%)	(100.0%)
Voted During Extended Hours	4	2	29	35
	(11.4%)	(5.7%)	(82.9%)	(100.0%)
Incorrect Party	2	7	11	20
	(10.0%)	(35.0%)	(55.0%)	(100.0%)
Total	5,970	2,435	14,370	22,775
	(26.2%)	(10.7%)	(63.1%)	(100.0%)

b. 2008

	Resolution			
	Not counted	Partial	Approved	Total
No Record of Registration	22,506	609	6,445	29,560
	(76.1%)	(2.1%)	(21.8%)	(100.0%)
Unreported Move	1,106	1,044	9,454	11,604
	(9.5%)	(9.0%)	(81.5%)	(100.0%)
Incorrect Precinct	497	2,524	3,010	6,031
(Out-of-precinct)	(8.2%)	(41.9%)	(49.9%)	(100.0%)
Previously Removed	2,584	90	2,033	4,707
	(54.9%)	(1.9%)	(43.2%)	(100.0%)
Jurisdiction Dispute	339	32	943	1,314
	(25.8%)	(2.4%)	(71.8%)	(100.0%)
Id Not Provided	430	17	248	695
	(61.9%)	(2.4%)	(35.7%)	(100.0%)
Voted During Extended Hours	8	1	29	38
	(21.1%)	(2.6%)	(76.3%)	(100.0%)
Incorrect Party	6	16	27	49
	(12.2%)	(32.7%)	(55.1%)	(100.0%)
Total	27,476	4,333	22,189	53,998
	(50.9%)	(8.0%)	(41.1%)	(100.0%)

(continued)

Exhibit 46. Resolution of provisional ballots, 2006–2012 (Source: State-provided provisional ballot file) (continued)

c. 2010	Resolution			
	Not counted	Partial	Approved	Total
No Record of Registration	8,092	254	1,766	10,112
	(80.0%)	(2.5%)	(17.5%)	(100.0%)
Unreported Move	453	668	6,289	7,410
	(6.1%)	(9.0%)	(84.9%)	(100.0%)
Incorrect Precinct	296	2,629	3,127	6,052
(Out-of-precinct)	(4.9%)	(43.4%)	(51.7%)	(100.0%)
Previously Removed	1,570	27	439	2,036
	(77.1%)	(1.3%)	(21.6%)	(100.0%)
Jurisdiction Dispute	75	22	281	378
	(19.8%)	(5.8%)	(74.3%)	(99.9%[a])
Id Not Provided	62	1	49	112
	(55.4%)	(0.9%)	(43.8%)	(100.0%)
Voted During Extended Hours	9	2	122	133
	(6.8%)	(1.5%)	(91.7%)	(100.0%)
Incorrect Party	6	8	10	24
	(25.0%)	(33.3%)	(41.7%)	(100.0%)
Total	10,563	3,611	12,083	26,257
	(40.2%)	(13.8%)	(46.0%)	(100.0%)

d. 2012	Resolution			
	Not counted	Partial	Approved	Total
No Record of Registration	21,421	501	4,174	26,096
	(82.1%)	(1.9%)	(16.0%)	(100.0%)
Unreported Move	887	1,188	7,645	9,720
	(9.1%)	(12.2%)	(78.7%)	(100.0%)
Incorrect Precinct	778	3,435	3,273	7,486
(Out-of-precinct)	(10.4%)	(45.9%)	(43.7%)	(100.0%)
Previously Removed	3,628	88	1,557	5,273
	(68.8%)	(1.7%)	(29.5%)	(100.0%)
Jurisdiction Dispute	498	90	1,136	1,724
	(28.9%)	(5.2%)	(65.9%)	(100.0%)
Id Not Provided	568	11	178	757
	(75.0%)	(1.5%)	(23.5%)	(100.0%)
Voted During Extended Hours	32	1	29	62
	(51.6%)	(1.6%)	(46.8%)	(100.0%)
Incorrect Party	18	7	49	74
	(24.3%)	(9.5%)	(66.2%)	(100.0%)
Total	27,830	5,321	18,041	51,192
	(54.4%)	(10.4%)	(35.2%)	(100.0%)

[a]Percentages do not sum to 100.0% because of rounding.

Exhibit 47. Preparing racial information for provisional ballot analysis

I merged the provisional ballot file with the 2012 snapshot file, using county ID and the voter registration number as the linking variables, and then used information from the snapshot file to fill in missing racial data from the provisional voter file. In the resulting match, racial information contained in the two files was compared. (See Exhibit 48 for a comparison of racial information contained in the two files for matched records.)

For the cases in which there was racial information in both files, 93.6% of the information was the same across the two.[22] One important source of the difference in the two files was the fact that a most voters whose race was classified as "unknown" in the provisional ballot file could be assigned a race by the snapshot file. In addition, about half the cases in the provisional ballot file without racial information could be assigned to a racial category from the snapshot file.

As a consequence, I adopted the following rule for assigning race to voters who were given a provisional ballot. First, I started by keeping the racial classification used in the provisional ballot file. Then, I assigned anyone with a missing classification in the provisional voter file and anyone classified in the "unknown" category in the provisional voter to the racial category in the snapshot file. Finally, I assigned all remaining unclassified provisional voters to the "unknown" racial category.

The following table shows the distribution of voters in the provisional ballot file before and after this imputation of missing racial information in the provisional ballot file. Around half of the records with missing racial information in the provisional ballot file could be corrected by adding racial information from the 2012 snapshot file. Proportionately, slightly more of these records were allocated to a classification of "black" than to "white."[23] Overall, after the allocation, 21.7% of provisional ballots can be associated with black voters, 39.1% to white voters, while 35.4% of records still have missing racial information. If the provisional ballots with missing racial information in fact are distributed in the same proportion as the ballots *with* racial information available, we would end up allocating approximately 18,000 additional ballots to black voters and 33,000 addition ballots to white voters.[24]

[22] There were 20,545 cases that matched across the two files. The racial information was identical in 19,228 cases; 19,228/20,545==93.6%

[23] The number of provisional ballots classified as being given to a black voter grew by 132% in this matching exercise, compared to a 128% growth in ballots allocated to white voters.

[24] These estimates are arrived at this way. The table below shows that 54,542 provisional ballot records lack racial information even after using the voter files to fill in the blanks from the provisional ballot file. Of the provisional ballot records that can be assigned a race, 33.6% are black and 60.5% are white. Multiplying 54,542 by 33.6% yields an estimate of 18,326 additional ballots that were likely cast by black voters; multiplying 54,542 by 60.5% yields an estimate of an additional 32,998 ballots that were likely cast by whites.

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Racial classification of provisional ballot records, before and after adding racial information from the 2012 snapshot file.				
	Original classification		Adjusted classification	
Classification	Number	Pct.	Number	Pct.
Missing	107,051	69.4%	---	--
A	438	0.3%	862	0.6%
B	14,441	9.4%	33,463	21.7%
I	945	0.6%	2,015	1.3%
M	598	0.4%	1,044	0.7%
O	828	0.5%	1,987	1.3%
U	3,462	2.2%	54,542	35.4%
W	26,462	17.2%	60,313	39.1%
Total	154,226	100.0%	154,226	100.1%[a]

[a]Percentages do not sum to 100.0% because of rounding.

Exhibit 48. Comparison of racial codes in the state-provided provisional ballot file (2006–2012) with the 2012 snapshot file

		Race from snapshot file							
Race from p.v. file	Missing	A	B	I	M	O	U	W	Total
Missing	50,535	422	18,758	1,065	442	1,120	1,288	33,421	107,051
A	267	144	2	4	2	16	1	2	438
B	8,125	1	6,175	8	15	17	81	19	14,441
I	551	1	15	352	1	2	2	22	946
M	358	3	38	3	142	14	5	35	598
O	531	0	15	1	6	230	19	26	828
U	2,354	2	264	4	4	39	365	430	3,453
W	14,442	3	24	12	19	44	96	11,822	26,462
Total	77,163	576	25,291	1,449	631	1,482	1,857	45,777	154,226

Exhibit 49. Number of out-of-precinct ballots counted in North Carolina, by race, 2006–2012.

	Black			White			All other races			Total		
Year	Partial	Complete	Total	Partial	Complete	Total	Partial	Complete	Total	Partial	Complete	Total
2006	409	308	717	615	1,270	1,885	142	270	412	1,166	1,848	3,014
2008	727	645	1,372	1,454	1,738	3,192	343	627	970	2,524	3,010	5,534
2010	1,421	1,058	2,479	874	1,676	2,550	334	393	727	2,629	3,127	5,756
2012	1,196	883	2,079	1,782	1,967	3,749	457	423	880	3,435	3,273	6,708

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

UNITED STATES OF AMERICA, Plaintiff, v. THE STATE OF NORTH CAROLINA, *et al.*, Defendants.	Civil Action No. 1:13-CV-861

Surrebuttal of Charles Stewart III, Ph.D.

Pursuant to 28 U.S.C. § 1746, I, Charles Stewart III, make the following declaration:

1. On April 11, 2014, I filed an expert report in this case, in which I discussed the racially disparate effects that HB 589 would have on the voters of North Carolina, focusing on the provisions of that law that affected early voting, same-day registration, and out-of-precinct voting.

2. On April 25, 2014 I received from attorneys at the U.S. Department of Justice declarations by Mr. Thomas H. Fetzer, Dr. Donald Schroeder, Dr. Janet R. Thornton, and Mr. Thomas P. Trende; on April 26, 2014, I received a declaration by Dr. Thomas Brook Hofeller from U.S. DOJ attorneys.

3. In this declaration I respond to certain claims and opinions made in these declarations. I focus particularly on claims and opinions in the declarations by Dr. Thornton (the "Thornton Declaration") and Mr. Trende (the "Trende Declaration").

4. My responses may be summarized as follows:

- Opinion 1 in the Trende Declaration is largely irrelevant to providing insights into how changes to election laws affect voter registration and turnout.

- The alternative coding of early voting time spans offered in the Trende Declaration in support of Opinion 1 are minor, and result in a conclusion that is identical to that offered in my original declaration.

- The analysis offered in the Trende Declaration, which compares North Carolina with states that offer no opportunities for in-person early voting, confuses the election administration issues posed by this case.

- The analysis offered in support of Opinion 1 in the Trende Declaration is ad hoc and unrelated to the issues involved in this case, because it offers no statistical analysis concerning racial disparities that are likely to arise on account of implementing HB 589.

- The analysis offered in support of Opinion 2 of the Trende Declaration mischaracterizes the framing of the analysis in my declaration, and inappropriately assumes that if a law does not result in a reduction of registration or turnout, it has not presented an obstacle to voting.

- The analysis in support of Opinion 2 of the Trende Declaration contains a simplistic attempt at statistical analysis to account for how changes to election laws influence voter turnout. This analysis is inconsistent in method and approach with that found in the scientific literature on the topic.

- The analysis of the Trende Declaration which suggests that turnout in North Carolina grew because it has become a "target state" is not based on evidence that is regularly used in the scientific analysis of this topic.

- The Trende Declaration misrepresents the research conducted by Dr. Paul Gronke and myself into how Florida voters responded to a restriction of early voting days in 2012, by mischaracterizing voters' commitment to early voting as voters' commitment to voting at all by any method.

- The observation in the Thornton Declaration that factors other than changes to election laws may influence individuals to vote does not diminish the fact that North Carolina's election laws have an influence on voter turnout.

- The fact presented in the Thornton Declaration that census tracts with early voting sites had a statistically significantly higher percentage of African Americans among the voting age population does not undermine the conclusion that HB 589 will have a disproportionate impact on blacks compared to whites.

- The differences in average wait times for early voting in North Carolina are greater than the national average; the difference is statistically significant at traditional levels used in the social sciences.
- The Thornton Declaration mischaracterizes my analysis of the total number of early voting hours in counties, and performs an analysis that leaves an incorrect impression that she has conducted an independent analysis that is similar to my own.
- The Thornton Declaration incorrectly claims that I assume 3.0% of African-Americans will be unable to vote due to changes in the same-day-registration law.

MATTERS RELATED TO THE TRENDE DECLARATION

I. Opinion 1 in the Trende Declaration is largely irrelevant to providing insights into how changes to election laws affect voter registration and turnout.

5. The purpose of Opinion 1 of the Trende Declaration is to demonstrate that HB 589 moved North Carolina into the "mainstream of American voting laws." Leaving aside for the moment the question of whether the Trende Declaration establishes this claim, it is largely irrelevant to the issues at the core of my analysis. As I noted when I began the substantive analysis in my declaration, the report I provided was "about whether various changes to North Carolina's election laws reflected in HB 589 would create a disproportionate burden on black voters in the state." (¶ 19) The general logic of my declaration starts with the status quo before the passage of HB 589, and then considers the impact of the act on *individual voters* in North Carolina. There is no question that the provisions of HB 589 will place new obstacles before North Carolina voters. The question at hand is whether the obstacles will be disproportionately faced by African American voters. Based on the evidence I examined, the answer to this question is a clear "yes."

6. Whether the *change* in law embodied in HB 589 moves North Carolina closer to some national average is irrelevant to the question of disproportionate obstacles. North Carolina

voters are not affected by the election laws of other states. Therefore, the comparison is irrelevant. The only relevant comparison is North Carolina before and after the passage of HB 589.

7. The experience of other states may inform our understanding of the likely effects of HB 589, to the degree that other states have enacted similar changes to their laws in the past, and to the degree that we can observe how the voters in these other states were affected by changes in these laws. However, it is important to keep in mind that what matters is whether a *change* in law leads to a *change* in obstacles, not whether a state changes its laws to maintain some sort of aesthetic balance with other states.

8. As a guide to my general criticism of much of the analysis in the Trende Declaration — particularly the analysis that attempts to associate features of North Carolina's election laws with the turnout of North Carolina voters — it is important to understand the canonical way in which social scientists have been studying how voting laws affect turnout and registration rates for the past forty years.

9. The classic work on how voting laws affect turnout was written by Steven J. Rosenstone and Raymond E. Wolfinger in the late 1970s/early 1980s. The most important of their research appeared in a book, *Who Votes?*,[1] and an article, "The Effect of Registration Laws on Voter Turnout."[2] Although the book is a fuller treatment of the subject than the article, both focus on the same data: responses to the 1972 Voting and Registration Supplement (VRS) of the Current Population Survey (CPS).[3]

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[1] Raymond E. Wolfinger and Steven J. Rosenstone, *Who Votes?* New Haven: Yale University Press, 1980.
[2] Steven J. Rosenstone and Raymond E. Wolfinger. "The effect of registration laws on voter turnout." *American Political Science Review* (1978): 22-45;
[3] See ¶ 48 in my original declaration for a description of the VRS. I refer to this study as the VRS, while some refer to it as the CPS. I prefer VRS as a short hand, because it avoids confusion with the national survey conducted by the University of Michigan's Center for Political Studies (CPS), which now is more commonly referred to as the

10. The logic of their investigation is straightforward. The outcome ("dependent variable") they explore is whether a respondent to the VRS reported voting in the 1972 presidential election. The factors explored as potential causes of voting (the "independent variables") include demographics of the respondents, election laws and administrative practices in the state in which the respondents lived, and other political factors related to the respondent's state.

11. Table 1 below reprints Table 2 from their article, as an example of the type of estimation they provided.[4] The numbers under the column "probit estimate" are weighting factors that measure how influential the corresponding independent variables are in determining whether a respondent voted.[5] Positive values of the probit coefficients indicate a positive relationship between the corresponding independent variable and turnout, holding values of all other independent variables constant; negative values indicate a negative relationship. The numbers under the column "standard error" measure the precision of the coefficients, and are used to assess statistical significance.[6]

American National Election Study (ANES). Note that the references below in the Trende Declaration to the CPS are references to the VRS, not the ANES.

[4] Rosenstone and Wolfinger, "The effect of registration laws on voter turnout", p. 32.

[5] The form of statistical procedure used in this article and reported in the displayed table is called "probit analysis," which is a type of multivariate statistical procedure that is similar to linear regression, which is more commonly familiar. (*Who Votes?* contains an accessible discussion of the relationship between probit analysis and linear regression in its Appendix C.) Probit analysis is commonly used when the dependent variable is dichotomous, 0 or 1, as is the case when we study whether someone voted (1) or not (0). A challenge with probit analysis is that unlike linear regression, the probit coefficients are not directly interpretable. There is an extra step the researcher needs to perform to convert the probit coefficients into measures of how a unit change of the independent variable affects the probability that one will vote (as in this example). In the research cited here, Wolfinger and Rosenstone devote considerable attention to converting the probit coefficients to more easily interpretable probabilities.

[6] Statistical significance is established by conducting a "*t*-test," in which the coefficient is divided by the corresponding standard error. This ratio is called the "*t*-statistic." The larger the *t*-statistic, the higher the degree of confidence we have that the coefficient is statistically different from zero.

Table 1. Reprint of key table reporting statistical results of the estimation of the effects of voter registration laws on turnout, controlling for demographic factors. (Source: Rosenstone and Wolfinger, p. 32 [Table 2].)

Estimates of the Effect of Demographic Variables and Registration Laws on Turnout in 1972[a]

Variable	Probit Estimate	Standard Error
(Constant)	−2.7001	.2410
Education	.1847	.0120
Education squared	.0120	.0050
Age	.0707	.0045
Age squared	−.0006	.0001
Region	−.1371	.0413
Closing date	−.0073	.0015
Irregular office hours	−.1005	.0438
Open evening and/or Saturday	.1253	.0345
No absentee registration	−.0909	.0403
Hours polls open	.0336	.0159
Gubernatorial election	.0634	.0338

Number of cases = 7,936
Percentage of cases correctly predicted = 71.4
Log of the likelihood function = −4445.63
−2 times the log likelihood ratio = 1154.66
Degrees of freedom = 11

[a]Estimates for the variables deleted from this equation are given in Appendix D.

12. There are three important features of this analysis that bear highlighting, because they have informed subsequent analysis that builds on Wolfinger and Rosenstone's work. First, this work all proceeds from a theoretical and empirical focus on the *individual voter*. The theoretical framing device is to ask, "If a state adopts Law X, what is the probability that a 'representative citizen' will be more likely to vote?" The "representative citizen" is a theoretical construct that makes it simpler to think about how changes to laws will affect *typical* citizens.

13. Second, this research accounts for the possibility that some election laws may have more of an impact on turnout than others. Therefore, it is common to include measures of numerous election laws as independent variables in the analysis. In the case of Table 1, for instance, this article studied the effects of five election laws.[7]

[7] In addition to being interested in knowing which election laws have a greater effect on turnout, it is important to include measures of multiple laws in a multivariate study of this topic because of the problem of "spurious correlation" that is addressed in the next paragraph. The issue is that a state that adopts Law A to increase turnout may also be more prone to adopt Law B, which also increases turnout. In studying the effects of Law A, we must

14. Third, this research all assumes that election laws are not the only factors affecting whether citizens register and/or vote. As Table 1 illustrates, some of these factors are demographics, such as education, age, and region, and some are political, such as whether there was also a gubernatorial election in the respondent's state in 1972.[8] There are two major reasons for the inclusion of statistical controls like these in the study of the effects of registration laws on turnout. First, it builds a more realistic statistical model of the turnout decision, which aids in external validity, while also adding the statistical benefit of improving the "efficiency" of the estimated coefficients. Second, it helps to guard against "spurious causality." This second advantage is the more important for estimating the effect of election laws on turnout accurately, so I will say another word about it.

15. This problem of spurious causality can easily be seen with an example. It is well known that the states of the upper Midwest and Great Plains — the Dakotas, Minnesota, and Wisconsin — tend to have very high voter turnout rates. Two of these states, Minnesota and Wisconsin, have Election Day Registration (EDR); North Dakota does not have voter registration at all. It is tempting to conclude that EDR causes higher turnout, as evidenced by the high level of turnout of states that have EDR, compared to states that do not have EDR.

16. However, these states that have EDR also have average levels of education that are higher than the national average. We also know (see Table 1 above) that education is positively correlated with turning out. Therefore, it may be that states like Minnesota, Wisconsin, and North Dakota have high turnout rates because of their voter registration laws (or

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control for the presence/absence of Law B; if we do not, then some of the effects of Law B on turnout will be spuriously attributed to the presence of Law A.

[8] Note that in Table 1, education-squared and age-squared are included in the estimation, to capture curvilinear relationships between turnout and these variables. For instance, if the youngest *and* the oldest voters are less likely to vote than middle-aged voters, that curvilinear relationship needs to be captured this way.

lack thereof), or they may have high turnout rates because their voters are more highly educated than average. How do we judge which hypothesis is correct?[9]

17. Demographic controls are how social scientists adjudicate questions like this. By "controlling for" factors that *both* influence turnout *and* are correlated with the presence of the election laws we are studying, we can get an unbiased estimate of the effects of the election laws *per se,* abstracted from the confounding influence of these other factors. In general, when we control for demographic factors, the measured influence of election laws is diminished, compared to the estimates we get when we do not control for demographic factors.

18. Research since Wolfinger and Rosenstone's work has built on their pioneering efforts.[10] The empirical innovations have been several. For instance, instead of studying a specific year, some of this research has combined data from across several years of VRS studies, so that the longitudinal dynamic of the passage of election laws can be examined. As computational capacity has grown, more demographic and political controls have been added.

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[9] Although the question of whether EDR increases turnout is used here as an example, below (¶ 74) I reference research by Brians and Grofman that addresses precisely this question. The answer is that EDR does increase turnout, even in the presence of statistical controls.

[10] The scholarly literature that followed Wolfinger and Rosenstone has been vast. (Google Scholar reports that *Who Votes* has been cited 2,324 times.) To cite only the most prominent works that also use the VRS to study the influence of election laws on turnout includes the following: Craig Leonard Brians and Bernard Grofman, "When registration barriers fall, who votes? An empirical test of a rational choice model," *Public Choice* 99, no. 1-2 (1999): 161-176; Brians and Grofman, "Election day registration's effect on US voter turnout," *Social Science Quarterly* 82, no. 1 (2001): 170-183; Benjamin Highton, "Easy registration and voter turnout," *The Journal of Politics* 59, no. 2 (1997): 565-575; Highton and Wolfinger, "Estimating the effects of the National Voter Registration Act of 1993," *Political Behavior* 20, no. 2 (1998): 79-104; Stephen Knack and James White, "Election-Day registration and turnout inequality," *Political Behavior* 22, no. 1 (2000): 29-44; Jan E. Leighley and Jonathan Nagler, "Socioeconomic class bias in turnout, 1964–1988: The voters remain the same." *American Political Science Review* 86, no. 3 (1992): 725-736; Leighley and Nagler, *Who Votes Now? Demographics, Issues, Inequality, and Turnout in the United States,* Princeton, Princeton University Press, 2003; Glenn E. Mitchell and Christopher Wlezien, "The impact of legal constraints on voter registration, turnout, and the composition of the American electorate," *Political Behavior* 17, no. 2 (1995): 179-202; Jonathan Nagler, "The effect of registration laws and education on US voter turnout," *American Political Science Review* 85 (1991): 1393-1405; Eric J. Oliver, "The effects of eligibility restrictions and party activity on absentee voting and overall turnout," *American Journal of Political Science* 90 (1996): 498-513; Peverill Squire, Raymond E. Wolfinger, and David P. Glass, "Residential mobility and voter turnout," *American Political Science Review* 81 (1987): 45-65; Wolfinger, Highton, and Megan Mullin, "How postregistration laws affect the turnout of citizens registered to vote," *State Politics and Policy Quarterly* 5, no. 1 (2005): 1-23.

Finally, as interest in the effect of election laws, regulations, and practices has evolved, the effect of different laws has been examined, such as the effect of the National Voter Registration Act (NVRA) of 1993.

19. It is not always possible to study the effect of voter registration laws on the probability that a citizen will vote using individual-level data. The best example of this is when the topic is studied in an international context, where cross-national survey research may be lacking.[11] In these cases, aggregate turnout rates may take the place of data on individual decisions to vote (or not), and aggregate measures of demographic and political factors may be substituted for individual measures of the same phenomena. Direct measures of election laws are always included in this type of analysis.

20. About these studies that rely on aggregate data to examine the influence of election laws on turnout, it is important to remark that the *theoretical* model has not changed. Social scientists still think of the problem as understanding how a *typical citizen* of a country or state is affected by election laws. The aggregate analysis provides some insight into the question, but the gold standard is analysis that studies the behavior of individuals — that is the unit of analysis to which all studies of the effects of voting laws strive.

21. My general reading of the Trende Declaration is done in the context of my familiarity with this large scientific body of work on the question of the influence of election laws on voter turnout. It would be unreasonable to assume that an expert report on the likely effects of HB 589 on North Carolina voters would replicate in every detail the established scientific work just reviewed in the case of North Carolina. However, expert reports should be

[11] Two highly cited articles in this vein of research include Robert W. Jackman, "Political institutions and voter turnout in the industrial democracies," *American Political Science Review* 81 (1987): 405-423 and G. Bingham Powell Jr, "American voter turnout in comparative perspective." *American Political Science Review* 80 (1986): 17-43.

actively informed by the body of established scientific research on the topic. I have already alluded to the hallmarks of that research that are central to this literature: (1) a theoretical grounding in the idea of the "representative citizen" and how he or she is affected by changes in election laws, (2) disaggregation, that is, exploring the effects of *individual* election laws on turnout, rather than lumping them together, and (3) a careful attention to appropriate statistical controls. There are other standards of inquiry that should apply to all scientific research, such as transparency of method, attention to measurement, and care in the interpretation of estimated effects.

22. As a general matter, my reading of the Trende Declaration leads me to conclude that it offers only minor and tangential analysis of the impact of HB 589 on the individual voters of North Carolina, either voters as a whole or voters analyzed separately by race. Therefore, it offers scant insights into whether the *change* in North Carolina's election laws will cause a *change* in election obstacles faced by individual voters in the state. It certainly provides no insights into whether those changes are likely to be greater for African Americans or whites.

II. The alternative coding of early voting time spans offered in the Trende Declaration in support of Opinion 1 are minor, and result in a conclusion that is identical to that offered in my original declaration.

23. The Trende Declaration includes a long discussion of the details of early voting laws in the various states.[12] As the Trende Declaration rightly notes, coding states with respect to how many days of early voting they allow involves judgment calls.[13] In the construction of Figure 11 of my declaration, which compares early voting days in North Carolina to other states, I relied on a summary spreadsheet published by the Early Voting Information Center (EVIC), of

[12] Trende Declaration, ¶¶ 26–44, including Figure 1.
[13] Trende Declaration, ¶ 30.

which Dr. Paul Gronke is the founder and director.[14] I relied on this data because the EVIC is regarded in the election administration community as the most authoritative impartial source of information about in-person early voting in the United States.

24. The information contained on the EVIC Web site is the opening and closing dates of the early voting period in each state. Figure 11 in my declaration graphs these opening and closing dates. To help organize the graph, I also calculated the number of days between the opening and closing dates and termed this the number of days available for early voting (¶ 129), using this measure to sort the states. It is certainly true that local election officials regularly are granted some flexibility within these opening and closing dates for the scheduling of early voting, including some flexibility about the specific dates and times when early voting sites will be open, within the overall early voting window set by state law. Variation in details such as this will affect the experience of individual voters. However, such variation *within a state* will be minor compared to variation *across states* in how many days and hours of early voting are available to a typical voter. As a consequence, these details should not affect the broad picture of how early voting laws impact voting across the states.

25. Finally, in conducting my analysis, it was important to measure the opening and closing dates of early voting *in 2012.* The EVIC spreadsheet reports the opening and closing dates for early voting periods for 2012. It is not clear which year is reflected in the coding of early voting time periods that appears in the Trende Declaration, because that information is not reported. For instance, Nebraska enacted a law in 2013 that reduced its early voting period to 30

[14] In my original declaration, I provided a URL link to the EVIC web site that hosts the spreadsheet I relied on. To facilitate direct access to the data, I provide the direct link to the spreadsheet here: https://docs.google.com/spreadsheet/ccc?key=0AqzPUPKRixWSdGtHSXlMMk1qNEFDRVU4X1U2REg2NlE#gid=0.

days, which is the time period reported in the Trende Declaration (¶ 40).[15] There may be other cases where the divergence in the coding of early voting periods between my report and the Trende Declaration are due to Mr. Trende relying on early voting dates that were changed after 2012.

26. It is appropriate to consider the exercise conducted in the Trende Declaration at paragraphs 32–42 as a "sensitivity analysis" of the account given in my original declaration. A sensitivity analysis responds to the question, "If someone with a skeptical eye makes other assumptions about how to code the data, do the findings hold up?"

27. The answer to this question is an unqualified "yes." In Figure 11 of my original declaration, I show that before the passage of HB 589, North Carolina's early voting period was the 19th shortest of the 32 states identified with in-person early voting; after HB 589, North Carolina now ranks 5th shortest among the 32 states. In the Trende Declaration (Figure 1), North Carolina ranked as the 19th shortest among 33 states with in-person early voting before HB 589; after HB 589, North Carolina ranked 5th shortest among 33 states. In other words, the analysis in the Trende Declaration substantively replicates the analysis I provided in my original declaration, illustrated by Figure 11.

28. On net, the disagreements in the coding of states with respect to their early voting windows are minor, and cancel each other out with respect to the overall ranking of states. The EVIC spreadsheet notes that Maine had early in-person voting, but did not provide opening and closing dates of the early voting season. The Trende Declaration codes Maine's early voting period at 38 days. The Trende Declaration bases its coding of Minnesota on a change to election

[15] Nebraska LB 271, approved by the governor April 24, 2013. http://nebraskalegislature.gov/FloorDocs/Current/PDF/Slip/LB271.pdf.

law that occurred after the 2012 election; Minnesota did not have in-person early voting in 2012, so is properly excluded from the analysis.[16]

29. The Trende Declaration correctly codes Virginia as not having early in-person voting as it is commonly understood.

30. With the cases of Maine, Minnesota, and Virginia aside, the following table accounts for all the coding differences between my declaration and the Trende Declaration.

Table 2. Coding decision differences about the number of early voting days in the Stewart and Trende Declarations.

State	Stewart Declaration	Trende Declaration	Difference
Colorado	12	15	-3
Idaho	43	18	25
Illinois	13	21	-8
Kansas	20	14	6
Nebraska	36	30	6
West Virginia	11	10	1

III. The analysis offered in the Trende Declaration, which compares North Carolina with states that offer no opportunities for in-person early voting, confuses the election administration issues posed by this case.

31. The Trende Declaration attempts to cloud the issue about North Carolina shortening its early voting period by arguing that the length of the early voting periods of states that offer in-person early voting should be directly compared with states that do not allow in-person early voting at all. As a consequence, it is suggested that states without early in-person voting at all should be coded as offering zero days of early voting; therefore the rankings of all states with respect to their early voting periods should be shifted by sixteen positions (by the Trende Declaration's accounting). This would make all states with in-person early voting, even

[16] In the 2012 Statutory Overview Report published by the U.S. Election Assistance Commission (pp. 10–11), Minnesota is listed as "N/A" (Not Applicable) in the table summarizing mail-in voting and early voting laws by state. This indicates that Minnesota is a state that did not permit early voting in 2012.

those with severely restricted numbers of early voting days, appear to offer even more days of early voting than they actually do.

32. The problem with this classification decision in the Trende Declaration is that states that offer in-person early voting operate within qualitatively different election administration regimes than states that do not. Indeed, as a general matter, states that offer in-person early voting usually do not offer it passively — they publicize this voting mode and encourage voters to take advantage of it. Thus, the difference between a state that offers *no* days of early in-person voting and a state that offers a *limited number* of days of early in-person voting is a difference of *kind,* not a difference of *degree.*

33. It is my experience that election administrators generally encourage voters to vote early (when the state allows it) because early voting offers administrative advantages over traditional in-precinct voting on Election Day ("Election Day voting"). If voters who prefer to vote in-person shift to early voting, county boards of elections can often consolidate the number of Election Day voting sites, saving money on facility rentals and staff salaries. Local election boards can also rely more heavily on year-round employees to staff early voting sites, compared to Election Day poll workers who are often poorly trained and paid.[17] Administratively, this means that early voting offers improvements in security, registration list maintenance, and access to the polls for people who need assistance.

[17] See Presidential Commission on Election Administration, *Report* (2014), p. 45, available at https://www.supportthevoter.gov/files/2014/01/Amer-Voting-Exper-final-draft-01-09-14-508.pdf.

34. In states that offer in-person early voting, voting equipment that might otherwise be used for Election Day voting is redeployed to early voting centers,[18] as the remaining voting equipment is reassigned to consolidated Election Day precincts.

35. One consequence of states offering in-person early voting is that citizens eventually become habituated to voting in the new mode. This habituation is a large part of what accounts for the steady growth in the number of voters using early voting nationwide, in both on- and off-year elections, since 2000.[19]

36. The interaction between administrative procedures, voter expectations, and the encouragement of local election officials has led states to differentiate themselves with respect to the portfolio of voting options they offer their residents. States can be thought of as offering five stylized portfolios of voting modes:

- Traditional Election Day voting, with absentee ballots offered for a limited number of excuses.
- Election Day voting with "no excuse" absentee mail ballots
- Election Day voting with in-person early voting
- Roughly equal reliance on Election Day, by-mail absentee ballots, and in-person early voting
- All vote-by-mail (VBM)

37. The emergence of these portfolios over the past decade-and-a-half is illustrated in Figure 1, below.

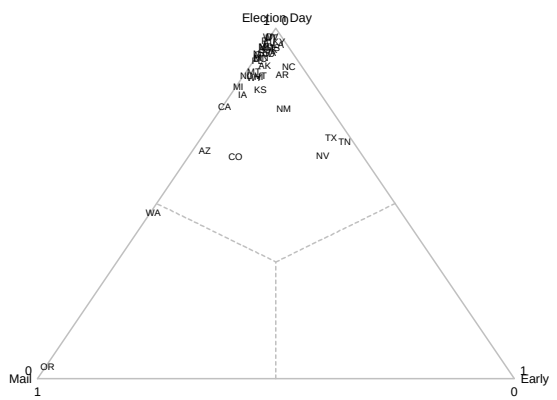
38. Figure 1 displays two "ternary plots." A ternary plot allows one to plot the percentage composition of a whole quantity that can be divided into three parts (in this case, a

[18] Based on conversations with state and local election officials in a number of states over the past several years, it is my understanding that in almost every case, voting equipment used for early voting cannot — and often is not permitted to — be deployed for Election Day voting.
[19] Caltech/MIT Voting Technology Project, *Voting: What has Changed, What Hasn't, & What Needs Improvement,* p. 37. Available at http://vote.caltech.edu/sites/default/files/Voting%20Technology%20Report_1_14_2013.pdf.

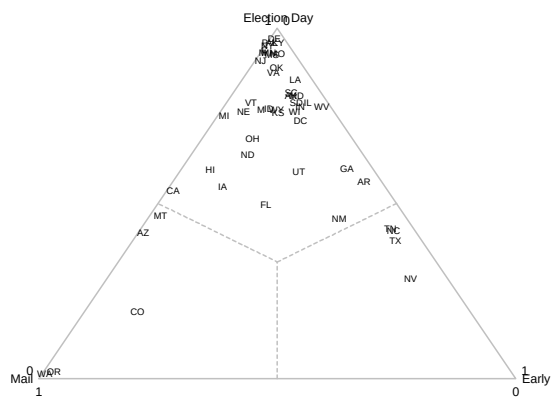
state's electorate), on a two dimensional surface.[20] In these particular plots in Figure 1, each state's electorate is divided into (1) those who reported they voted on Election Day, (2) those who voted early in-person, and (3) those who voted by mail.[21] If a state is at the very top of the equilateral triangles, then all of its voters reported that they voted in-person on Election Day. If a state is located at the lower left-hand vertex of the plot, then all its citizens reported voting by mail. If a state is located at the lower right-hand vertex of the plot, then all its citizens reported voting early in-person.

Figure 1. Composition of state electorates by voting modes, 2000 and 2012. (Source: Voting and Registration Supplement of the Current Population Survey)

a. 2000.



b. 2012



39. Drawing our attention to Figure 1a, which shows the composition of voting modes in the 2000 election, note that the bulk of states are clumped together at the top of the graph. This illustrates that in 2000, most states' voters primarily went to the polls in-person on Election Day. To the degree that states are plotted below the apex of the triangle in Figure 1a, most hug the left side of the triangle, which indicates that in most states in 2000, if citizens did not vote in-person on Election Day, they voted absentee, by mail. Note that almost all of

[20] See the following Wikipedia entry for an accessible introduction to ternary plots: http://en.wikipedia.org/wiki/Ternary_plot

[21] The data plotted in these graphs were generated from the Voting and Registration Supplement of the Current Population Survey, which was described in my original declaration. See paragraph 48 and Exhibit 19.

Oregon's voters reported voting by mail, owing to that state's transition to total mail balloting, and that just over half of Washington State's voters voted by mail — again, because Washington was in the process of transitioning to all VBM. Three states — Nevada, Tennessee, and Texas — stand out as states whose citizens were beginning to abandon Election Day voting in favor of in-person early voting.

40. Drawing our attention now to Figure 1b, we see that by 2012, states had diversified, in terms of how their voters cast ballots. A few states remained clumped at the apex of the triangle, consistent with the maintenance of traditional laws that required voters to vote on Election Day, with few exceptions. Most states had fallen from the apex. Voters in states falling along the left side of the triangle were voting by mail at significant rates. Voters in states falling along the right side of the triangle were voting in person, but during the early voting period at significant rates. A few states (such as Florida and Utah) had fallen straight down the figure, indicating that their voters were using all three voting modes in roughly equal proportions.

41. North Carolina is located with a group of states that includes Tennessee, Texas, and Nevada, in which the modal (i.e., most common) voting mode is in-person early voting.

42. If one is to place states "in a national context," as the Trende Declaration seeks to do,[22] it is necessary to do so in light of qualitative differences and similarities in voting-mode regimes. It may make sense to ask about differences in administrative parameters among the states that have clearly chosen to encourage the early-voting track, but it defies logic to suggest we learn anything by comparing the early voting practices of states whose voters have embraced early voting with states whose voters have not.

[22] Trende Declaration ¶ 26.

43. Therefore, to treat states that do not allow in-person early voting as if they *do* offer in-person early voting — only the number of early voting days is set to zero — results in an apples-to-oranges comparison among the states.[23]

44. Previously I noted that the interstate comparison of election laws is relevant only if the comparison illuminates the effect of *changes* in North Carolina's election laws on *changes* in the experience of North Carolina voters. The reason why it is relevant to compare the number of days of early voting in North Carolina to other states is so that we can gain insight into the likely effects of HB 589 on North Carolina's voters.

45. In my original declaration, I note that the reduction in early voting days wrought by HB 589 is similar to the reduction in early voting implemented in Florida in 2012. Before Florida made its change, it offered 14 days of early voting, which is in line with what North Carolina had before HB 589 passed. Also note, from Figure 1b, that Florida is one of the states with the greatest proportion of early voters, ranking eighth overall in 2012. As I note in my original declaration, a bipartisan consensus emerged in the Florida legislature after the 2012 election that this reduction in early voting days led to serious problems in the administration of early voting, the most visible of which were hours-long lines to vote early.[24]

46. North Carolina had *more* early-voting than Florida did in 2012, measured by shares of their respective electorates. The reduction in early voting days in Florida was largely regarded to be a disaster for that state's voters, and for the reputation of the state's ability to manage elections. This interstate comparison is relevant only because it gives us insight into the likely effects of HB 589 in North Carolina — not because it informs us about whether North

[23] The Declaration of Donald Schroeder also falls prey to this inferential fallacy. (See Schroeder Declaration, ¶ 9b.)
[24] Stewart Declaration ¶¶ 196, 210.

Carolina is more-or-less in the "mainstream" of states in an irrelevant comparison of state election laws.

IV. The analysis offered in support of Opinion 1 in the Trende Declaration is ad hoc and unrelated to the issues involved in this case, because it offers no statistical analysis concerning racial disparities that are likely to arise on account of implementing HB 589.

47. The analysis pertaining to Opinion 1 in the Trende Declaration appears to be in service of the conclusion contained in paragraph 61, which is that North Carolina during the decade of the 2000s "effectively created an outlier in United States election law, at least insofar as the laws at issue in this litigation are concerned." However, as far as this statement goes, it is simply a statement of how Mr. Trende has coded an independent variable that is likely to be related to turnout rates and barriers to voting, particularly in North Carolina. It is not a statement about whether North Carolina's change in election laws reflected in HB 589 will likely reduce turnout and/or increase obstacles to voting, which is the focus of the scientific literature reviewed in paragraphs 8–21, nor is it a statement about whether these obstacles will affect African Americans and whites disparately.

48. One can understand the review of election laws in Opinion 1 to be an attempt to comport with the standards of the canonical method of studying the effect of election laws on voter turnout reviewed above by creating a measure of how "liberal" or "restrictive" those laws are. As a measure of state law restrictiveness, the measure offered in the Trende Declaration falls short because it is not a systematic, comprehensive review of *all* laws or practices that might be implemented by a state to encourage greater turnout by its voters. For instance, it does not code whether a state has Election Day Registration (which North Carolina has never had), despite the fact that research has regularly shown it to have a strong positive influence on

registration and turnout rates.[25] Nor does the coding include whether a state has a "permanent" absentee ballot list or automatically mails absentee ballot applications to all voters — practices North Carolina does not use, but which are used in other states. The coding does not take into account whether states have Election Day "vote centers" (which North Carolina does not have), despite the fact that some research has shown that vote centers can enhance the voting convenience, improve election administration, and increase turnout.[26]

49. Thus, the measure offered in the Trende Declaration of the number of laws at issue in this case is a poor measure of how liberal or restrictive election laws are in a state. Because of how the measure is constructed, all it does is tell us which state is the most like North Carolina. It is unsurprising that the state most like North Carolina on this measure is North Carolina.

50. A more relevant question to ask is whether the types of laws at issue in this litigation are associated with higher turnout levels, and whether minority voters are more likely to be aided by these laws than whites. None of the analysis offered in the Trende Declaration addresses differential effects. As I discuss below, the analysis offered in the Trende Declaration about whether these laws influence the turnout of minority voters does not compare the effect of the laws on white voters. To the degree the analysis has a statistical component, it bears almost none of the marks of the canonical method in this field that I reviewed in paragraphs 8–21, and would be unacceptable for publication that required peer review.

V. The analysis offered in support of Opinion 2 of the Trende Declaration mischaracterizes the framing of the analysis in my declaration, and inappropriately

[25] See Brians and Grofman, "When registration barriers fall"; Brians and Grofman, "Election day registration's effect on U.S. voter turnout"; Leighley and Nagler, *Who Votes Now?; Knack and White, op. cit.*
[26] Robert M. Stein and Greg Vonnahme, "Engaging the unengaged voter: vote centers and voter turnout," *Journal of Politics* 70 (2008): 487–497.

assumes that if a law does not result in a reduction of registration or turnout, it has not presented an obstacle to voting.

51. The Trende Declaration begins Opinion 2 by claiming that I contend that the termination of same-day registration would result in a "diminution in African American registration." (Trende Declaration, ¶ 62) While this is one possible effect of the termination of same-day registration, along with other provisions of HB 589, my analysis made few direct predictions about the resulting number of African American voter registrations under HB 589. My analysis was primarily aimed at the imposition of *disparate obstacles* before African American and white voters in North Carolina by the implementation of HB 589. Those obstacles are generally measured by the percentage of voters in each racial group who will have to face them. Changing registration rates is one measure of the degree of obstacles, but it is not the only one.

52. Experience in the United States and abroad testifies to the ability of voters who face voting obstacles to overcome them in some circumstances, so that they manage to register and/or vote. This does not diminish the fact that an obstacle to vote or register is an obstacle, and that if African Americans are more likely than whites to have to face the obstacle in order to register or to vote, then the obstacle is greater for blacks than it is for whites.

53. The Trende Declaration similarly mischaracterizes my declaration by suggesting that the only outcome I am concerned with is turnout. For instance, the Trende Declaration in paragraph 66 lumps all the changes to North Carolina election law embodied in HB 589 together as part of the measurement of a "liberalized voting regime." The declaration then claims that my analysis suggests that *all* the changes wrought by HB 589 will predictably lower turnout by African Americans. That is an incorrect generalization of my analysis which limits the range of effects that obstacles might produce.

54. For instance, my analysis of the early voting restrictions focuses on the obstacles that will be placed in front of early voters, who will be required to vote in early voting centers that are likely to become even more congested than they were in 2012. The result will likely be longer waits to vote in the future. These longer waits are a cost imposed on voters *who continue to turn out to vote.* Again, reduced turnout, while a serious consequence of HB 589, is not the only consequence.[27]

55. The Trende Declaration (¶ 63) faults my analysis for failing to account for voters adjusting their behaviors as a consequence of the obstacles imposed by HB 589. This claim mischaracterizes my declaration.

56. For instance, I discuss at length research conducted by Dr. Paul Gronke and myself about the adjustments that Florida voters made when a similar set of barriers to early voting were passed in that state.[28] In that analysis, I note that *some* early voters from 2008, when faced with a restricted set of days in which to vote early in 2012, switched to other modes of voting, or voted later in the early voting period. Other voters — most often those who had previously voted late in the 2008 early voting period — did not vote at all in 2012.

57. Some people who wish to vote in future North Carolina elections will attempt to adapt their behavior to the voting obstacles thrown up by the North Carolina legislature by HB 589. Some who attempt to adapt will be successful in voting, others will be unsuccessful. It is incorrect to suggest that because someone overcomes a voting obstacle, as is suggested in paragraph 63 of the Trende Declaration, no obstacle exists.

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[27] The portion of the analysis offered in my original declaration that addresses turnout most directly is in paragraph 122, where I discuss the turnout rates of same-day registrants. I note that same-day registrants vote at a rate approaching 100%, compared to registrants who register right before the traditional registration deadline, who only vote at an 80% rate. This is a clear case in which a provision of HB 589 — the elimination of same-day registration — will certainly result in lower turnout.

[28] Stewart Declaration, ¶¶ 197–204.

58. In paragraph 65 of the Trende Declaration, it is claimed that "[p]laintiffs' experts also conflate the midterm electorate with the presidential electorate, notwithstanding the fact that the two electorates have become very different." This statement, too, mischaracterizes my original declaration.

59. In paragraph 77 and Exhibit 27 of my declaration I note that it is critical to draw comparisons across similar elections, in order to estimate the effects of a policy change on outcomes such as turnout or registration rates. In other words, to properly understand how a change in election laws affects a change in behavior, we need to hold the type of election constant. In Exhibit 27, I include an extended discussion of the difference between presidential election years and midterm congressional years — a discussion that goes beyond that offered in the Trende Declaration.

60. As I noted in my original declaration, the most important thing to keep in mind about the difference between presidential and congressional midterm elections in North Carolina is that midterm elections do not always have contested statewide races on the ballot. When there are no contested statewide races on the ballot, turnout drops.

VI. The analysis in support of Opinion 2 of the Trende Declaration contains a simplistic attempt at statistical analysis to account for how changes to election laws influence voter turnout. This analysis is inconsistent in method and approach with that found in the scientific literature on the topic.

61. Beginning at paragraph 67 of the Trende Declaration, and running to paragraph 135, there is what appears to be an attempt at statistical analysis to account for the impact of "liberalized" election laws on the turnout of African Americans in North Carolina. This analysis first introduces the Voting and Registration Supplement (VRS) of the Current Population Survey

as a data source that allows us to study the effect of election laws on voter turnout.[29] In-and-of-itself, the use of the VRS to study the influence of election laws on turnout is unremarkable, because the core findings in the scientific literature are based on research that uses this data. (See footnote 10 above.) However, this is where the comparison of the analysis offered in paragraphs 67–135 in the Trende Declaration with the research covered in paragraphs 8–21 above ends.

62. The analysis appearing in paragraphs 67 to 135 of the Trende Declaration bears few of the marks of the established scientific research on the topic. Rather than conduct individual-level, multivariate statistical analysis that seeks to explain why *individual* Americans registered and/or voted, as a function of the specific election laws in their states, the analysis contained in the Trende Declaration offers up, first, a series of highly aggregated time trends about turnout rates that pertain to a limited number of states. (The standard is to look at all states if one is doing cross-state analysis.) It then draws conclusions about the relationship between the "permissiveness" of voting regimes by conducting an informal review of African American turnout rates compared to an informal classification of states as "middling, low, and high" on a scale of voting regime permissiveness. (See, for instance, ¶ 79.[30])

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[29] Paragraph 69 of the Trende Declaration is incorrect in claiming that "voters are *required* to respond to the CPS" [emphasis added]. Participation in the CPS is voluntary. The Census Bureau undertakes a monumental effort to ensure that CPS panelists continue to respond to the various waves of surveys that are part of the CPS. In recent years, the nonresponse rate to the CPS has ranged between 8% and 9% of contacts. See http://www.census.gov/cps/methodology/collecting.html.

[30] The logic of the comparison in paragraph 79 of the Trende Declaration is the following. First, choose the three states with the highest African American turnout rates and record the "permissiveness" of the voting regimes in these states. Next, choose the three states with the lowest African American turnout rates and record the "permissiveness" of the voting regimes in these states. Finally, see if the high-turnout states have more permissive regimes than the low-turnout states. If they do, then we would conclude that "regime permissiveness" was positively related to African American turnout rates. There are two serious flaws with the logic of this approach as applied to paragraph 79. First, the analysis only uses six observations in the dataset; the accepted principle in statistical analysis is to use all the relevant data at one's disposal. Second, the method of choosing states to compare based on whether they have extreme values of the outcome (dependent) variable is called "sampling on the dependent variable," which is regarded as one of the most common (yet avoidable) research design flaws in the

63. Furthermore, some of the coding of states, in terms of their "permissiveness," would surprise most experts on election administration. For instance, in paragraph 79, Wisconsin's voting access laws are termed "middling," despite the fact it offers Election Day registration, which is the most liberal form of voter registration law available, short of North Dakota's lack of voter registration laws altogether.

64. Also troubling, when statistical analysis is conducted in this section of the Trende Declaration, it fixates on the statistical precision of how well the data fit to what could be considered control variables, without addressing the influence of the election laws themselves.

65. One example of this is found in paragraphs 87 and 88 of the Trende Declaration. In these paragraphs, the Trende Declaration notes that the turnout rate of African Americans has grown steadily compared to the white turnout rate since 1980. To establish this claim, the Trende Declaration offers the results of a simple OLS regression analysis, in which the "participation rate" of African Americans (as a fraction of the white "participation rate") is explained using the year as the independent variable. The Trende Declaration trumpets a "variance explained" level of 81.5 percent. The inference one is apparently supposed to draw from this analysis is that because African American participation rates have grown steadily over time, it is impossible for election laws to have had an influence on rising African American participation.

66. Nothing can be further from the truth. To see this point, and the faulty inferential logic of this analysis in the Trende Declaration, consider the following hypothetical. Imagine we are interested in studying whether a program established in a state to encourage more Hispanics to register to vote has been effective, in a context in which Hispanic voter registration has been

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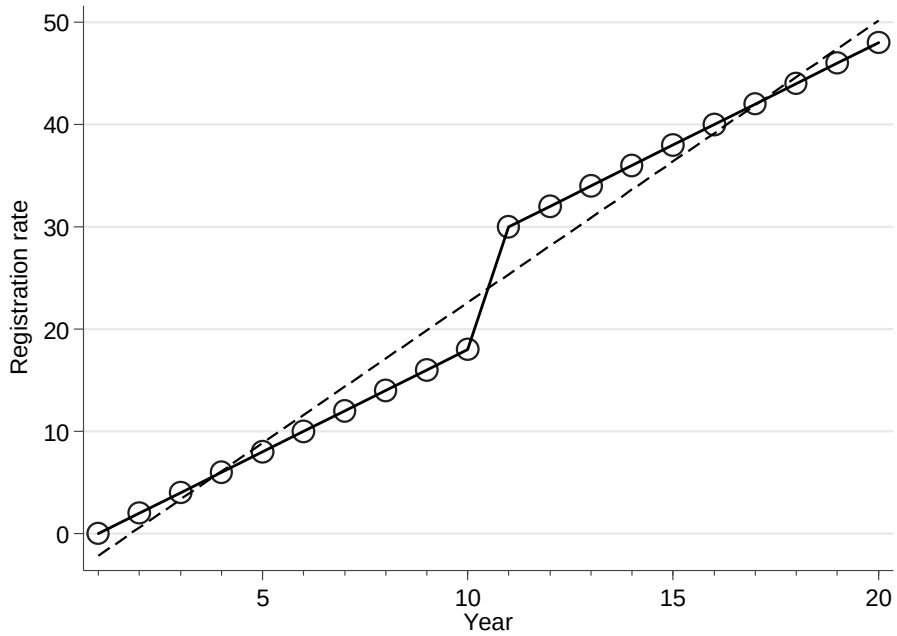
social sciences. See Gary King, Robert O. Keohane, and Sidney Verba, *Designing social inquiry: scientific inference in qualitative research,* Princeton: Princeton University Press, 1994, chap. 4.

growing steadily over time in the absence of such a program. In this example, suppose that in Year 1, no Hispanics are registered to vote. In Year 2, due to a rising interest in politics among Hispanics, rising educational levels, and individual mobilization efforts, the registration rate rises to 2%. In Year 3, for similar reasons, the registration rate rises another two points to 4%. Similarly, each year for ten years, because of reasons that are attributable to individual demographic factors, Hispanic registration rates continue to rise by two percentage points over the previous year. By Year 10, the Hispanic registration rate has risen to 18%. Between Years 10 and 11, a program is established to publish more registration materials in Spanish, and outreach programs are targeted to Spanish-speaking communities. As a consequence of this law, there is a one-time surge in the registration rate of an additional 10 percentage points. Thus, in Year 11, the registration rate grows to 30% (i.e., 10 percentage points higher than Year 10 because of the program plus 2 percentage points higher because of the long-term growth rate in registrations due to individual demographic factors). In the years that follow, the older pattern of growth by 2 percentage points each year continues without any further one-time surges.

67. Figure 2 below contains a chart that shows the registration rate of Hispanics each year in the example just described, along with a graph that plots the registration rate each year. Finally, the "best fit" linear regression line that describes this time series is also graphed using a dashed line.

Figure 2. Fit of a linear trend to a hypothetical time series describing the growth of Hispanic registration rates that are caused by a linear trend and a one-time policy change.

Year	Registration rate
1	0
2	2
3	4
4	6
5	8
6	10
7	12
8	14
9	16
10	18
11	28
12	30
13	32
14	34
15	36
16	38
17	40
18	42
19	44
20	46



68. Note that the dashed line approximates the graph very closely; the "variance explained" by this regression line is 97.6%.[31] Nonetheless, the effect of the change in law between years 10 and 11 is also apparent in the graph — the linear regression line fit to the data fails to account for the effects of the law, despite the fact that the r^2 statistic, which measures "variance explained," is very close to 100%.

69. This simple example helps to illustrate why it is that most instructors I am familiar with who teach statistical methods to political science students, both graduate and undergraduate, strongly caution their students against using r^2 ("variance explained") to draw

[31] In other words, when we run a regression with the registration rate as the dependent variable and year as the independent variable, the r^2 statistic is .976.

substantive conclusions. Just because a straight line can closely approximate the data in a scatterplot does not tell us anything about whether deviations from the long-term trend are associated with changes to policy or legislation.

70. Finally, it should be noted that if a multiple regression were conducted on the data illustrated in Figure 2, accounting for levels of Hispanic registration (the "dependent variable") using *both* year *and* a change in law as the two independent variables, the "variance explained" would jump to 100%. Furthermore, the regression coefficient that results from this analysis would properly record that after Year 10, registration rates were 10 points higher than before; the coefficients from the regression analysis would also uncover the fact that there was an additional 2 percentage point increase in registration rates each year. This would be the appropriate use of linear regression to study the effect of a policy change on outcomes — the answer is found in the regression *coefficients,* not in goodness-of-fit statistics such as r^2.

71. In short, reporting in paragraphs 87 to 90 of the Trende Declaration that there are linear trends in registration rates of African Americans over the past three decades in North Carolina has no bearing on the question of whether North Carolina's election laws affected these registration rates, and whether the laws had differential effects on African American and white voters. This analysis is not conducted according to standard scientific protocols in the study of the effect of election laws on registration and turnout rates, and hence is not informative for understanding these effects.

VII. The analysis of the Trende Declaration which suggests that turnout in North Carolina grew because it has become a "target state" is not based on evidence that is regularly used in the scientific analysis of this topic.

72. Paragraphs 91 to 116 of the Trende Declaration consist of an ad hoc review of evidence which suggests that voting turnout in North Carolina grew in the past decade because

of the emergence of North Carolina as a "target state," which is more commonly called a "battleground state." While some of this analysis is based on a synthesis of peer-reviewed scholarly literature, many of the citations are to news accounts and blogs — sources that may help generate hypotheses in social science research, but are rarely relied on to rigorously establish statistical patterns.

73. Most importantly, however, there is no dispute that North Carolina was a battleground state in the 2008 and 2012 presidential elections. The question is whether the effects of election laws are discernible after controlling for competitive factors that may also affect turnout levels.

74. Competitiveness in a state is certainly a factor that should be taken into account when assessing whether election laws also have an effect on turnout rates. Indeed, in their highly cited study on the effect of Election Day Registration (EDR) on turnout in each presidential election from 1972 to 1996, Brians and Grofman included a control for the degree of electoral competitiveness in states as part of their analysis.[32] Competitiveness — which was measured by how close the Democratic-Republican vote share was to a 50/50 split in the respondent's state in the year of the survey — had a statistically significant influence on whether respondents to the survey reported that they turned out to vote. Still, after controlling for whether a respondent lived in a "battleground state," whether a state had EDR was also shown to be a statistically significant influence on turnout.[33]

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[32] Brians and Grofman, "Election Day Registration's Effect on U.S. Voter Turnout," *op. cit.*

[33] In addition to controlling for state partisan competitiveness, the Brians and Grofman article also controls for age, education, income, employment status, marital status, sex, race, year of the election, whether the state's voter registration deadline is close to Election Day, and a measure for how actively the state's department of motor vehicles assisted in registering new voters. It should also be said that while *Election* Day Registration is different from *Same* Day Registration, which is what North Carolina had before HB 589 passed, in that EDR is allowed on Election Day while SDR happens during early voting before Election Day, findings pertaining to the relationship between EDR and turnout are relevant in considering the relationship between Same Day Registration and turnout.

75. None of the analysis offered in paragraphs 91 to 116 helps to provide an estimate of the effect of early voting, same-day registration, and out-of-precinct provisional balloting on registration or turnout rates in North Carolina, after controlling for electoral competiveness. The closest this section comes to tying competitiveness to the effects of specific laws changed by HB 589 is in paragraphs 108 and 109 of the Trende Declaration, where early voting is discussed. However, all these two paragraphs do is provide a quote from a history of the 2008 campaign that supports the idea that early voting was a *target* of the Obama campaign. That quote, however, says nothing about targeting of *African Americans,* or about the targeting of African Americans in North Carolina. The quote supports a general claim about campaign strategy that has no particular bearing on North Carolina. At best, the claim made in paragraphs 108 and 109 offers an intriguing hypothesis that could, in principle, be tested within the structure of the standard statistical models used to test the effects of election laws on registration and turnout. Such analysis is not offered in the Trende Declaration, however.

76. Paragraphs 117 to 125 claim to provide a comprehensive cross-state analysis of whether the election laws changed by HB 589 are associated with an increase in African American turnout across 34 states from 2000 to 2012.[34] I interpret the analysis in paragraphs 117 to 125 to be an attempt to follow in the tradition of the research spawned by the early work of Wolfinger and Rosenstone discussed above. However, when compared to the significant political science literature that examines the effects of election laws on voter turnout using VRS

[34] Why these 34 states were chosen is not clear. The Trende Declaration claims that these 34 states are the only one for which "the CPS has an unbroken data series of African American voter participation between 2000 and 2012." (¶ 118) It is not clear what is meant by this statement. In my examination of this data, there are black respondents in each state's sample who responded to the turnout question in the 2000, 2004, 2008, and 2012 versions of the CPS/ VRS. Some of the sample sizes are very small in particular years — only 1 black respondent in Montana in 2012, for instance. Therefore, the Trende Declaration probably uses some cut-off point based on the number of African American respondents, but that cut-off is not reported. If the Trende Declaration had analyzed individual responses to the CPS/VRS, it would have been possible to analyze respondents from all states without worrying about the problem of a small number of African Americans in the sample from some states.

data, some of which was cited above in footnote 10, the analysis offered in these paragraphs of the Trende Declaration deviates from the basic principles of that research, and does not add to a scientific understanding of the issue.

77. There are many flaws in the analysis contained in paragraphs 117 to 125. I briefly note just four here. First, if we are to understand whether there are disparate effects of election laws based on race, we need a comparison of the *relative* differences in black and white participation rates across states. There is no such analysis in this section, only a report of changes in African American participation without any comparison with white participation.

78. Second, as noted above, it is common to add demographic and political controls when accounting for the effects of election laws. However, in the analysis offered here, the Trende Declaration examines only a "few basic controls": whether there was a change in how "contested" a state was between 2000 and 2012[35] and African American turnout in 2000. A cursory review of the literature cited in footnote 10, above, would reveal that many more controls are typically entered in studies of this subject, with the two most basic being age and education. Furthermore, the method of controlling for other factors in the Trende Declaration is not truly multivariate — single controls are explored one at a time. Thus, in sum, the strategy of applying statistical controls is highly unusual.

79. Third, the causal sequencing of the variables considered in this section of the Trende Declaration is highly unorthodox. In the best of circumstances, we would observe a change in election laws at one point in time (often termed "time *t*" in the social sciences) and

[35] Mr. Trende codes states according to their competitive situation in 2000 and 2012 based on his "experience as a psephologist [i.e., scientific analyst of elections] and knowledge of United States elections." (¶ 122) In all the scientific analysis of the effect of election laws on registration and turnout of which I am aware, when competitiveness is entered in as a control, the measurement is based on objective criteria that are explained to the reader and readily reproducible. The standard objective measure is based on how close a state's presidential election returns are to a 50/50 split. See Brians and Grofman, *op. cit.* and Leighley and Nagler, *Who Votes Now?*, chap. 4.

then measure a change in registration or turnout in a future point in time (time t +1). Often we do not observe this temporal ordering, but rather measure the presence of laws and turnout levels at the same point in time. This allows us to establish a correlation between election laws and turnout levels, but conclusions about causal relationships must be treated cautiously.

80. The Trende Declaration's approach to temporal sequencing of the input and output variables is entirely different from what one typically encounters. The outcome variable (African American turnout) is measured as a *change* from 2000 to 2012. The independent variable is the state of election laws *at the end of the period,* in 2012. Therefore, we are left with the odd situation in which an outcome is associated with an independent variable in such a way that the change in turnout, which is the outcome variable, temporally precedes the laws that are being tested for having a causal effect on the outcome. For proper causal analysis, it should be the other way around.

81. Fourth, the analysis is confined to 34 states, which reduces the statistical power of the tests dramatically. The ability to discern the effects of election laws on registration and turnout rates depends on the ability to estimate effects that are in the range of 3-to-4 percentage points. Such precision typically only comes with sample sizes that run into the thousands of observations. That is why the canonical approach to the study of the effects of election laws on registration and turnout proceed from such large data sets, analyzing tens of thousands of individuals.

VIII. The Trende Declaration misrepresents the research conducted by Dr. Paul Gronke and myself into how Florida voters responded to a restriction of early voting days in 2012, by mischaracterizing voters' commitment to early voting as voters' commitment to voting at all by any method.

82. The Trende Declaration addresses research that Dr. Paul Gronke and I conducted into how Florida voters responded to a restriction of early voting days in that state — restrictions that are similar to those imposed by HB 589.

83. The Trende Declaration begins the consideration of our research by misrepresenting a characterization we make of early voters in Florida. In paragraph 139 of the Trende Declaration, it is claimed that "Dr. Stewart notes that the decline did not actually come from the voters who voted on the days where early voting was cut. These voters were the most committed voters." Stating that Dr. Gronke and I said that the earliest of the early voters in Florida were "the most committed voters" misrepresents what we wrote. Here is the complete sentence that the Trende Declaration is referring to:

> The earliest early voters in Florida in 2008, plus those who voted in the middle weekend, were the most committed to this mode of voting; in 2012, they were the *least likely* to be deterred by reports of long waits to vote early once the early voting centers opened. [emphasis in original][36]

84. The Trende Declaration misconstrues our statement about voters who were the most committed *to early voting* into a one that makes it appear that we claim these were the most committed voters in the Florida electorate.

85. In short, what we characterize as a commitment to a *mode of voting,* the Trende Declaration morphs into a statement about commitment to voting itself. By inference, this disparages the civic commitment of those who voted later in the early voting period, as well as others who voted using other modes.

86. Furthermore, paragraph 140 of the Trende Declaration implies that Dr. Gronke and I characterize voters who voted in 2008 but not in 2012 as "less motivated," citing paragraph 206 of my original declaration. There is nothing in that paragraph about voters being more-or-

[36] Stewart Declaration, ¶ 203.

less motivated as a consequence of when or how they voted. Rather, paragraph 206 of my original declaration suggests that the empirical patterns seen in Florida in 2012 are likely to repeat in North Carolina in 2016: the earliest early voters will be forced to vote in early vote centers that will be even more congested than they were in 2012. This may *deter* some from voting, "out of fear that the lines to vote will be unreasonable."

87. There were reports in Florida during the 2012 election season of lines to vote at the early voting centers of up to five hours on the last Saturday of the early voting period.[37] There are many explanations besides "lack of motivation" for why some people would choose to forego voting under these circumstances, such as the press of family obligations or job responsibilities.

88. To conclude, very little in the Trende Declaration is relevant to the questions at issue here, which are narrowly focused on the likely effects of *particular laws* upon *individual* voters in North Carolina. The empirical issues also revolve around analysis that directly compares recent behavior of African American and white voters in the state. The analysis offered in the Trende Deposition is, by-and-large, aggregated at a very high level, inattentive to direct comparisons of blacks and whites, and lacking of the degree of methodological rigor associated with scientific studies of the effects of election laws on outcomes such as voter turnout.

MATTERS RELATED TO THE THORNTON DECLARATION

IX. The observation in the Thornton Declaration that factors other than changes to election laws may influence individuals to vote does not diminish the fact that North Carolina's election laws do have an influence on voter turnout.

[37] Stephen Ansolabehere and Charles Stewart III, "Waiting in Line to Vote," White Paper prepared for the Presidential Commission on Election Administration, July 28, 2013, p. 9, available at http://vote.caltech.edu/sites/default/files/WP%20114.pdf.

89. Just as with the Trende Declaration, much of the Thornton Declaration is devoted to suggesting that factors other than election laws may influence turnout decisions in North Carolina. (See, for instance, Thornton Declaration, ¶ 20.) As I previously noted (¶¶ 14–17), the scientific literature on turnout that systematically examines the tie between election laws and voter turnout also controls for non-legal factors, such as voter demographics, electoral dynamics particular to an election, and the partisan competitiveness of states, as a matter of course. In all the studies previously cited, after accounting for these other demographic and political factors, election laws still had measurable effects on turnout. To state that "the decision by individuals to register to vote and to participate in voting are not solely tied to the availability of one-stop voting"[38] is arguing with a straw person.

90. In addition, the Thornton Declaration uses the growth of North Carolina's voter registration in the 1990s — before North Carolina passed the election laws that were repealed or revised by HB 589 — as evidence that something other than North Carolina's voting laws must explain the growth in North Carolina's registration rates.[39] What goes unsaid is that the most likely explanation for the rapid rise in North Carolina's registration rate in the 1990s is passage of the federal National Voter Registration Act (NVRA), which resulted in a liberalization of voter registration procedures in some states.

91. In research published in 1995 — in other words, immediately after the passage of the NVRA — about the impact of legal constraints on voter registration rates, Mitchell and Wlezien show that North Carolina at that time had among the most restrictive registration laws in the nation, and therefore was one of the states that would likely experience the greatest gains in

[38] Thornton Declaration, ¶ 20.
[39] Thornton Declaration, ¶¶ 20, 21.

registration rates were restrictive registration laws to be loosened up.[40] If it is in fact the case that the NVRA is responsible for the rapid rise of voter registration rates in North Carolina in the 1990s, this hardly refutes the impact that laws that were passed later had on raising North Carolina's registration rates even further.

X. The fact presented in the Thornton Declaration that census tracts with early voting sites had a statistically significantly higher percentage of African Americans among the voting age population does not undermine the conclusion that HB 589 will have a disproportionate impact on blacks compared to whites.

92. In paragraphs 25 to 34 of the Thornton Declaration, it is reported that the census tracts in which early voting sites are located tend to have higher percentages of African American residents than census tracts that do not have early voting sites. This pattern is fully consistent with my conclusion that African Americans will face greater obstacles by the restriction of the number of early voting days than whites. *If the location of early voting sites does not change in the future,* the location of early voting sites is a constant; therefore, early voting site location cannot have an influence on the differential burden of the early voting restrictions. Stated another way, Africans Americans, more than whites, will end up voting in the same early voting sites that they used in 2012, only now they will be more congested.

93. The analysis presented in paragraphs 25 to 34 of the Thornton Declaration concerning the location of early voting sites reaches similar conclusions to the analysis offered in paragraphs 64 to 74 of the Hofeller Declaration, insofar as the Hofeller analysis shows correlations between the siting of early voting centers and African American population. As with the analysis in the Thornton Declaration, this analysis in the Hofeller Declaration is

[40] Glenn E. Mitchell and Christopher Wlezien, "The impact of legal constraints on voter registration, turnout, and the composition of the American electorate," *Political Behavior* 17 (1995): 179–202. According to Mitchell and Wlezien, only Arizona, Georgia, and New Mexico had more "room to grow," in terms of liberalizing registration laws in order to increase turnout.

consistent with my conclusion that the obstacle imposed by restricting the number of early voting days will have a greater impact on African Americans than on whites.

XI. The differences in average wait times for early voting in North Carolina are greater than the national average; the difference is statistically significant at traditional levels used in the social sciences.

94. The Thornton Declaration notes at paragraph 37 that I do not provide a "margin of error" for the 5.9% point-estimate I calculate of the percentage of North Carolina respondents who waited "more than 1 hour" to vote in Table 9 of my declaration (p. 74). Dr. Thornton then attempts to calculate the 95% margin of error, but does so incorrectly.[41] (I had made this estimate using data from the Survey of the Performance of American Elections [SPAE].) The correct margin of error is ± 3.4 percentage points.[42] Thus, the true population proportion has a 95% probability of lying within the interval of 2.5% to 9.3%. However, it bears noting that according to the "central limit theorem" which allows us to make inferences about population statistics when we have only a sample of the population to go on, the most likely population value of this proportion is 5.9%.

95. The Thornton Declaration notes, at footnote 35, that the number of observations in Exhibit 42 of my declaration vary slightly from the counts in Table 9, whereas the number of observations should be identical. Upon a review of the output of my analysis, I have discovered that the counts in Table 9 are correct. I have attached to this report, as Exhibit 1, an update of the original Exhibit 42, which now reflects the correct number of counts that are associated with all the proportions in the exhibit.

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[41] If p is the proportion for which we are trying to construct the margin of error, and n is the number of observations used to calculate the proportion then the formula for the 95% margin of error is the following: $1.96 \times \sqrt{\frac{p(1-p)}{n}}$.

[42] That is because, using the formula from the previous footnote, $1.96 \times \sqrt{\frac{0.059(1-0.059)}{188}} = 0.034$.

96. Although the Thornton Declaration attempts to cast doubt on whether one can trust the statistical estimates of wait times based on only 146 Election Day and 188 early voters, the fact is that statistical tests of significance factor in sample size, to establish how precisely the estimate produced by analyzing a sample approximates the corresponding population statistic. The larger the sample size, the greater the precision. However, as the central limit theorem establishes, the sample mean approaches the population mean very rapidly as the sample size grows. It approaches so rapidly, that the rule of thumb often used in applied statistics is that once the sample size exceeds 20 (so long as the sampled observations are independently drawn), the sample mean is likely very close to the population mean.

97. However, my conclusion that early voting wait times in North Carolina were longer in 2008 and 2012 than the national average is not based only on the percentage of North Carolina early voters who reported waiting more than an hour to vote, as is suggested in paragraph 37 of the Thornton Declaration. Instead, it is based on an analysis that compares all early voters in the North Carolina sample with all early voters in the remaining sample of the SPAE. This comparison has a sufficiently large number of observations to establish with precision whether the average wait times of the two groups are statistically significantly different from each other. Regardless of how the statistical test is performed, we can conclude that North Carolina early voters very likely waited longer to vote than early voters in the rest of the country.

98. We can first construct a *chi-squared* test of whether the distribution of early voting wait times in Table 9 of my declaration for North Carolina likely came from the same distribution of early voting wait times for the remaining sample of early voters nationwide. According to this *chi-squared* test, we can conclude that the probability that the nationwide

distribution of early voting wait times and the North Carolina distribution of early voting wait time came from the same population is less than 0.00006%.[43]

99. Second, we can conduct a multiple regression analysis to test whether average values of the wait-time response for early voters in North Carolina are greater than the average values of the wait-time response for early voters in other states. When we run that regression, we discover that the probability that North Carolina early voters waited longer (on average) than early voters nationwide is 99.9999%.[44]

XII. The Thornton Declaration mischaracterizes my analysis of the total number of early voting hours in counties, and performs an analysis that leaves an incorrect impression that she has conducted an independent analysis that is similar to my own.

100. The Thornton Declaration states that I "purport[] that the hours open in each county is related to the size of the population. However, I also found the hours open are statistically significantly correlated with having a higher proportion African-American VAP in a county."[45]

101. First, this characterization of my analysis of the total number of early voting hours available in each of the 100 counties in North Carolina implies that I did not analyze predictors of early voting hours other than county size. This is incorrect.

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[43] More formally $\chi^2 = 34.3$ with 4 degrees of freedom; $p < .0000006$.

[44] The following reports the regression output. Note that the *t*-statistic for the coefficient associated with being a North Carolina voter is much greater than 1.96, which is the threshold for being within the traditional 95% confidence interval used in the social sciences.

Variable	Coefficient	*t*-statistic
Voter is from North Carolina	0.44	4.98
Intercept	2.18	103.1
N = 3,330		
$r^2 = .01$		
s.e.r. = 1.19		

[45] Thornton Declaration, ¶ 35.

102. In Exhibit 45 of my report, I perform a multiple regression that predicts the total number of hours available for early voting in each North Carolina county in 2012 in terms of (1) the number of registered voters in the county, (2) the percentage of the vote received by President Obama in 2012, (3) the percentage of the county's registered voters in 2012 who were non-white, and (4) the fraction of the county's voters who used early voting in 2010. I report regression results one independent variable at a time (bivariate regression) before I combine all four independent variables into a single multiple regression. I show that the total number of early voting hours is statistically significantly related to the number of registered voters in the county and the Democratic vote share for president in 2012. It was not related to race or prior early voting usage in the multivariate analysis.

103. The Thornton Declaration claims to find a statistically significant positive relationship between the "hours open" in a county and the proportion of the county's voting age population (VAP) that is African American. I find no such relationship. Because the Thornton Declaration does not report the data on which this analysis was performed, nor does it describe the procedure by which it calculated open hours in each county, I do not know why our findings are divergent on this point.[46]

XIII. The Thornton Declaration incorrectly claims that I assume 3.0% of African-Americans will be unable to vote due to changes in the same-day-registration law.

104. Paragraph 39 of the Thornton Declaration claims that I assume that 3.0% of African-Americans will be unable to vote in the future because of changes to the same-day registration law by HB 589. This sentence is misleading.

[46] It is unclear from the Thornton Declaration, for instance, whether the hours-open measure was calculated by summing up the available hours at each early voting location in a county, or whether some other method was used. Further, it is unclear whether Dr. Thornton cross-checked the open hours reported in the state-provided hard drive with the hard copy of the open hours scheduled at each county's early voting site that was made available through the discovery process. See ¶ 183 n. 105 of my declaration.

105. I calculate the 3.0% figure by noting that had HB 589 been in effect for the 2012 election, "31,127 African Americans would no longer have been able to register during the same-day registration period, which was revoked by HB 589…"[47] Then using 1,046,424 — the number of African Americans who turned out to vote in North Carolina in 2012 — as the denominator, I state the following:

> Using this turnout figure as the denominator, the raw numbers . . . can be expressed in the following percentage terms: Burdens on registration would have affected 3.0% of the number of African Americans who turned out to vote; . . .[48]

106. After terming my description of documented facts as "speculative," the Thornton Declaration then chides me for not adjusting for future factors, "such as the expected future levels of effects such as feelings of citizen empowerment, interest in and concern about the election, and political mobilization by parties, candidates and other political organizations."[49] Reporting verifiable facts is thus termed "speculative," while at the same time it is suggested that speculation is scientific analysis.

107. Finally, at paragraph 41 of the Thornton Declaration, it is noted that neither I, nor the other Plaintiffs' experts, address why the number of out-of-precinct ballots rose from 2008 to 2012. In response, I will note that, first, *why* the number of out-of-precinct ballots rose is immaterial to the fact that African Americans availed themselves of the procedure more often than whites (proportionally) in each year. Second, the growth in out-of-precinct voting would seem to suggest that something happened in the administration of North Carolina elections

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[47] Stewart Declaration, ¶ 19. Upon a review of my report, I realize I should have used the number 30,612 instead of 31,127. The number 31,127 is the total number of African Americans who were registered while early voting was ongoing, which includes a small number of new registrants who were recorded during this period without voting early — probably because they registered by mail and the registrations were recorded during this time, despite the fact they could not vote in the 2012 presidential election. The correct number, 30,612, is taken from Table 7 of my original declaration, which reports the number of black registrants during the early voting period who also voted early. Dividing 30,612 into 1,046,424 yields a result that 2.9% of African Americans would have been affected by the end of same-day registration.
[48] *Ibid*, ¶ 20.
[49] Thornton Declaration, ¶ 39.

between 2008 and 2012 to cause more North Carolinians of both races (but more often African Americans than whites) to find themselves out of their residential precinct when they went to vote. This increase suggests that the practice of ending out-of-precinct voting may only present obstacles to an even larger fraction of voters in future years.

CONCLUSION

108. Having reviewed the declarations by Mr. Thomas H. Fetzer, Dr. Thomas Brook Hofeller, Dr. Donald Schroeder, Dr. Janet R. Thornton, and Mr. Thomas P. Trende, I make no changes to the substance of my analysis or to my conclusions.

I declare under penalty of perjury that the foregoing is true and correct. Executed this 2 day of May, 2014.

Charles Stewart III

Exhibit 1. Reported voting wait times in 2008 and 2012 (updated).
(Source: Survey of the Performance of American Elections.)

	2008					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	44.1%	33.3%	48.5%	20.2%	4.4	-13.1
Less than 10 minutes	27.4%	28.0%	16.0%	24.1%	-11.4	-3.9
10-30 minutes	15.9%	20.4%	16.5%	24.2%	0.6	3.8
30 min. - 1 hr.	8.5%	11.4%	14.8%	21.5%	6.3	10.1
More than 1 hr.	4.0%	7.0%	4.2%	10.0%	0.2	3.0
N	6,099	1,679	71	92		

	2012					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	39.6%	39.1%	31.5%	25.7%	-8.1	-13.4
Less than 10 minutes	32.2%	28.5%	38.7%	26.3%	6.5	-2.2
10-30 minutes	18.4%	19.1%	24.9%	25.5%	6.5	6.4
30 min. - 1 hr.	7.5%	9.8%	4.9%	21.0%	-2.6	11.2
More than 1 hr.	2.3%	3.5%	0.0%	1.5%	-2.3	-2.0
N	5,958	1,651	75	96		

	Combined					
	Nationwide		North Carolina		N.C. minus Nationwide	
	Election Day	Early	Election Day	Early	Election Day	Early
Not at all	41.9%	36.1%	39.4%	22.9%	-2.5	-13.2
Less than 10 minutes	29.7%	28.2%	28.1%	25.1%	-1.6	-3.1
10-30 minutes	17.1%	19.8%	21.0%	24.8%	3.9	5.0
30 min. - 1 hr.	8.0%	10.6%	9.6%	21.3%	1.6	10.7
More than 1 hr.	3.2%	5.3%	2.0%	5.9%	-1.2	0.6
N	12,057	3,330	146	188		