

Supplementary Material for “Explaining the Blue Shift in Election Canvassing”

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Published in the *Journal of Political Institutions and Political Economy*, Vol. 1, No. 2

Supplemental Materials A

Regional Differences in the Growth of Mail Ballots

The past three decades have seen a secular trend against Americans voting in traditional precincts on Election Day, moving increasingly to modes that allow voting beforehand, either in-person at an early-vote center or by receiving a ballot by mail.¹ Twenty years ago, approximately 90 percent of voters cast their ballots in-person on Election Day, with only about 3 percent voting at an early-vote center and 7 percent voting by mail, or “absentee.” In the most recent federal elections, only about 60 percent of ballots have been cast in traditional Election-Day precincts, with the remaining voters distributing themselves nearly evenly across early in-person voting and voting by mail.

One pattern that has gone little noticed is how strongly the trend away from voting in precincts on Election Day has followed distinctly regional patterns. These patterns are illustrated in Figure A1, below, which shows the prevalence of voting modes since 1996, broken down by U.S. Census Bureau regions.

As the data presented in Figure A1 make clear, the move away from Election-Day voting has been the most strongly driven by western states, in which only one-third of votes are cast on Election Day. The decline in the West of Election-Day voting is almost entirely due to the

¹ Here, we refer to receiving a ballot by mail as “mail balloting” or “mail voting,” in deference to the states that have abandoned the term “absentee balloting.” In using the term “mail voting,” it is important to keep in mind that a large percentage of mail voters actually delivery their marked ballot back to election be counted in person. This is especially true in “vote-by-mail” or “vote-at-home” states. However, in the interest of minimizing confusion and staying close to most common usage, we use the terms “mail voting” and “vote-by-mail.”

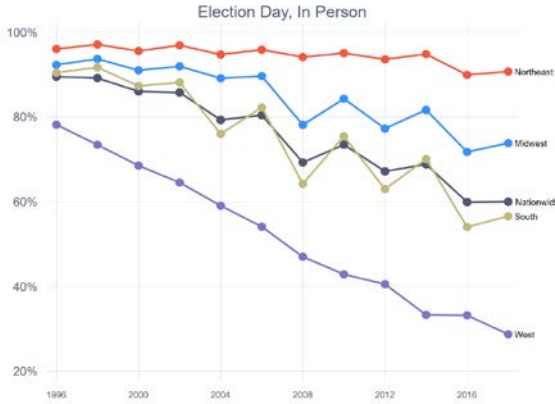
growth of mail voting, although there has been a small increase in early in-person voting in that region, as well. The South's abandonment of Election-Day voting has paralleled the national trend, with southern voters shifting primarily to in-person early voting, not mail balloting. The Midwest and Northeast have lagged the nation in abandoning Election-Day voting.

From the perspective of this paper, the main implication of these trends is that mail ballots tend to take a long time to process. If they are numerous and if states allow mail ballots to arrive after Election Day, although postmarked by Election Day, then there will be a significant number of overtime votes. These conditions tend to characterize western states more than the rest of the country. For that reason, it is not surprising that the growth in overtime votes since 2000 in the West has outpaced that of the rest of the country. Furthermore, because the large western states tend to be bluer than the smaller western states, it is also not surprising that the blue shift in the West is so pronounced, when it is considered as a region.

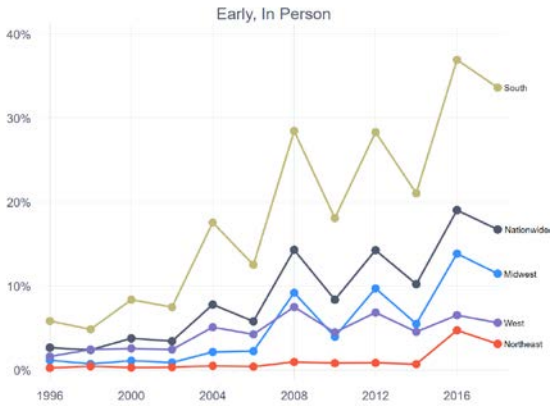
In the body of the paper, we also find that the overtime vote in western states outpaced that of the rest of the nation from the 1940s to the 1960s. That pattern cannot be explained by a difference in voting modes. Prior to the mid-1960s, all the western states had "for cause" absentee ballot laws which kept the number of mail ballots low. The passage of the "no-excuse" absentee ballot law in California in the mid-1960s set off the rise in the amount of mail balloting in the West. But, at that time, the number of mail ballots was relatively small, and the overtime vote from the region was not wildly out of sync with the rest of the nation.

Figure A1. Regional Trends in Voting Modes, 1996 – 2018.

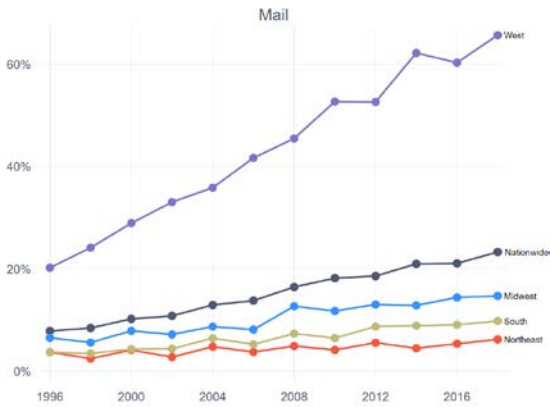
a.



b.



c.

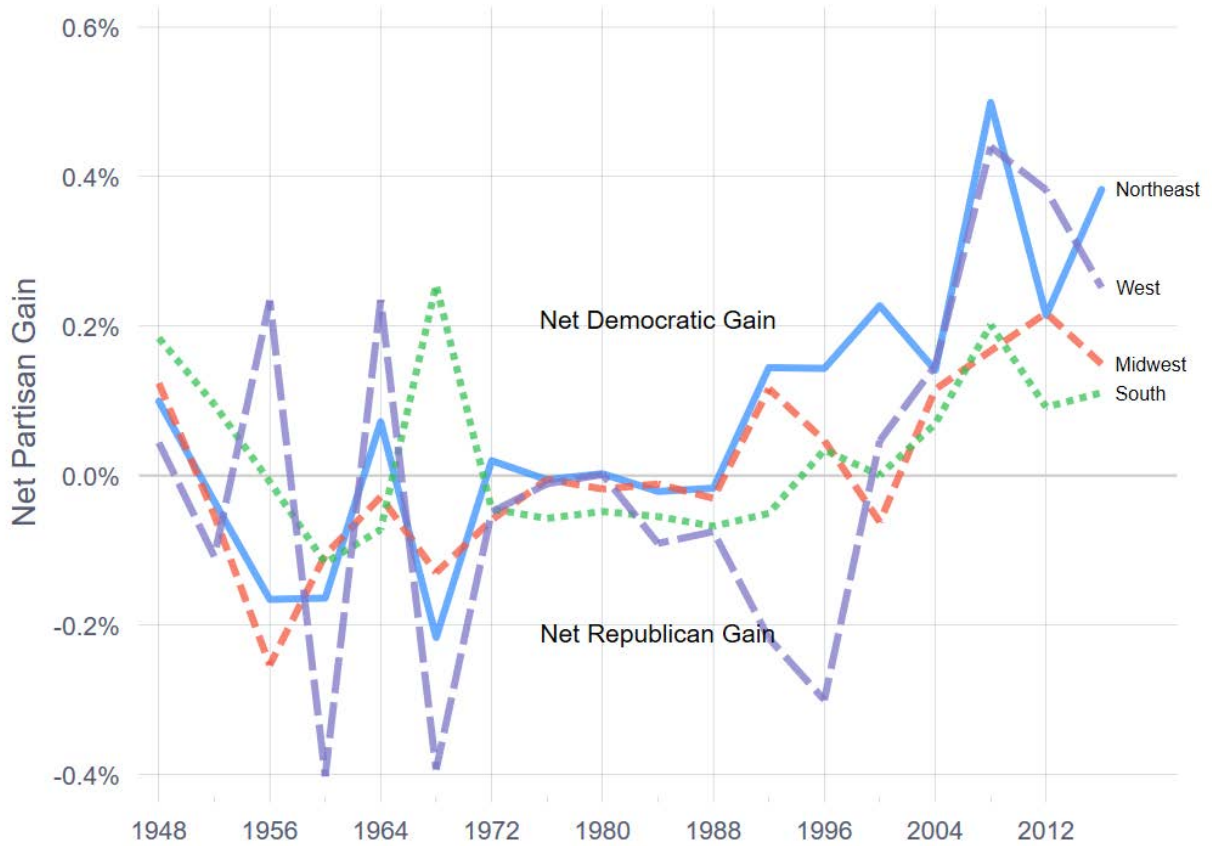


Supplemental Materials B

Regional Variation in Net Partisan Gain

Figure B1 shows net partisan gain by Census region for the 1948–2016 presidential elections. Visual inspection reveals a great deal of regional variation prior to 1972, along with year-to-year variation. The 1972–1988 period saw very little regional heterogeneity, although the West started trending in a red-shift direction around 1984. Starting with the election of 2004, all of the regions started trending toward a blue-shift, where they all remains in 2016.

Figure B1. Average net partisan gain by region, 1948–2012.



Supplemental Materials C

Possible Overtime Vote and Blue Shift Growth in Elections for U.S. Senate and Governor

We have gathered data to explore whether there are “overtime coattails” in presidential years by gathering overtime vote data related to U.S. senatorial and gubernatorial elections. However, there are holes in that data that limit the analysis. The most important hole is that the *New York Times* ceased regularly reporting election-night vote totals for U.S. Senate and gubernatorial elections around 2012, which requires us to seek alternative data sources. The *Washington Post* has been the most reliable, but in some cases, we have had to use local newspapers. Using these other data sources introduces problems of temporal comparability in an analysis that argues the size and nature of the overtime vote has changed over time, most rapidly in recent years. Furthermore, even when the *Times* regularly reported election-night results, in some years it did not. For instance, it did not report nationwide U.S. Senate election returns in 1968 and 1976, which also makes it impossible to address the important question of whether there were “overtime vote coattails” in these years.

With these caveats about the temporal coverage of the U.S. Senate and gubernatorial data, we present the data we have gathered in this appendix. We start with U.S. Senate data. Figure C1 shows the relative size of the overtime vote, as a percentage of the final canvass, for each state, and then the national average. Figure C2 shows the partisan gain

Although the patterns not as clear-cut as the presidential time series, they are similar. For the Senate, we see a slight rise in the size of the overtime vote since the 1980s. More important, there has been a notable nationwide blue shift in recent years, with the size being greatest in the presidential election years of 2012 and 2016.

Figure C1. Size of U.S. Senate Overtime Vote by State and Nationwide, 1948–2018.

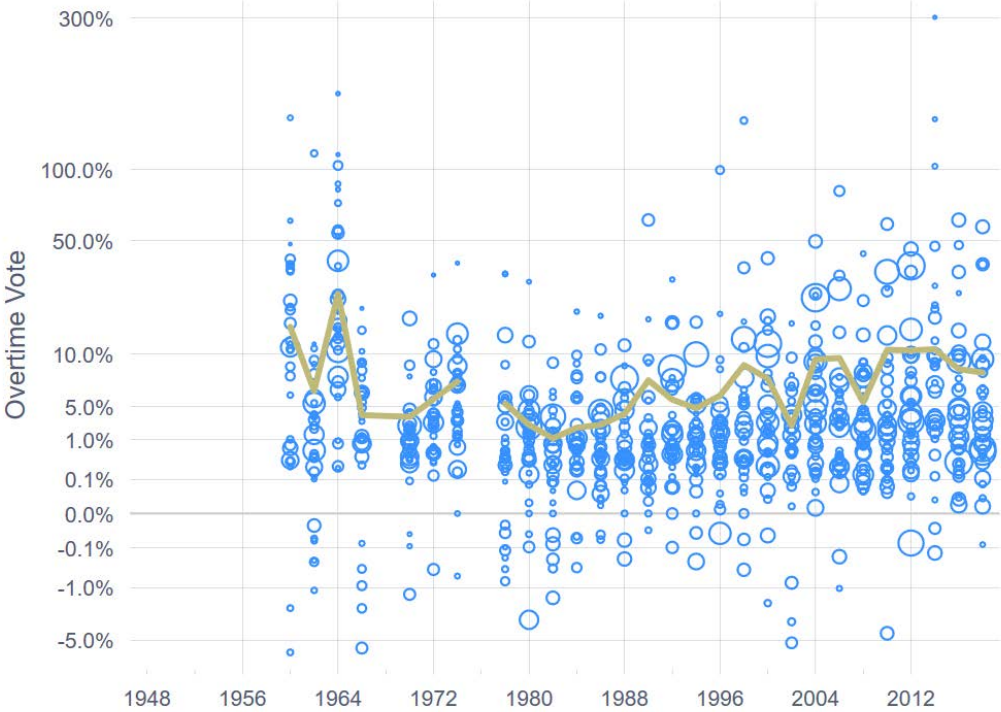
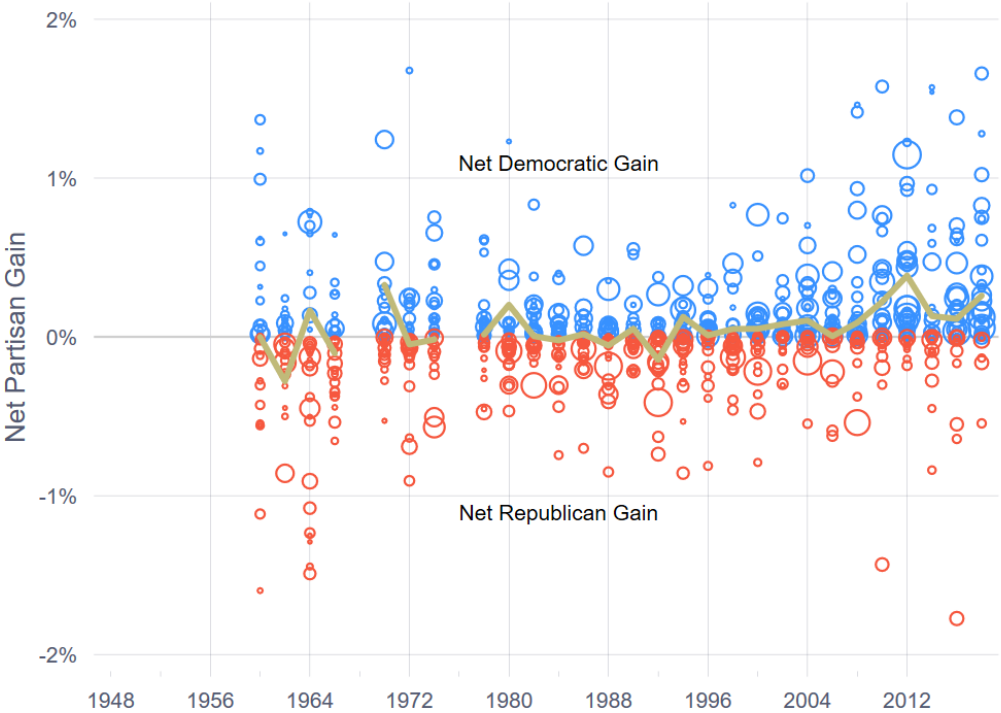


Figure C2. Net Partisan Gain by State in U.S. Senate Elections, 1960–2018.



Figures C3 and C4 show the comparable data for gubernatorial elections. Here, too, we see a secular rise in the size of the overtime vote since the 1980s. The partisan gain measure shows a different pattern in recent years. There has been a discernible nationwide blue shift in gubernatorial race in the three most recent *off-year* election, 2010, 2014, and 2018. The size of the average blue shift has also grown, from 0.17 points in 2010 to 0.42 points in 2014 and 0.62 points in 2018. However, there has been a *red* shift in the two most recent on-year elections, of 0.9 points (2012) and 0.25 points (2016).

This seesaw pattern in recent years may simply reflect the different collection of states holding gubernatorial elections in off years rather than presidential years. If we group the states in two-election-year buckets, there ends up being a net blue shift for the past three complete gubernatorial election cycles.

In any case, the initial data about the overtime vote and the partisan shift for U.S. Senate and gubernatorial seems to share enough similarities with the presidential patterns to suggest a common mechanism at work. At the same time, there are enough differences to suggest that whatever those mechanisms are, they are stronger and more consistent with the presidential vote.

Figure C3. Size of Gubernatorial Overtime Vote by State and Nationwide, 1948–2018.

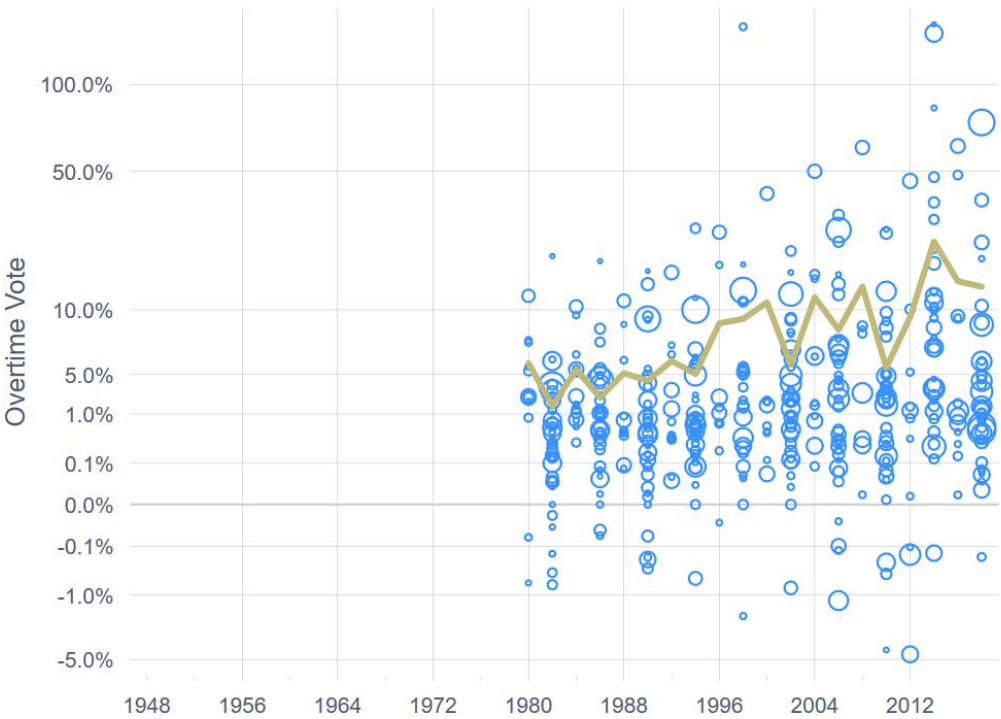
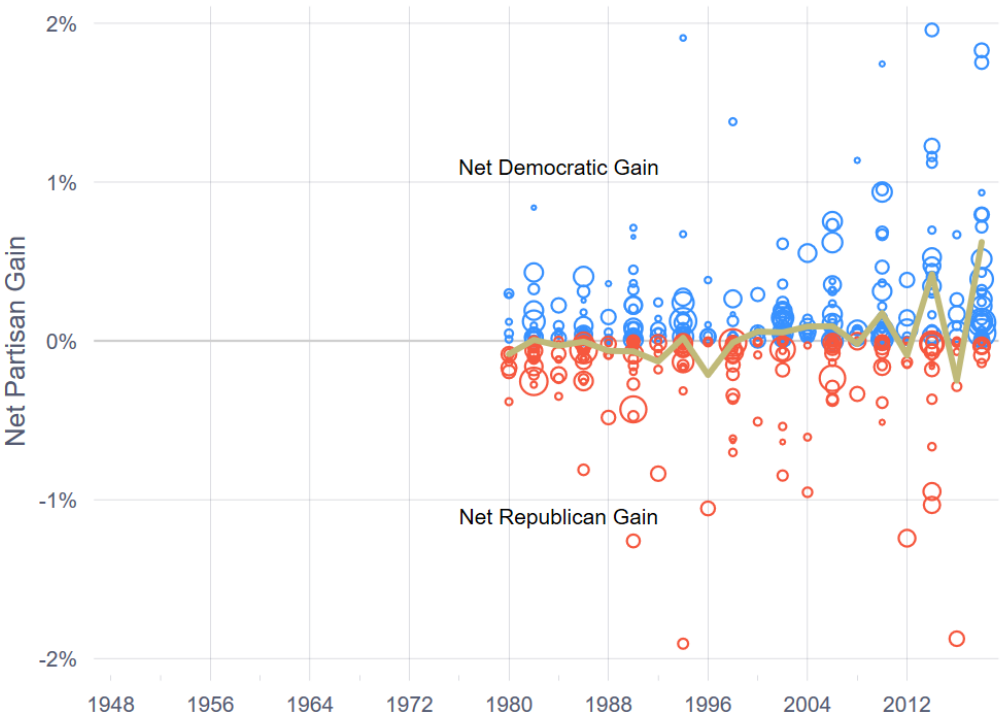


Figure C4. Net Partisan Gain by State in Gubernatorial Elections, 1960–2018



Supplemental Materials D

Overtime Votes in Virginia

In the article accompanying this material, we examined the magnitude of the blue shift at the state level in 2016 and found that it was correlated with the counting of provisional and mail ballots and with state-level partisanship. Because these data were highly aggregated, it would be nice to conduct disaggregated analysis, to see whether these relationships hold within states, as well. Virginia provides the opportunity to conduct just such an analysis. That is because starting with the November 2005 general election, the Virginia Board of Elections has published a “change log” following every state election.² The change log accounts for changes to election returns for offices throughout the state, ranging from the top of the ballot down to offices such as mayor and school board. Each row in the data file includes identifying information about the office and candidate affected, the precinct involved, the date and time the change went into effect, and the number of votes involved.

The log file records vote changes associated with three major categories: certified votes (usually the correction of a mistake, the recording of votes for a precinct that had previously not reported, or the reporting of corrected central-count absentee ballot counts), overvotes (which, of course, are not associated with individual candidates), and provisional ballots counted.

In the 2016 Virginia change-log file, 3,838 records (out of 12,473 total) pertained to the presidential election. These 3,838 records account for a net addition of 564,415 votes for candidates on the ballot — 387,939 due to central-count absentee ballots, 171,894 due to other changes to certified vote counts, and 4,582 due to provisional ballots.

² The ftp site containing these files is located at https://voterinfo.sbe.virginia.gov/SBE_CSV/ELECTIONS/ELECTIONCHANGES/.

The 564,415 added votes accounted for in the change log were part of the 3,982,752 votes in the certified count in Virginia in 2016. Subtracting the votes accounted for in the change log from the certified vote total results in an estimate that 3,418,337 votes were reflected in the results that were released immediately upon the close of polls on Election Day. These initial results accounted for only 86% of the votes that would eventually be included in Virginia's certified presidential vote count.

Digging down further into the change log, we see that Hillary Clinton gained a total of 339,841 votes compared to 195,291 for Donald Trump. This means that Clinton received 60.2% of the votes reflected in the change log, compared to 34.6% for Trump.³ The application of a little arithmetic thus suggests that the initial Election-Day results reflected a narrow 48.0%–46.1% lead for Clinton. With the change-log votes favoring Clinton 60.2%–34.6%, this initial narrow lead grew to a slightly more comfortable 49.8%–44.4% margin in the certified count.

Because Virginia's initial Election-Day counts showed a narrow lead for Clinton that grew in the coming days, Virginia's 2016 blue shift played out without much drama. In that regard, Virginia's post-Election-Day experience was typical of other states.

The 2016 blue shift in the Old Dominion was primarily accounted for by the addition of absentee ballots and the correction of previously reported election returns, rather than through the addition of provisional ballots. This is illustrated in Table D1, which describes the source of the new votes added to the Clinton and Trump totals in the change log. Clinton extended her lead over Trump in every category of vote accounted for by the change log. She had a 35.2-point lead over Trump among the central-count absentee ballots, a 23.4-point lead among provisional

³ The remaining 29,283 additional votes in the change log were allocated to minor-party candidates and write-ins.

ballots, and a 4.2-point lead among corrected votes. Two-thirds of the change-log votes were absentee ballots, with less than 1% coming from provisional votes.⁴

[Table D1 about here]

We were curious whether these patterns for the 2016 Virginia presidential election held across time and offices in Virginia. To satisfy this curiosity, we calculated the source of change-log votes for the three major state-level offices in Virginia — president, governor, and U.S. senator — from 2008 to 2018.

Perhaps the most interesting race during this period from the perspective of overtime elections was the 2013 Attorney General race, which was eventually won by the Democrat Mark Herring against the Republican Mark Obenshain by a 165-vote margin: 1,103,777 vs. 1,103,612. The initial count had Obenshain ahead slightly, but news accounts reported how the counting of provisional ballots, along with the correction of various tabulation errors discovered during the canvass, led to Herring eventually pulling ahead and winning. Obenshain requested a recount, but during that proceeding, Herring pulled even further ahead, which led to Obenshain to concede the race. Following the recount, Herring's margin was set at 907 votes. Using the change log, we calculate that the election-night margin placed Obenshain ahead by 6,545 votes. Although some press accounts attributed Herring's victory in part to the counting of provisional ballots, the change log confirms other reporting that the largest part of Herring's gain in the post-Election-Day count was due to changes to the previously reported vote totals.

⁴ An analysis of the 2012 change log for president revealed similar overall results, most importantly, that the Democratic nominee, Barack Obama, was advantaged in the change-log vote over the Republican nominee, Mitt Romney. The main difference with 2012 is that corrected vote totals made up a larger fraction of the change-log vote (50% in 2012, compared to 31% in 2016). The numerical dominance of absentee ballots-to-provisional ballots was very similar. See Foley and Stewart (2015, Table 3).

Table 5 summarizes the number of votes involved. Table D2 describes the distribution of change-log votes for the Democratic and Republican candidates in these races. To aid in the discussion of these number, we have graphed the Table D2 data in Figure D1. Figure D1 is constructed so that the x -axis is the percentage received by the indicated party's candidate in the initial vote count, while the y -axis is the vote share for the particular component of change-log votes.

[Tables D1 and D2 about here]

[Figure D1 about here]

We focus first on the overall shift in votes from Election Day to certification. Here, presidential election years have stood out in, in terms of both the number and directional tilt of votes accounted for after Election Day. Nearly 826,000 votes were reflected in the presidential election in the 2008 change log; nearly 733,000 votes appeared in the U.S. Senate election. In 2012, over 646,000 votes for president and 673,000 for Senate were reflected in the change log. In 2016, when there was no U.S. Senate race on the ballot, the change log contained over 564,000 votes. This is compared to 77,029, 131,622, and 110,733 votes in the gubernatorial elections of 2009, 2013, and 2017, and 93,418 and 251,398 votes in the midterm U.S. Senate elections of 2014 and 2018.

While we can only speculate at this point, the greater number of change-log votes in presidential election years is likely due to at least two factors. The first is simply the matter of the administrative burdens of dealing with the volume of votes cast in presidential elections, which are about 1/3 greater in number than in the off-year statewide elections. The second factor is the activity of the presidential campaigns, which have driven more of their supporters to vote absentee than have the statewide campaigns in non-presidential years. For instance, in the 2008,

2012, and 2016 presidential elections, the total number of absentee ballots cast amounted to 494,406, 437,891, and 562,547, respectively,⁵ compared to 96,874, 119,328, and 186,333 absentee ballots in the gubernatorial elections of 2009, 2013, and 2017, and 121,326 and 332,668 absentee ballots in the mid-term U.S. Senate elections of 2014 and 2018.⁶ These data illustrate another underappreciated point: not only does turnout increase in presidential years, but the nature of the turnout (i.e., ratio of absentee to in-person voting) changes between presidential and nonpresidential years.

Not only are the numbers of change-log votes much greater in presidential years, the Democratic partisan tilt (i.e., the blue shift) has only regularly appeared in presidential years. In each presidential election year, the Democratic presidential candidate has received a boost of at least one and a half percentage points due to the addition of change-log votes—3.0 points in 2008, 1.6 points in 2012, and 1.7 points in 2016. The blue shifts in the on-year U.S. Senate races were also greater than one and a half points: 2.2 points in 2008 and 1.6 points in 2012. In contrast, in the off-year Senate races, there was actually a small *red* shift in 2014 (0.1 points) and a 0.9-point blue-shift in 2018. The 2009 gubernatorial race saw no net vote shift in the overtime vote, a 0.2-point blue shift in 2013, and a 0.6-point shift in 2017. Understanding this dynamic helps avoid conspiracy theories associated with the overtime vote: just because there is a greater blue shift in a presidential year, it does not follow that election officials are manipulating the count; instead, the self-selection of who turns out to vote—as well as choice of voting method—

⁵ In presidential years, the number of absentee ballots cast in the Senate race are, of course, close to the number cast in the presidential race. For 2008 and 2012, the number of absentee ballots cast in the Senate contest was 478,719 and 430,975, respectively.

⁶ The number of absentee ballots accounted for in the change logs are of course only those counted and reported after Election Day. With the exception of presidential election years, the bulk of absentee ballots were counted and reported on Election Day, and thus do not appear in the change log.

that is distinctive in presidential years can go a long way to explaining why there is a greater blue shift in presidential elections.

Late-added absentee votes have favored Democratic candidates in Virginia in all but one of the elections analyzed here. The exception is the gubernatorial election of 2009, where the Republican nominee Bob McDonnell significantly outpaced the Democratic nominee Creigh Deeds in both the vote counted on Election Day and afterwards. For all the remaining elections, Democrats have out-performed Republican candidates among change-log absentee ballots, compared to the vote counted on Election Day, by an average of 21.8 points.

Provisional ballots have favored Democratic candidates in each of the ten elections we have examined in this paper. Of course, the number of counted provisional ballots in each of these elections has been relatively small, but it is consistent with nationwide patterns we discussed earlier that associate provisional ballots disproportionately with Democrats.

Virginia provides a window into the details of one state's overtime vote. At least since the mid-2000s, approximately 15% of the vote has been counted in overtime during presidential years, 5% in off-years. The state has exhibited a general blue shift at the top of the ballot that has been the largest and most persistent in presidential election years. Provisional ballots have always provided a net overtime vote gain for the Democrats, but the overall small proportion of provisional ballots—roughly 1-to-2 percent of the vote, depending on the election—means that provisional ballots are not the primary contributor to the blue shift in Virginia. The bulk of the blue shift is caused by late-counted absentee ballots, which are more-or-less of a factor, depending on whether the wealthiest statewide Democratic campaigns are emphasizing absentee voting.⁷

⁷ Virginia still does not have official in-person early voting, and it still requires an excuse to vote absentee. However, one of those excuses is “working outside the county on Election Day.” This excuse pertains to so many

The puzzle about the sources of the overtime vote and the blue shift is why post-Election-Day corrections have tended to favor Democratic statewide candidates. This is the portion of the overtime vote-counting process that is likely to stoke the greatest controversy and be open to charges of partisan manipulation. Clearly, Democratic parts of the state are more likely to submit initial vote totals that are incorrect and need to be changed—to add more Democratic votes. This is clearly a detail of Virginia’s election administration that bears further scrutiny. But, to be clear, absentee ballots remain a greater factor, relative to purported error corrections, and as long as the blue shift caused by absentee ballots can be explained by a larger ratio of Democratic votes among these late-counted absentee ballots than the election as a whole, then the explanation for the blue shift remains genuine voter choice rather than the potential of election administration manipulation.

Virginians, especially those in Northern Virginia and in the larger independent cities throughout the state, that local election officials in many places have encouraged inter-county commuters to vote absentee. It seems logical that this uneven encouragement of de facto early voting in Democratic strongholds of the state could be contributing to the growing blue shift in the state.

III. The Blue Shift in Virginia

In the previous section, we examined the magnitude of the blue shift at the state level in 2016 and found that it was correlated with the counting of provisional and mail ballots and with state-level partisanship. Because these data were highly aggregated, it would be nice to conduct disaggregated analysis, to see whether these relationships hold within states, as well. Virginia provides the opportunity to conduct just such an analysis. That is because starting with the November 2005 general election, the Virginia Board of Elections has published a “change log” following every state election.⁸ The change log accounts for changes to election returns for offices throughout the state, ranging from the top of the ballot down to offices such as mayor and school board. Each row in the data file includes identifying information about the office and candidate affected, the precinct involved, the date and time the change went into effect, and the number of votes involved.

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[Tables 5 and 6 about here]

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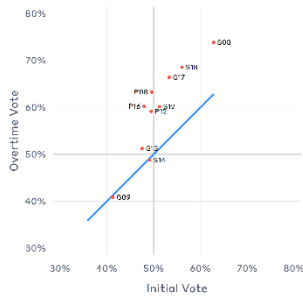
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The puzzle about the sources of the overtime vote and the blue shift is why post-Election-Day corrections have tended to favor Democratic statewide candidates. This is the portion of the overtime vote-counting process that is likely to stoke the greatest controversy and be open to charges of partisan manipulation. Clearly, Democratic parts of the state are more likely to submit initial vote totals that are incorrect and need to be changed—to add more Democratic votes. This is clearly a detail of Virginia’s election administration that bears further scrutiny.

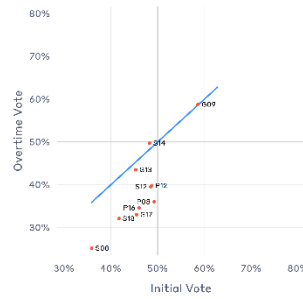
¹⁴ Virginia still does not have official in-person early voting, and it still requires an excuse to vote absentee. However, one of those excuses is “working outside the county on Election Day.” This excuse pertains to so many Virginians, especially those in Northern Virginia and in the larger independent cities throughout the state, that local election officials in many places have encouraged inter-county commuters to vote absentee. It seems logical that this uneven encouragement of de facto early voting in Democratic strongholds of the state could be contributing to the growing blue shift in the state.

Figure D1. Partisan vote share of change-log votes, Virginia, 2008 – 2019.

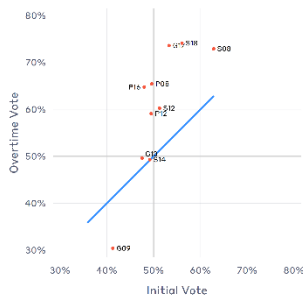
Democrats
Overall



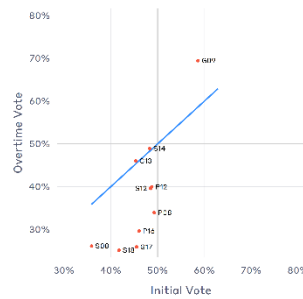
Republicans
Overall



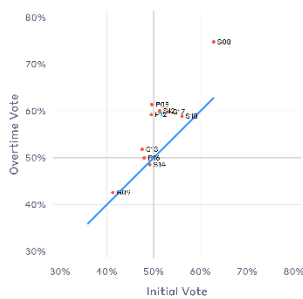
Absentee votes



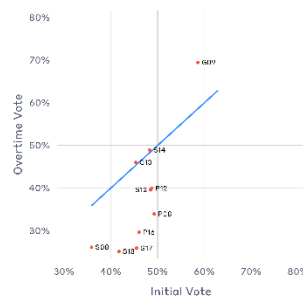
Absentee votes



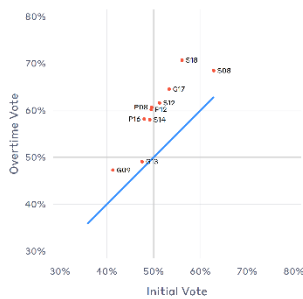
Certified votes



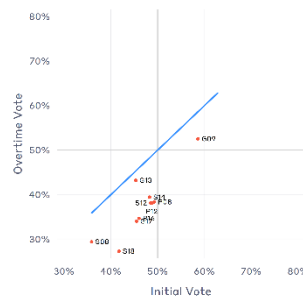
Certified votes



Provisional ballots



Provisional ballots



Note: The tokens are coded so that the first letter indicates the office (President, Governor, Senator) and the numbers indicate the election year.

Table D1. Source of additional votes for candidates in the Virginia change log, 2016.

Source	Raw votes		As pct. of all votes in category	
	Clinton	Trump	Clinton	Trump
Absentee votes	251,211	114,932	64.8%	29.6%
Certified votes	85,964	78,769	50.0%	45.8%
Provisional ballots	2,666	1,590	58.1%	34.7%

Table D2. Summary of change-log votes for top statewide offices in Virginia, 2008—2018.

Election year	Office	Dem.	Rep.	Democrat			Republican			All		
				Initial votes	Added votes	Final votes	Initial votes	Added votes	Final votes	Initial votes	Added votes	Final votes
2008	President	Obama	McCain	1,436,882	522,650	1,959,532	1,427,339	297,666	1,725,005	2,897,406	825,854	3,723,260
	Senate	Warner	Gilmore	1,828,060	541,267	2,369,327	1,044,336	184,494	1,228,830	2,910,372	732,922	3,643,294
2009	Governor	Deeds	McDonnell	809,346	9,563	818,909	1,096,470	67,053	1,163,523	1,907,905	77,029	1,984,934
2010	No statewide											
2011	No statewide											
2012	President	Obama	Romney	1,589,195	382,625	1,971,820	1,565,028	257,494	1,822,522	3,207,966	646,523	3,854,489
	Senate	Kaine	Allen	1,604,960	405,107	2,010,067	1,519,078	266,464	1,785,542	3,128,965	673,231	3,802,196
2013	Governor	McAuliffe	Cuccinelli	1,002,347	67,442	1,069,789	956,077	57,277	1,013,354	2,108,692	131,622	2,240,314
2014	Senate	Warner	Gillespie	1,028,091	45,576	1,073,667	1,009,508	46,432	1,055,940	2,091,055	93,418	2,184,473
2015	No statewide											
2016	President	Clinton	Trump	1,641,632	339,841	1,981,473	1,574,152	195,291	1,769,443	3,418,473	564,279	3,982,752
2017	Governor	Northam	Gillespie	1,335,638	73,537	1,409,175	1,139,139	36,592	1,175,731	2,503,549	110,733	2,614,282
2018	Senate	Kaine	Stewart	1,737,993	172,377	1,910,370	1,293,588	80,725	1,374,313	3,099,975	251,398	3,351,373

Sources: “Added votes” calculated from state change logs. “Final votes” are taken from David Leip’s “Atlas of U.S. Presidential Elections,” <https://uselectionatlas.org/>. “Initial votes” calculated by subtracting added votes from final votes.

Table D3. Detail of Virginia change-log votes for statewide offices, 2008 – 2018.

Election year	Office	Democrat					Republican				
		Initial vote pct.	Final vote pct.	Change log			Initial vote pct.	Final vote pct.	Change log		
				Absentee	Certified	Provisional			Absentee	Certified	Provisional
2008	President	49.6%	52.6%	65.4%	61.4%	60.7%	49.3%	46.3%	33.9%	37.9%	38.4%
	Senate	62.8%	65.0%	72.9%	74.8%	68.5%	35.9%	33.7%	26.1%	24.2%	29.4%
2009	Governor	41.3%	41.3%	30.4%	42.6%	47.3%	58.6%	58.6%	69.5%	57.0%	52.6%
2010	No statewide										
2011	No statewide										
2012	President	49.5%	51.1%	59.1%	59.2%	60.2%	48.7%	47.2%	39.9%	39.7%	38.1%
	Senate	51.2%	52.8%	60.3%	60.1%	61.6%	48.5%	46.9%	39.6%	39.6%	38.2%
2013	Governor	47.5%	47.7%	49.6%	51.8%	49.1%	45.3%	45.2%	46.0%	42.6%	43.2%
2014	Senate	49.2%	49.1%	49.3%	48.6%	58.0%	48.3%	48.3%	48.9%	50.0%	39.5%
2015	No statewide										
2016	President	48.0%	49.7%	64.8%	50.0%	58.2%	46.0%	44.4%	29.6%	45.8%	34.7%
2017	Governor	53.3%	53.9%	73.6%	59.8%	64.6%	45.5%	45.0%	25.9%	39.6%	34.1%
2018	Senate	56.1%	57.0%	74.1%	58.9%	70.7%	41.7%	41.0%	25.1%	44.3%	27.3%

