**Supplementary Material**

**Appendix A: Definitions of the Reforms**

1. EDR: “Permits eligible voters to both register and vote on Election Day.” (Burden et al 2014; 96)
2. SDR: “Permits people to both register and vote in a single act prior to Election Day.” (Burden et al 2014; 97)
3. Portability: “Registered voters may be permitted to transfer their registration and vote on Election Day if they have moved anywhere within certain states, a policy innovation I call ‘statewide portable registration’” (McDonald 2008; 492).
	1. Also referred to as permanent voter registration: “Several states have established systems of portable or “permanent” registration under which registered voters who move within a state can cast ballots that count on Election Day — even if they don’t submit new registration forms at their new address before the voter registration deadline.” (Skaggs and Blitzer 2009; 2)
4. AVR: “Automatic voter registration (AVR) makes registering “opt-out” instead of “opt-in.” Eligible citizens who interact with government agencies, such as the Department of Motor Vehicles, are registered to vote or have their existing registration information updated automatically, unless they actively decline. The voter’s information is transmitted to election officials electronically rather than via paper registration forms.” (Brennan Center [b] 2020)
5. Pre-Registration: “States with pre-registration laws enable young people to register as future voters, even if they won’t turn 18 before Election Day. Voters are then automatically registered once they turn 18.” (Brennan Center [e] 2017)
6. Early Voting: “Constitutes practices that permit voters to cast ballots without excuse prior to Election Day.” (Burden et al 2014; 96)
	1. We include both states with no-excuse absentee voting and those with early voting (where voters go into polling places to vote) as having “early voting.” Some states have both - others have just one of the two - so the states are coded as having “early voting” starting from the year either reform was adopted.
7. Online: “Online voter registration follows essentially the same process, but instead of filling out a paper application, the voter fills out a form via an Internet site, and that paperless form is submitted electronically to election officials. In most states the application is reviewed electronically; if the request is confirmed to be valid, the new registration is added to the state’s voter registration list.” (NCSL [g] 2020)
8. Vote by Mail: “Whether the law authorizes jurisdictions to conduct statewide elections entirely by mail” (Cemenska et al 2009)
9. All Mail Default: “In a handful of states, a ballot is automatically mailed to every eligible voter (no request or application is necessary). Polling places may also be available for voters who would like to vote in-person.” (NCSL [e] 2020)
10. Voter ID: “Voter ID laws can be categorized in two ways. First, the laws can be sorted by whether the state asks for a photo ID or whether it accepts IDs without a photo as well. Second, the laws can be divided by what actions are available for voters who do not have ID. These two categorization schemes can and do overlap.” (NCSL [b] 2017)
	1. Photo ID: “Some states request or require voters to show an identification document that has a photo on it, such as a driver’s license, state-issued identification card, military ID, tribal ID, and many other forms of ID.” (NCSL [b] 2017)
	2. Non-photo ID: “Other states accept non-photo identification such as a bank statement with name and address or other document that does not necessarily have a photo.” (NCSL [b] 2017)
	3. Non-strict: “At least some voters without acceptable identification have an option to cast a ballot that will be counted without further action on the part of the voter.” (NCSL [b] 2017)
	4. Strict: “Voters without acceptable identification must vote on a provisional ballot and also take additional steps after Election Day for it to be counted.” (NCSL [b] 2017)

**Appendix B: State by State Breakdown of Electoral Reforms** [[1]](#footnote-1)[[2]](#footnote-2)[[3]](#footnote-3)

*\*\*See table below for Voter ID*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | EDR | SDR | Portability | AVR | Preregistration | Early Voting | Online | Mail Voting | All Mail Default |
| Alabama |  |  |  |  |  |  | 2016 |  |  |
| Alaska |  |  |  | 2016 | 2015 | 1960 | 2015 | 1972 |  |
| Arizona |  |  |  |  |  | 1991 | 2002 | 2018 |  |
| Arkansas |  |  |  |  |  | 1995 |  |  |  |
| California | 2012 | 2012 |  | 2015 | 2014 | 1978 | 2012 | 2016 |  |
| Colorado | 2013 | 2013 | 1995-22012[[4]](#footnote-4) | 2017 | 2013 | 1992 | 2009 | 1992 | 2013 |
| Connecticut | 2013 |  |  | 2016 | 2019 |  | 2012 |  |  |
| Delaware |  |  | 1995 |  | 2010 |  | 2014 |  |  |
| District of Columbia | 2010 | 2010 | 1995-22009[[5]](#footnote-5) | 2016 | 2009 | 2009 | 2014 |  |  |
| Florida |  |  | 1974[[6]](#footnote-6) |  | 2008 | 2001 | 2015 | 2019 |  |
| Georgia |  |  |  | 2016 |  | 2003 | 2014 |  |  |
| Hawaii | 2014 | 2014 | 2013 only |  | 1993 | 1993 | 2012 | 2004 | 2019 |
| Idaho | 1994 |  |  |  |  | 1970 | 2016 | 2004 |  |
| Illinois | 2015 | 2005 |  | 2017 |  | 2005 | 2013 |  |  |
| Indiana |  |  |  |  |  | 2002 | 2009 |  |  |
| Iowa | 2007 | 2007 |  |  | 2010 | 1990 | 2015 |  |  |
| Kansas |  |  |  |  |  | 1995 | 2009 |  |  |
| Kentucky |  |  |  |  |  |  | 2016 |  |  |
| Louisiana |  |  |  |  | 2014 | 2005 | 2009 |  |  |
| Maine | 1973 | 1973 |  | 2019 | 2019 | 1999 |  |  |  |
| Maryland | 2018 | 2013 | 2002-2017 | 2018 | 2010 | 2005 | 2011 | 2013 |  |
| Massachusetts |  |  |  | 2018 | 2014 | 2016 | 2016 |  |  |
| Michigan | 2018 | 2018 |  | 2018 |  | 2018 | 2018 |  |  |
| Minnesota | 1974 |  |  |  |  | 2013 | 2013 | 1987 |  |
| Mississippi |  |  |  |  |  |  |  |  |  |
| Missouri |  |  |  |  | 1993 |  | 2013 | 2013 |  |
| Montana | 2005 | 2005 |  |  |  |  |  | 1988 |  |
| Nebraska |  |  |  |  |  | 2000 | 2014 | 2008 |  |
| Nevada | 2019 | 2019 |  | 2018 | 2017 | 1987 | 2011 | 1972 |  |
| New Hampshire | 1996 |  |  |  |  |  |  |  |  |
| New Jersey |  |  |  | 2018 | 2015 | 2005 |  | 2008 |  |
| New Mexico | 2019 | 2019 |  | 2018 |  | 1993 | 2015 | 1996 |  |
| New York |  |  |  | 2020[[7]](#footnote-7) | 2019 | 2019 | 2011 |  |  |
| North Carolina |  | 2007 |  |  | 2009 & 2016[[8]](#footnote-8) | 1996 |  |  |  |
| North Dakota – no voter registration  |  |  |  |  |  | 2000 |  | 1996 |  |
| Ohio |  |  | 1995 |  |  | 2005 | 2016 |  |  |
| Oklahoma |  |  |  |  |  | 1991 | 2015 |  |  |
| Oregon |  |  | 2000 | 2015 | 2007 | 1985 | 2009 | 1984 | 2000 |
| Pennsylvania |  |  |  |  |  | 2019 | 2002 |  |  |
| Rhode Island |  |  |  | 2017 | 2010 |  | 2016 |  |  |
| South Carolina |  |  |  |  |  |  | 2012 |  |  |
| South Dakota |  |  | 1961[[9]](#footnote-9) |  |  | 2003 |  |  |  |
| Tennessee |  |  |  |  |  | 1996 | 2016 |  |  |
| Texas |  |  |  |  |  | 1988 |  |  |  |
| Utah | 2018 | 2018 | 2013-2017 |  | 2015 | 1996 | 2009 | 1992 | 2019 |
| Vermont | 2015 | 2015 |  | 2016 |  | 1993 | 2015 |  |  |
| Virginia |  |  |  | 2020[[10]](#footnote-10) |  |  | 2013 |  |  |
| Washington | 2018 | 2018 | 1991-2017[[11]](#footnote-11) | 2018 | 2018 | 1974 | 2007 | 2005 | 2011 |
| West Virginia |  |  | 2000-2004[[12]](#footnote-12) | 2016 | 2017 | 2002 | 2013 |  |  |
| Wisconsin | 1975 | 1975 |  |  |  | 2000 | 2016 |  |  |
| Wyoming | 1994 | 1994 |  |  | 2009 | 1991 |  | 2013 |  |

Voter ID Breakdown

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Non Strict Non Photo | Non Strict Photo | Strict Non Photo | Strict Photo |
| Alabama | 2003 | 2011 |  |  |
| Alaska | 1980 |  |  |  |
| Arizona |  |  | 2004 |  |
| Arkansas | 1999 | 2017 |  |  |
| California |  |  |  |  |
| Colorado | 2003 |  |  |  |
| Connecticut | 1993 |  |  |  |
| Delaware | 1995 |  |  |  |
| District of Columbia |  |  |  |  |
| Florida | 1977 | 2003 |  |  |
| Georgia | 1997 |  |  | 2005 |
| Hawaii | 1970 |  |  |  |
| Idaho |  |  |  |  |
| Illinois |  | 2010 |  |  |
| Indiana |  |  |  | 2005 |
| Iowa | 2017 |  |  |  |
| Kansas |  |  |  | 2011 |
| Kentucky | 1988 |  |  |  |
| Louisiana |  | 1997 |  |  |
| Maine |  |  |  |  |
| Maryland |  |  |  |  |
| Massachusetts |  |  |  |  |
| Michigan |  | 1995 |  |  |
| Minnesota |  |  |  |  |
| Mississippi |  |  |  | 2011 |
| Missouri | 2002[[13]](#footnote-13) |  |  |  |
| Montana | 2003 |  |  |  |
| Nebraska |  |  |  |  |
| Nevada |  |  |  |  |
| New Hampshire |  | 2012 |  |  |
| New Jersey |  |  |  |  |
| New Mexico |  |  |  |  |
| New York |  |  |  |  |
| North Carolina |  | 2015 |  | 2013[[14]](#footnote-14) |
| North Dakota – no voter registration  | 2003 |  | 2013 | 2015 |
| Ohio |  |  | 2006 |  |
| Oklahoma | 2009 |  |  |  |
| Oregon |  |  |  |  |
| Pennsylvania |  |  |  | 2012-2013[[15]](#footnote-15) |
| Rhode Island | 2011 | 2014 |  |  |
| South Carolina | 1988 |  |  |  |
| South Dakota |  | 2003 |  |  |
| Tennessee | 1990 |  |  | 2011 |
| Texas | 1997 and 2016 |  |  | 2011-2016[[16]](#footnote-16) |
| Utah | 2009 |  |  |  |
| Vermont |  |  |  |  |
| Virginia | 1996 |  | 2012 | 2013 |
| Washington | 2005 | 2011 |  |  |
| West Virginia | 2016 |  |  |  |
| Wisconsin |  |  |  | 2011 |
| Wyoming |  |  |  |  |

We used the NCSL dataset to determine the date these policies were adopted. We cross-referenced the date using other data sources. On multiple occasions we contacted NCSL for additional information, for example, to receive the exact name and date that legislation was adopted in regards to early voting and preregistration (i.e. their internal documents that they use to update the online database). We also verified the data with information from the Secretary of State or State Legislature websites of the respective state, data from previous literature (such as Biggers and Hamner 2015; Burden et al 2014; Cemenska et al 2009; Cha and Kennedy 2014; Rocha and Matsubayashi 2014; Skaggs and Blitzer 2009), data from other organizations such as the Brennan Center for Justice or PEW Charitable Trust and newspapers and media outlets. For a list of the sources for the dates of adoption, please contact the authors.

**Appendix C: Covered Agencies for AVR**

*Covered Agencies*

Many of the first states to adopt AVR, and some of the later ones, allow for the transfer of necessary voter registration information to happen only at the state’s Department of Motor Vehicles. These states include California, Colorado, Connecticut, the District of Columbia, Georgia, New Mexico, Nevada, Oregon, Vermont, and West Virginia (Brennan Center [c] 2020; NCSL[h] 2020). Alaska uses a similar model but does not rely on the DMV; instead, they use the Permanent Fund Dividend (PFD) application as previously mentioned (Alaska Department of Revenue 2018). Several states that adopted AVR down the line took the process one step further by expanding the places of interaction which lead to registration beyond just the DMV to include other state agencies; the exact state agencies vary by state but all have to be approved by a governing authority to ensure that they meet the necessary voter registration requirements. These states include Illinois, Maine, Maryland, Massachusetts, New Jersey, Rhode Island, and Washington (Brennan Center [c] 2020; NCSL[h] 2020). In short, the biggest difference - with some exceptions - between the states that adopted AVR earlier (2015-mid 2017) and those that adopted it later (mid-2017 to now) is that the more recent legislation includes other state agencies, not just the DMV.

**Appendix D: Data Sources Used to Cross Check**

For the following independent variables, NCSL was the main database used and this was verified by cross-checking the legislation and dates in the following data sources:

\*\*if any discrepancies arose, we used the information from NCSL given it was the one that listed the dates and actual laws adopted.

* **EDR**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Burden et al (2014)
	+ Ballotpedia
	+ Book of States
	+ Brennan Center for Justice
* **SDR**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Burden et al (2014)
	+ Ballotpedia
	+ Book of States
* **Portability**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ CaseText
	+ McDonald (2008)
	+ Skaggs and Blitzer (2009)
	+ Cha and Kennedy (2014)
	+ Brennan Center for Justice
	+ Legislature, General Assembly of each state or equivalent
* **AVR**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Brennan Center for Justice
	+ The Hill, Washington Post, other newspapers
	+ Ballotpedia
	+ Legislature, General Assembly of each state or equivalent
* **Preregistration**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ NCSL Internal Document obtained by email, document written by NCSL staff.
* **Early Voting**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Cemenska et al (2009)
	+ PEW Charitable Trust Data Set
	+ Book of States
	+ Biggers and Hanmer (2015)
* **Online Registration**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Project Vote
	+ Legislature, General Assembly of each state or equivalent
* **Mail Voting**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Cemenska et al 2009
	+ PEW Charitable Trust Data Set
	+ Five Thirty Eight
	+ Legislature, General Assembly of each state or equivalent
	+ NCSL Internal Document obtained by email from Brian Hinkle
	+ Wired, Denver Post, other newspapers
* **Voting ID**
	+ Secretary of State, Department of Elections websites of each state or equivalent
	+ Brennan Center for Justice
	+ Rocha and Matsubayashi (2014)
	+ Legislature, General Assembly of each state or equivalent
	+ New York Times

**Appendix E: Fixed Effects Descriptive Statistics**

**Descriptive Statistics For Fixed Effects Model**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Mean/%** | **St. Dev.** | **Min.** | **Max** |
| Number of reforms | 1.96 | 1.59 | 0 | 8 |
| Republican Legislature | 45.49 |  |  |  |
| Divided Legislature | 19.59 |  |  |  |
| Republican Governor | 53.35 |  |  |  |
| Independent Governor | 0.9 |  |  |  |
| Electoral Competition | 36.11 | 11.21 | 0 | 59.16 |
| Electoral Competition\*Republican Legislature | 15.696 | 18.74 | 0 | 59.16 |
| Electoral Competition\*Republican Governor | 18.54 | 19.296 | 0 | 59.16 |
| Restrictions | 51.29 |  |  | 1 |
| Fraction of Neighbors with EDR | 0.18 | 0.23 | 0 | 1 |
| Fraction of Neighbors with SDR | 0.12 | 0.16 | 0 | 0.67 |
| Fraction of Neighbors with Portability | 0.16 | 0.16 | 0 | 0.67 |
| Fraction of Neighbors with AVR | 0.02 | 0.08 | 0 | 0.60 |
| Fraction of Neighbors with Preregistration | 0.13 | 0.17 | 0 | 0.80 |
| Fraction of Neighbors with Early Voting | 0.63 | 0.35 | 0 | 1 |
| Fraction of Neighbors with Vote by Mail | 0.24 | 0.3 | 0 | 1 |
| Fraction of Neighbors with Online Registration | 0.25 | 0.31 | 0 | 1 |
| Fraction of Neighbors with All Mail Voting | 0.03 | 0.099 | 0 | 0.50 |
| Fraction of Neighbors with Non Strict Photo ID | 0.096 | 0.16 | 0 | 1 |
| Fraction of Neighbors with Strict Photo ID | 0.09 | 0.17 | 0 | 1 |
| Government Administration Spending (lagged) | 0.03 | 0.01 | 0.01 | 0.15 |
| Percent of Residents with a Bachelor's Degree (lagged) | 27.78 | 5.15 | 15.1 | 43.40 |
| Voting Eligible Population/Population | 0.71 | 0.04 | 0.59 | 0.81 |
| Percent of Black Residents | 9.65 | 8.31 | 0.31 | 37.14 |
| Percent of Hispanic Residents | 10.692 | 10.19 | 0.68 | 47.72 |

Observations: 776

**Appendix F: Descriptive Statistics for Dyad Analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** | **Mean/%** | **St. Dev.** | **Min.** | **Max** |
| Learning | 2.75 |  |  |  |
| Neighbor | 9.69 |  |  |  |
| Unified Republican Government | 18.99 |  |  |  |
| Unified Democratic Government | 1.01 |  |  |  |
| Government Administration Difference | 1.287 | 1.057 | 0.0002 | 6.409 |
| Electoral Competition Difference | 12.67 | 9.30 | 0.003 | 56.37 |
| Fraction of Neighbors with AVR | 0.167 | 0.206 | 0 | 0.8 |
| Number of Reforms State A | 2.785 | 1.547 | 0 | 7 |
| Neighbor Restrictions State A | 76.41 |  |  |  |
| Number of Restrictions (dummy) | 69.53 |  |  |  |
| Unified Republican Government | 41.99 |  |  |  |
| Unified Democratic Government | 7.55 |  |  |  |
| Percent Black | 8.908 | 7.93 | 0.349 | 36.44 |
| Percent Hispanic | 12.01 | 10.308 | 1.12 | 48.01 |
| Electoral Competition | 36.83 | 11.156 | 0 | 56.37 |
| Number of Reforms | 3.148 | 1.71 | 0 | 7 |
| Unified Democratic Government | 12.03 |  |  |  |
| Unified Republican Government | 36.13 |  |  |  |
| Electoral Competition | 37.106 | 11.546 | 0 | 59.928 |

Observations: 6,540

**Appendix G: Alternative Models for Fixed Effects**

Table 1G: State Fixed Effects Alternate Model (Number of Neighbors) on Adoption of Voting Reforms

|  |  |
| --- | --- |
|  | Coefficients |
| **Independent Variables** |  |
| *State Political Variables* |  |
| Divided Legislature | -0.05 |
|  | (0.03) |
| Independent Governor | 0.05 |
|  | (0.095) |
| Republican Legislature | -0.25\*\* |
|  | (0.09) |
| Electoral Competitiveness | 0.002 |
|  | (0.002) |
| Republican Legislature\*Electoral Competitiveness | 0.004\* |
|  | (0.002) |
| Republican Governor | 0.16\* |
|  | (0.07) |
| Republican Governor\*Electoral Competitiveness | -0.005\*\* |
|  | (0.002) |
| Restrictive Electoral Reforms | 0.07 |
|  | (0.04) |
| Logged Number of Reforms Not Adopted | -5.35\*\*\* |
|  | (0.07) |
| *Neighbors* |  |
| Number of Neighbors w/ EDR | 0.11\*\* |
|  | (0.04) |
| Number of Neighbors w/SDR | -0.01 |
|  | (0.03) |
| Number of Neighbors w/Portability | -0.08\* |
|  | (0.03) |
| Number of Neighbors w/AVR | -0.06 |
|  | (0.03) |
| Number of Neighbors w/Preregistration | -0.02 |
|  | (0.02) |
| Number of Neighbors w/ Early Voting | 0.02 |
|  | (0.02) |
| Number of Neighbors w/Vote by Mail | -0.06\*\* |
|  | (0.02) |
| Number of Neighbors w/ Online Registration | -0.02 |
|  | (0.01) |
| Number of Neighbors w/ All Mail Voting | -0.23\*\*\* |
|  | (0.05) |
| Number of Neighbors w/Non-Strict Photo ID | 0.08\*\* |
|  | (0.03) |
| Number of Neighbors w/ Strict Photo ID | 0.03 |
|  | (0.02) |
| *State Characteristics* |  |
| Government Administration  | -3.88\*\* |
|  | (1.396) |
| Percent of Residents with a Bachelor’s Degree or Higher | 0.02 |
|  | (0.01) |
| Voting Eligible Population/Population | -3.46\* |
|  | (1.51) |
| Percent of Black Population | -0.04\* |
|  | (0.02) |
| Percent of Hispanic Population | 0.07\*\*\* |
|  | (0.02) |
| Time | -0.03\* |
|  | (0.01) |
| Time Squared | 0.002\*\*\* |
|  | (0.001) |
| Constant | 14.72\*\*\* |
|  | (1.19) |
| sigma\_u  | 0.82 |
| sigma\_e  | 0.22 |
| rho | 0.93 |
| Observations | 776 |
| Number of state | 45 |
| R-squared(within) | 0.955 |
|  F(27,704)  | 552.80 |
|  Prob > F  | 0.00 |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; OLS regression with

State fixed effects

Table 2G: State Fixed Effects Alternate Model (Gov Ideology) on Adoption of Voting Reforms

|  |  |
| --- | --- |
|  | Coefficients |
| **Independent Variables** |  |
| *State Political Variables* |  |
| Government Ideology | 0.001 |
|  | (0.001) |
| Electoral Competition | 0.001 |
|  | (0.001) |
| Restrictive Electoral Reforms | 0.05 |
|  | (0.03) |
| Logged Number of Reforms Not Adopted | -5.69\*\*\* |
|  | (0.07) |
| *Neighbors* |  |
| Fraction of Neighbors w/ EDR | 0.33\* |
|  | (0.14) |
| Fraction of Neighbors w/SDR | 0.03 |
|  | (0.12) |
| Fraction of Neighbors w/Portability | -0.44\*\* |
|  | (0.15) |
| Fraction of Neighbors w/AVR | -0.33\* |
|  | (0.14) |
| Fraction of Neighbors w/Preregistration | 0.12 |
|  | (0.08) |
| Fraction of Neighbors w/ Early Voting | 0.099 |
|  | (0.08) |
| Fraction of Neighbors w/Vote by Mail | -0.11 |
|  | (0.096) |
| Fraction of Neighbors w/ Online Registration | -0.02 |
|  | (0.06) |
| Fraction of Neighbors w/ All Mail Voting | -1.33\*\*\* |
|  | (0.23) |
| Fraction of Neighbors w/Non-Strict Photo ID | 0.08 |
|  | (0.07) |
| Fraction of Neighbors w/ Strict Photo ID | 0.02 |
|  | (0.08) |
| *State Characteristics* |  |
| Government Administration  | -2.51\* |
|  | (1.18) |
| Percent of Residents with a Bachelor’s Degree or Higher | 0.02\*\* |
|  | (0.01) |
| Voting Eligible Population/Population | -2.42 |
|  | (1.31) |
| Percent of Black Population | -0.03\* |
|  | (0.02) |
| Percent of Hispanic Population | 0.06\*\*\* |
|  | (0.01) |
| Time | -0.03\* |
|  | (0.01) |
| Time Squared | 0.001\* |
|  | (0.001) |
| Constant | 14.57\*\*\* |
|  | (1.01) |
| sigma\_u  | 0.75 |
| sigma\_e  | 0.19 |
| rho | 0.94 |
| Observations | 732 |
| Number of state | 45 |
| R-squared(within) | 0.959 |
| F(22,665) | 713.41 |
| Prob > F  | 0.00 |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; OLS regression with

State fixed effects

Table 3G: Marginal Effects of Electoral Competition\*Party of the Governor

|  |  |  |  |
| --- | --- | --- | --- |
| Electoral Competition | Party of Governor | Margin | Standard Error |
| 10 | Democrat | 1.845 | 0.052 |
| 10 | Republican | 1.964 | 0.044 |
| 15 | Democrat | 1.868 | 0.043 |
| 15 | Republican | 1.963 | 0.036 |
| 20 | Democrat | 1.890 | 0.034 |
| 20 | Republican | 1.962 | 0.029 |
| 25 | Democrat | 1.912 | 0.026 |
| 25 | Republican | 1.962 | 0.022 |
| 30 | Democrat | 1.935 | 0.019 |
| 30 | Republican | 1.961 | 0.016 |
| 35 | Democrat | 1.957 | 0.014 |
| 35 | Republican | 1.961 | 0.013 |
| 40 | Democrat | 1.979 | 0.015 |
| 40 | Republican | 1.9598 | 0.015 |
| 45 | Democrat | 2.002 | 0.021 |
| 45 | Republican | 1.959 | 0.0197 |
| 50 | Democrat | 2.024 | 0.029 |
| 50 | Republican | 1.959 | 0.027 |
| 55 | Democrat | 2.046 | 0.037 |
| 55 | Republican | 1.958 | 0.034 |
| 60 | Democrat | 2.069 | 0.046 |
| 60 | Republican | 1.957 | 0.042 |

Table 4G: Marginal Effects Party of Legislature\*Electoral Competition

|  |  |  |  |
| --- | --- | --- | --- |
| Electoral Competition | Party of Legislature |  Margin | Standard Error |
| 10 | Democrat/Divided | 2.006 | 0.051 |
| 10 | Republican | 1.792 | 0.055 |
| 15 | Democrat/Divided | 2.006 | 0.043 |
| 15 | Republican | 1.814 | 0.047 |
| 20 | Democrat/Divided | 2.007 | 0.035 |
| 20 | Republican | 1.835 | 0.039 |
| 25 | Democrat/Divided | 2.007 | 0.028 |
| 25 | Republican | 1.857 | 0.031 |
| 30 | Democrat/Divided | 2.007 | 0.023 |
| 30 | Republican | 1.879 | 0.026 |
| 35 | Democrat/Divided | 2.008 | 0.019 |
| 35 | Republican | 1.901 | 0.022 |
| 40 | Democrat/Divided | 2.008 | 0.0199 |
| 40 | Republican | 1.922 | 0.023 |
| 45 | Democrat/Divided | 2.008 | 0.024 |
| 45 | Republican | 1.944 | 0.027 |
| 50 | Democrat/Divided | 2.009 | 0.030 |
| 50 | Republican | 1.966 | 0.033 |
| 55 | Democrat/Divided | 2.009 | 0.037 |
| 55 | Republican | 1.987 | 0.040 |
| 60 | Democrat/Divided | 2.009 | 0.045 |
| 60 | Republican | 2.009 | 0.048 |

**Appendix H: Alternative Dyad Model**

Table 1H: Logistic Regression with Five Year Presidential Vote Margin Measuring Electoral Competitiveness

|  |  |
| --- | --- |
|  | Coefficients |
| **Independent Variables** |  |
| *State Dyad Characteristics* |  |
| Neighbor | -0.73\* |
|  | (0.32) |
| Same Unified Republican Control | -0.44 |
|  | (0.42) |
| Same Unified Democratic Control | -0.09 |
|  | (0.39) |
| Difference Gov. Administration | 0.19\* |
|  | (0.09) |
| Difference Five Year Presidential Vote Margin | -0.05\*\* |
|  | (0.02) |
| *State A Characteristics* |  |
| Fraction of Neighbors with AVR | 0.49 |
|  | (1.35) |
| State Innovation | 0.54\*\* |
|  | (0.18) |
| Neighbors have Voter ID Policy | 0.54 |
|  | (0.71) |
| State A has Voter ID Policy | -1.56\*\* |
|  | (0.53) |
| Five Year Presidential Vote Margin | 0.0004 |
|  | (0.03) |
| Unified Republican Government | -0.33 |
|  | (0.86) |
| Unified Democratic Government | 2.11\*\*\* |
|  | (0.53) |
| Percent Black | 0.04 |
|  | (0.03) |
| Percent Hispanic | 0.05\* |
|  | (0.02) |
| *State B Characteristics* |  |
| State B Innovation | 0.27\*\*\* |
|  | (0.04) |
| Unified Republican Government | -1.07\*\*\* |
|  | (0.23) |
| Unified Democratic Government | 0.51 |
|  | (0.39) |
| Five Year Presidential Vote Margin | 0.005 |
|  | (0.01) |
| Constant | -7.03\*\*\* |
|  | (1.21) |
|  |  |
| Observations | 6,540 |
| Log pseudolikelihood  | -604.40188 |
|  Wald chi2(18) | 3569.88 |
| Prob > chi2  | 0 |
|  Pseudo R2 | 0.2667 |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; 44 state clusters; standard errors clustered on State A

Table 2H: Logistic Regression with Government Ideology (lagged)

|  |  |
| --- | --- |
|  |  Coefficients |
| **Independent Variables** |  |
| *State Dyad Characteristics* |  |
| Neighbor | -0.55 |
|  | (0.30) |
| Difference Government Ideology | -0.004 |
|  | (0.01) |
| Difference Gov. Administration | 0.295\*\*\* |
|  | (0.09) |
| Difference Electoral Competitiveness | 0.04\*\* |
|  | (0.01) |
| *State A Characteristics* |  |
| Fraction of Neighbors with AVR | 1.73 |
|  | (1.26) |
| State A Innovation | 0.44\*\*\* |
|  | (0.13) |
| Neighbors have Voter ID Policy | 0.24 |
|  | (0.66) |
| State A has Voter Id Policy | -0.63 |
|  | (0.49) |
| Electoral Competitiveness | 0.04 |
|  | (0.03) |
| Government Ideology (lagged) | 0.06\* |
|  | (0.02) |
| Percent Black | 0.08\* |
|  | (0.03) |
| Percent Hispanic | 0.07\*\* |
|  | (0.02) |
| *State B Characteristics* |  |
| State B Innovation | 0.23\*\*\* |
|  | (0.02) |
| Government Ideology (lagged) | 0.04\*\*\* |
|  | (0.003) |
| Electoral Competitiveness | 0.02\*\* |
|  | (0.01) |
| Constant | -15.12\*\*\* |
|  | (1.51) |
| Observations | 5,130 |
| Log pseudolikelihood  | -497.04492 |
| Wald chi2(15) | 1356.98 |
| Prob > chi2  | 0 |
| Pseudo R2  | 0.3121 |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; 44 state clusters; standard errors clustered on State A; Government Ideology is lagged by one year.

Table 3H: Logistic Regression Clustering Standard Errors on the Dyad

|  |  |
| --- | --- |
|  Coefficients |  |
|

|  |  |
| --- | --- |
| **Independent Variables** |  |
| *State Dyad Characteristics* |  |
| Neighbor | -0.61 |
|  | (0.33) |
| Same Unified Republican Control | -0.46 |
|  | (0.80) |
| Same Unified Democratic Control | -0.05 |
|  | (0.45) |
| Difference Gov. Administration | 0.16\* |
|  | (0.07) |
| Difference Electoral Competitiveness | 0.04\*\*\* |
|  | (0.01) |
| *State A Characteristics* |  |
| Fraction of Neighbors with AVR | 0.26 |
|  | (0.47) |
| State A Innovation | 0.50\*\*\* |
|  | (0.07) |
| Neighbors have Voter ID Policy | 0.57\* |
|  | (0.23) |
| State A has Voter Id Policy | -1.48\*\*\* |
|  | (0.19) |
| Electoral Competitiveness | 0.03\*\* |
|  | (0.01) |
| Unified Republican Government | -0.33 |
|  | (0.26) |
| Unified Democratic Government | 2.27\*\*\* |
|  | (0.24) |
| Percent Black | 0.05\*\*\* |
|  | (0.01) |
| Percent Hispanic | 0.05\*\*\* |
|  | (0.01) |
| *State B Characteristics* |  |
| State B Innovation | 0.24\*\*\* |
|  | (0.04) |
| Unified Republican Government | -0.99\*\*\* |
|  | (0.26) |
| Unified Democratic Government | 0.66\*\* |
|  | (0.24) |
| Electoral Competitiveness | 0.02\* |
|  | (0.01) |
| Constant | -9.98\*\*\* |
|  | (0.88) |
| Observations | 6,540 |
| Log pseudolikelihood  | -596.93327 |
| Wald chi2(18) | 328.16 |
| Prob > chi2  | 0 |
| Pseudo R2 | 0.2757 |

 |  |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; 2,053 state clusters; standard errors clustered on state dyads

Table 4H: Logistic Regression with Only Dyads Where State B Adopted AVR

|  |  |
| --- | --- |
|  | Coefficients |
| **Independent Variables** |  |
| *State Dyad Characteristics* |  |
| Neighbor | -0.47\*\* |
|  | (0.17) |
| Same Unified Republican Control | -1.08\* |
|  | (0.46) |
| Same Unified Democratic Control | -0.30 |
|  | (0.48) |
| Difference Gov. Administration | 0.06 |
|  | (0.097) |
| Difference Electoral Competitiveness | 0.03 |
|  | (0.02) |
| *State A Characteristics* |  |
| Fraction of Neighbors with AVR | -0.08 |
|  | (1.93) |
| State A Innovation | 0.55\*\* |
|  | (0.21) |
| Neighbors have Voter ID Policy | 1.04 |
|  | (0.95) |
| State A has Voter Id Policy | -1.69\*\* |
|  | (0.66) |
| Electoral Competitiveness | 0.02 |
|  | (0.04) |
| Unified Republican Government | -0.33 |
|  | (0.96) |
| Unified Democratic Government | 3.13\*\*\* |
|  | (0.83) |
| Percent Black | 0.05 |
|  | (0.05) |
| Percent Hispanic | 0.06\* |
|  | (0.02) |
| *State B Characteristics* |  |
| State B Innovation | 0.06 |
|  | (0.04) |
| Unified Republican Government | 0.61 |
|  | (0.33) |
| Unified Democratic Government | 0.31 |
|  | (0.41) |
| Electoral Competitiveness | 0.01 |
|  | (0.004) |
| Constant | -7.41\*\*\* |
|  | (2.25) |
| Observations | 1,791 |
| Log pseudolikelihood  | -391.80387 |
| Wald chi2(18) | 211.16 |
| Prob > chi2  | 0 |
| Pseudo R2 | 0.3293 |

Standard errors in parentheses \*\*\* p<0.001, \*\* p<0.01, \* p<0.05; 44 state clusters; standard errors clustered on State A

1. These dates of adoption were compiled using mainly the National Conference of State Legislatures database, previous literature listed in the Works Cited section, the Brennan Center for Justice at New York University Law School. Most dates of adoption were then cross checked and verified against state electoral codes and legislation as well as news reports. Given the vast number of states and reforms, and the multiple citations for each year of adoption of each reform, not every single source for every single year is included in the Works Cited page. For specific inquiries regarding years of adoption, readers can request access to the Excel sheet kept by the authors with multiple citations for each reform for each state. [↑](#footnote-ref-1)
2. A special thank you to Brian Hinkle from the National Conference for sending by email detailed documents for dates of adoption and implementation of early voting, absentee voting, and preregistration (as supplements to what was found on the NCSL website). [↑](#footnote-ref-2)
3. This table reflects the dates of adoption of these electoral reforms, not necessarily the date at which they were implemented [↑](#footnote-ref-3)
4. Colorado had portability (in the form of emergency registration starting in 1995 [Section 1-2-217.5.] and later provisional ballots starting in 2005 [Section § 1-8.5-107(2)(a)]) but both of these were repealed in 2013 by the “"Voter Access and Modernized Elections Act" in 2013 when Colorado also adopted EDR and other voter registration reforms. [↑](#footnote-ref-4)
5. District of Columbia: Unclear when exactly portability was adopted. It’s in D.C. Code Ann. §1-1001.07(i)(4)(A) and the text below makes no mention of portability in the amendments. The District of Columbia is excluded from the dataset, so this does not affect our results. [↑](#footnote-ref-5)
6. Florida: Chapter Law 73-155, Laws of Florida, effective January 1, 1974, mandated a permanent single registration system for the registration of electors to qualify the electors to vote in all elections. Prior to 2011, Florida had full portability with a regular ballot, but it was scaled back to require voters to cast a provisional ballot Fla. Laws Ch. No. 2013-57 § 4 (amending Fla. Stat. § 101.045). [↑](#footnote-ref-6)
7. In December 2020, S8806 was signed into law. Since 2020 is not included in our dataset, New York is not reflected as having AVR in our analysis. [↑](#footnote-ref-7)
8. Pre-registration in North Carolina was put in place in 2009 by N.C.G.S.A. § 163-82.1 and was subsequently was removed by HB 589 in 2013. The latter law was subsequently struck down by the 4th U.S. Court of Appeals in 2016, leaving 16-year-olds able to preregister according to the North Carolina Board of Elections webpage. [↑](#footnote-ref-8)
9. South Dakota and Washington require in-state migrant registrants to vote at their former precinct, either in-person or by absentee ballot (McDonald 2008) [↑](#footnote-ref-9)
10. In April 2020, HB 235 was signed into law. Since 2020 is not included in our dataset, New York is not reflected as having AVR in our analysis. [↑](#footnote-ref-10)
11. South Dakota and Washington require in-state migrant registrants to vote at their former precinct, either in-person or by absentee ballot (McDonald 2008) [↑](#footnote-ref-11)
12. McDonald (2008) lists West Virginia as having statewide portable registration during the 2004 elections but this has clearly been repealed since then and now only applies to voters who move within counties. The legislation outlining within county portable voter registration is West Virginia §3-2-22. Unfortunately, the authors were unable to find the exact year in which it was repealed, but it was before 2009 as West Virginia is mentioned as only having portable registration within a county in Skaggs and Blitzer (2009). [↑](#footnote-ref-12)
13. Missouri: In 2002, Missouri created a non-strict, non-photo ID requirement ((SB 675, sec. 115.427). In 2006, Missouri amended the 2002 law (SB1014) which would have moved to a strict photo ID requirement but was struck down under the state constitution and thus never implemented. [↑](#footnote-ref-13)
14. North Carolina: In 2013 Act. 2013-381, HB 589, Part 2 creates a strict photo ID requirement; implementation was set in the law for 2016; it was amended in 2015 (HB 836) to make it a non-strict photo ID requirement, still to be implemented in 2016. Then in 2016, a federal appeals court panel struck down North Carolina’s voter ID law, overturning what was considered the broadest piece of restrictive voting legislation passed in recent years. Then in 2018, North Carolina voters decided to require that people show a photo ID at the polls before they can cast a ballot in future elections. An amendment to the state constitution for the voter ID requirement passed by a 56 to 44 percent margin. Then, this legislation was blocked again in 2020 by a judge. Because of this, voters are currently not required to show photo ID until further order of the courts. On 2 December, a federal appeals court ruling that Republican lawmakers didn’t act with racist intentions when they passed a 2018 voter ID law. However, the ruling doesn’t automatically mean North Carolina will have voter ID in the future as the case could still be appealed and the legislature has also lost, so far, in a separate but related lawsuit over voter ID in the state court system. That case is currently awaiting a hearing at the N.C. Supreme Court. (Doran 2020) [↑](#footnote-ref-14)
15. Pennsylvania: In 2012, Pennsylvania passed legislation (Act 18, HB 934) which would have created a strict photo ID but it was subsequently struck down by the courts in 2014. [↑](#footnote-ref-15)
16. Texas: In 2011, Texas amended a 1997 law to create a strict photo ID requirement ((Act 123, SB 14). This law went into effect in 2013 but faced court challenges; in August 2015 a federal appeals court ruled it could not be enforced while the case goes back to a lower court. In 2016, strict photo ID repealed was repealed. On July 20, a federal appeals court ruled that Texas’ law, among the most restrictive in the country, discriminated against blacks and Latinos. After the strict photo ID was repealed, Texas went back to non-strict non photo ID (SB 5). [↑](#footnote-ref-16)