



University of Kentucky  
UKnowledge

---

MPA/MPP/MPFM Capstone Projects

James W. Martin School of Public Policy and  
Administration

---

2021

## The Impact of Automatic Voter Registration on Voter Registration and Voter Turnout Rates: Comparing Oregon and Washington Congressional Elections, 2010-2018

Jacob Toney  
University of Kentucky, [jacob.toney@uky.edu](mailto:jacob.toney@uky.edu)

Follow this and additional works at: [https://uknowledge.uky.edu/mpampp\\_etds](https://uknowledge.uky.edu/mpampp_etds)



Part of the [Public Affairs, Public Policy and Public Administration Commons](#)

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

---

### Recommended Citation

Toney, Jacob, "The Impact of Automatic Voter Registration on Voter Registration and Voter Turnout Rates: Comparing Oregon and Washington Congressional Elections, 2010-2018" (2021). *MPA/MPP/MPFM Capstone Projects*. 378.

[https://uknowledge.uky.edu/mpampp\\_etds/378](https://uknowledge.uky.edu/mpampp_etds/378)

This Graduate Capstone Project is brought to you for free and open access by the James W. Martin School of Public Policy and Administration at UKnowledge. It has been accepted for inclusion in MPA/MPP/MPFM Capstone Projects by an authorized administrator of UKnowledge. For more information, please contact [UKnowledge@lsv.uky.edu](mailto:UKnowledge@lsv.uky.edu).

THE IMPACT OF AUTOMATIC VOTER REGISTRATION ON VOTER REGISTRATION  
AND VOTER TURNOUT RATES:  
COMPARING OREGON AND WASHINGTON CONGRESSIONAL ELECTIONS, 2010-2018

Jacob M. Toney  
Master's in Public Administration Capstone  
Martin School of Public Policy and Administration  
Spring 2021

## **Abstract**

---

Automatic Voter Registration is a recently introduced policy that simplifies the process of registering to vote in order to increase voter turnout rates. This capstone estimates how successful this policy has been. To that end, I used a difference-in-differences research design to consider voter registration and turnout rates seen in the Congressional general elections over the period from 2010 to 2018 in Oregon and Washington. I found that the implementation of Automatic Voter Registration led to a small but statistically significant increase in voter registration and voter turnout rates in Oregon relative to both the prior trend seen in that state and to Washington, a counterfactual state without Automatic Voter Registration during these elections. However, due to the limited nature of this study focused on five elections in one corner of the United States, a more comprehensive study is needed to confirm that this increase is replicable in other areas.

## Table of Contents

---

Executive Summary.....	4
Background and Theoretical Framework.....	5
<i>Implementation of Automatic Voter Registration</i> .....	8
<i>Same Day Registration</i> .....	9
<i>Hypotheses</i> .....	10
Literature Review .....	12
Research Design .....	15
<i>Variables</i> .....	16
<i>Difference-in-differences Assumptions</i> .....	22
Results.....	25
Limitations .....	28
Conclusion.....	29
References .....	31
Appendix: AVR Year of Implementation and Participating Agencies by State .....	33

## Executive Summary

---

Voter turnout rates in the United States have traditionally been lower than those seen in peer countries. One reason for this is variation in voter registration processes, which may stop some who are interested in voting but failed to get registered in time. Automatic Voter Registration is a relatively new policy in which eligible citizens are provided an opt-out opportunity to become registered voters following routine interactions with other government agencies. The goal is to encourage more citizens to vote. After first being passed in Oregon in 2015, twenty states and the District of Columbia have implemented Automatic Voter Registration with some variations. Because this is such a new policy, there has not yet been much work done to determine if it has the predicted effect or how much impact it has. In this capstone, I hypothesized that Automatic Voter Registration would be associated with increases in the numbers of registered voters and in voter turnout. To test this, this capstone examines county-level data on the Congressional general elections between 2010 and 2018 in Oregon and Washington using a difference-in-differences research design. This project utilized official election data from the respective Secretaries of State and demographic data from the American Communities Survey. Following the analysis, I conclude that Automatic Voter Registration led to small but statistically significant increases in both voter registration and voter turnout in Oregon relative to Washington. However, the limited scope of this project suggests that a more comprehensive study involving a more diverse sample of the United States and over a more extended period is needed.

## Background and Theoretical Framework

---

The basis of a democratic form of government lies in the idea that the people select representatives who reflect them as a whole; then, these representatives implement policies that the people support and benefit from. However, if a substantial proportion of the people fail to make their voice heard, it can be said that these representatives do not reflect their constituents. In the US, voter turnout rates are typically about 60% of the Voting Eligible Population (VEP) in Presidential election years and about 40% of VEP in midterm years (Fairvote, 2020). These rates are lower than the average seen in peer countries. A Pew study examining voter turnout rates for the most recent national elections among the Organization of Economic Cooperation and Development (OECD) found that the US ranked 30th out of the 35 nations considered. This study reported that about 55.72% of the Voting Age Population (VAP) of the US voted in the 2016 Presidential election.<sup>1</sup> In contrast, the OECD turnout rates ranged from 36.06% VAP turnout seen in Switzerland's 2019 Parliamentary elections to 88.97% seen in Turkey's 2018 elections. The OECD average was approximately 62.70% (Desilver, 2020).

While there are likely innumerable factors that explain this variation, a large component is explained by differences in how elections are conducted. For instance, many of the countries with the highest turnout rates use compulsory voting, in which all voters are required to participate in elections to avoid some penalty. While it is likely that introducing compulsory voting would increase voter turnout rates, it would also likely be difficult to introduce such a

---

<sup>1</sup> There are several different ways to define the voting population used in the voter turnout literature. Some just use population as it is traditionally defined, the number of people living in an area. Some limit it to only those of the appropriate age to vote, the Voting Age Population (VAP). Some further limit VAP to only include citizens, the Citizen Voting Age Population (CVAP). Finally, some further limit CVAP to Voting Eligible Population (VEP), which excludes those who are legally ineligible to vote in their states (most often convicted felons and mentally incompetent individuals). The more precise definitions are preferable to limit measurement bias, but they are also harder to collect data for (Holbrook and Heidbreder 2010).

policy in the US. Consider the blowback seen surrounding the similar individual mandate component of the Affordable Care Act. Instead, another policy lever may be adjusted to increase voter turnout. Another component of the election system that differentiates the US from its peer countries is voter registration. While most European states will put in most of the effort of registering voters, the US has traditionally tasked individual voters with this decision. As a result, the decision to vote is transformed into a series of time-sensitive decisions. To cast their ballot, prospective voters must first decide to be registered before they can later vote. Because registration has typically been required to be completed weeks or months prior to the election, the deadline may pass before low propensity voters start paying attention to the election. Even if they are later persuaded to vote, they would not be able to participate. As a result, voter registration requirements may cause lower voter turnout rates.

There have been prior reforms intended to resolve this issue. These reforms can be divided into two broad categories. Firstly, some states have expanded the registration window by allowing Election Day Registration (or Same Day Registration for states with early voting windows), allowing unregistered individuals who decide to vote to register at their polling place and cast a provisional ballot. Secondly, there have been reforms that were intended to simplify the process of voter registration. The most impactful of these was the National Voter Registration Act of 1993 (NRVA), which mandated that states simplify and streamline their voter registration processes. As part of this, government agencies that people routinely work with, including Departments of Motor Vehicles and public assistance agencies, were given the





help register may not have been affected by this policy. To resolve this problem, some states have modified their implementation of Motor Voter to instead require citizens to opt out of being registered. Instead of giving citizens the option of registering to vote, it is instead done automatically as part of the agency's application process. This has led to these policies being known as Automatic Voter Registration (AVR). If a citizen truly does not want to be registered, they can still opt out but getting registered is now the default option. There is a wide literature in areas as diverse as the choice to participate in employer-based retirement plans, organ donor participation, and student loan repayment plans that has concluded that structuring a policy such that the default option is the preferred policy outcome leads to higher acceptance rates relative to structures that require individuals to choose to participate (Thaler and Sunstein 2003, Johnson and Goldstein 2003, Jachimowicz, et al. 2019, Cox, Kreisman and Dynarski 2020). Because opting out requires more effort from individuals, supporters of AVR claim that implementing AVR should therefore result in more voter registration than Motor Voter did.

#### *Implementation of Automatic Voter Registration*

AVR was first passed in Oregon in 2015 and has since expanded to include twenty states and the District of Columbia. **Figure 1** shows when each state implemented Automatic Voter Registration using data sourced from the National Conference of State Legislatures. As a broad overview, AVR allows an automatic electronic transfer of data from agencies like the Department of Motor Vehicles<sup>2</sup> to the state Elections department, as both of these groups use similar information. Once there, the data are compared to the existing voter rolls. If the individual is unregistered, a new registration entry will be created for them. If they are already

---

<sup>2</sup> With the exception of Alaska, every AVR state allows registration to take place at the DMV. Alaska only allows AVR at its Permanent Fund Dividend Division. Ten AVR states, including Oregon, only allow AVR at the DMV. The remaining AVR states, including Washington, allow AVR at other state agencies at the discretion of the governor or secretary of state. This is detailed further in the Appendix.

registered, the registration can be updated to include new information listed on the application if it has changed. Although all of these states have this same general process, there is variation in the exact mechanics of AVR in these states. In Alaska, Massachusetts, and Oregon, the voter registration is completely automated: the option to opt-out is presented by a postcard mailed to each non-registered person that summarizes the data that will be provided to the registration rolls, and they are given a deadline to opt out. All of the other states with AVR allow the person to opt out while they are still at the agency. As part of the application process, they are shown a screen that details the information that will be used to register them. This also gives them an opportunity to ask follow-up questions for information that is only relevant to the voter registration, such as political party affiliation (National Conference of State Legislatures, 2020). It is likely that this difference would result in a greater registration impact in Alaska, Massachusetts, and Oregon than elsewhere because I would expect few to undergo this opt-out process. This would be an interesting component of a more extensive study, but it is outside of the scope of this capstone.

#### *Same Day Registration*

Although this capstone is focused on AVR, there are other reforms intended to decrease the negative impact of the registration process. The most prominent is Same Day Registration, which allows non-registered voters to register at their polling place. They are then allowed to cast a provisional ballot until their voter file is verified by state officials. While this should also be associated with an increase in voter turnout, this delay suggests that more votes from Same Day Registration will be rejected than votes from AVR voters. Provisional ballots are often discarded and, since they are not counted until after the election, little can be done to resolve their issues. Since AVR is done before the election, there would be a greater chance that prospective voters would be able to fix whatever issues were found from verification and would therefore be able to

cast their ballot. While this would likely be a small effect, that would suggest that AVR may be associated with larger increases in voter turnout than Same Day Registration. However, this question is outside the scope of this project because neither Oregon nor Washington had Same Day Registration during the elections studied in this capstone (National Conference of State Legislatures 2020). Washington passed it in 2018 but it was not implemented until June 20, 2019 (Washington Elections Division n.d.).

Similarly, this additional time to review provisional ballots also allows more time for voter verification, which may be a convincing argument for those who are concerned about election integrity. Mann, Gronke and Adona note that these two characteristics of AVR may explain some of the bipartisan history of AVR, which has been passed with support from both parties in both blue-leaning states like Rhode Island and red-leaning states like West Virginia. the “potential to increase [voter] access” appeals to liberals and the potential to “increase [the] integrity of elections” appeals to conservatives, AVR may be seen as more bipartisan than other electoral reforms (2020, 693).

### *Hypotheses*

This capstone will examine the impact of passing and implementing AVR on voter turnout. AVR affects voter registration, which then affects voter turnout. As a result of this, we need to consider AVR’s impact on both voter registration and voter turnout. As a result, this capstone has two hypotheses:

**Hypothesis 1: Implementing AVR will cause an increase in the voter registration rate relative to the status quo.**

**Hypothesis 2: Implementing AVR will cause an increase in the voter turnout rate relative to the status quo.**

I expect that voter registration rates will increase more in states with AVR than in states without AVR. However, the impact on voter turnout may be less clear. One of the primary arguments from opponents of AVR is that being registered alone does not always encourage higher voter participation. As a result, getting more voters registered may not actually affect the voter turnout rate. This was seen previously following the adoption of the 26th Amendment to the US Constitution, which lowered the voting age from 21 to 18: although it allowed more participants in elections (therefore increasing the voting eligible population), these participants typically vote in lower numbers than other age groups and the voter turnout rate actually decreased.

## Literature Review

---

In general, the decision to vote is typically thought of in the voting turnout literature as a two-step process. First, a citizen must decide to get registered. Then a registered voter must choose to vote. Therefore, reforms intended to increase voter turnout can be targeted at either step. For instance, policies like absentee or mail voting or rules that define the number of polling locations in an area are intended to affect the actual decision to vote. However, this capstone is focused on policies that primarily affect registration and that affect voter turnout indirectly.

In general, most studies in the voter turnout literature rely on similar independent variables. A meta-analysis of 185 voter turnout studies performed between 2002 and 2015 studying both national and subnational elections throughout the world found that each study used at least one of the following 14 independent variables: “population size, population concentration, population stability, income homogeneity, ethnic homogeneity, proportion of minorities, past turnout, electoral closeness, campaign expenditures, political fragmentation, electoral system, compulsory voting, concurrent elections and the [strictness of] registration requirements (Cancela and Geys 2016, 266).” Cancela and Geys also found that there was variation based on the level of the election: for subnational elections like those examined in this capstone, the most important measures included population size, population stability, proportion of minorities, electoral closeness, and concurrent elections (270). Similarly, a meta-analysis of 135 articles published between 2004 and 2013 found that the most important voter turnout variables were compulsory voting, the importance of elections, and population size (Stockemer 2017).

Because Automatic Voter Registration is a relatively new policy in the US, its impact has not been measured in many academic studies yet. However, a study from the Center for American Progress used a cross-nested multilevel model to show that voters who were registered using AVR were more representative of the broader population in Oregon than voters who were registered in the traditional method. This was because “younger, more rural, lower-income, and more ethnically diverse” individuals were registered at increased rates relative to pre-implementation years (Griffin, et al. 2017). A broader study from the Brennan Center for Justice used matching at the census tract level to compare the eight states that used AVR in the first thirty-five weeks in 2017 to demographically similar census tracts in non-AVR states, finding a statistically significant increase in registration rate in each compared to the same period in 2013 (Morris and Dunphy 2019). Internationally, most of our peer countries have compulsory voter registration, which is typically done with no input from citizens by national agencies. However, Chile transitioned from an election system with optional registration but compulsory voting to a system using automatic voter registration with optional voting in 2012: this new combination of electoral policies led to significant increases in registration but significant decreases in turnout in the next two national elections (Barnes and Rangel 2014).

In contrast, the similar policy created by the National Voter Registration Act has a much longer history in the literature, given its introduction in 1993. Results have been somewhat mixed. Early studies like Knack (1995) and Highton and Wolfinger (1998) found that NVRA was associated with increases in registration and voter turnout. Later studies found either increased results in early years but more modest increases in later years or found that NVRA increased voter registration but not turnout (Brown and Wedeking 2006). Brown and Wedeking (2006) point out that policies intended to make registration easier like NVRA or AVR are

targeted to the segment of the population with the lowest motivation to participate, which may “create a pool of registered voters who...are unwilling or unable to overcome the registration hurdle” and therefore “dilute” the pool of registered voters by lowering the voter turnout rate. In short, it is possible that AVR by itself would have little impact on voter turnout because it is focused on a population that is not interested in participating and would therefore need to be paired with efforts to increase that side of the equation too.

## Research Design

---

To test these hypotheses, this capstone will exploit variation in voter registration systems to construct a difference-in-differences research design. Using this research design, I will compare a state that implemented AVR to a demographically and electorally similar state that did not implement AVR during the period being considered in this capstone. If the treatment and control groups had similar enough trends in registration and voter turnout prior to implementing AVR, the only difference between the treatment and control groups will be AVR. As a result, the control group will serve as a counterfactual for the treatment group by providing an estimate of what would have happened to the treatment group in the absence of AVR. Because both states were examined before and after implementation, this research design will control for time-invariant unmeasured characteristics of these states that would otherwise bias our results. As a result, we will have an unbiased estimate of the treatment effect of implementing AVR.

For this capstone, I used Oregon as the treatment state and Washington as the control state, with counties as the observation unit. The data have been constructed into a balanced panel data set, with data being collected for each county in each election year. To ensure a balanced panel, this capstone will focus on elections to the federal House of Representatives, for which every seat is up for election every two years. Because of turnout differences between general elections, primary elections, and special elections, this capstone will only consider general elections. I chose to focus on the county level for several reasons. Firstly, this increased the amount of possible variation within the dataset. The two states are apportioned a total of fifteen Congressional Districts; in contrast, both states have a total of seventy-five counties. . Although a focus on smaller areas like census tracts would further increase variation, the county level was the most granular level for which registration and turnout data are available. The availability of



data has also shaped this project by limiting the analysis to elections between 2010 and 2018. This project was heavily reliant on data collected by the US Census Bureau as part of the American Communities Survey. More specifically, the Census Bureau started publishing CVAP data from the 5-year ACS in 2009. These data are not yet available for the 2020 election because the Census Bureau suspended all work on the 2020 CVAP dataset on January 12, 2021 following the end of the Census Bureau's participation in the Trump administration's attempt to exclude undocumented residents of the US from the 2020 Census (Wang 2021).

One point that needs to be made is that both of these states are currently using AVR for their elections. Oregon passed AVR in 2015 with HB2177 and first implemented it in 2016. Although Washington passed AVR in 2018, it was not effective until July 1, 2019 (National Conference of State Legislatures 2020). As a result, AVR would not have affected the Congressional elections in the state in 2018 or in any other year under consideration within this study. While there is a possibility that the public discussion of AVR may have reminded some Washington voters about the need to register before the election, my conclusion is that this likely will not negatively affect the analysis.

### *Variables*

Because of this project's hypotheses, this capstone uses two models. These models are represented by the following equation:

$$Y_{c,y} = \alpha + \delta(\text{Treat} \times \text{Post})_{c,y} + \beta_1 X_{c,y} + d_c + d_y + \epsilon_{c,y}$$

where, for county  $c$  and year  $y$ ,  $Y$  represents the Voter Registration Rate in Model 1 or Voter Turnout Rate in Model 2. *Treat* indicates that the observation is a county in a state that will

implement AVR, and *Post* indicates that AVR has been implemented. *Treat x Post* is equal to 1 in all Oregon counties in 2016 and 2018 and is the primary treatment effect of interest in this capstone. *X* is a vector of controls including demographics and political controls.  $D_c$  and  $d_y$  represent county and year fixed effects. Finally,  $\epsilon$  is the error term.

As mentioned above, Model 1 uses the Voter Registration rate dependent variable, defined as the number of registered voters in a county divided by its Citizen Voting Age Population (CVAP), to test Hypothesis 1. Model 2 uses the Voter Turnout rate dependent variable, defined as the number of votes for Congressional candidates cast in a county divided by its CVAP, to test Hypothesis 2. Some counties are divided into multiple districts. The election data reports from each state are divided by district and subdivided by county, so it would be possible to structure a study to account for this intra-county variation. However, I was unable to determine whether these county divisions corresponded to any subcounty Census geographies such as tracts so accurate demographic data were not available. As a result, the vote totals used in this capstone reflect the total number of Congressional Votes cast in each county regardless of the district that they were cast for. Voter registration and vote total data were sourced from historical election results reports maintained by the offices of the Oregon and Washington Secretaries of State. CVAP data were sourced from the US Census Bureau's "Citizen Voting Age Population by Race and Ethnicity" data series.

Beyond this difference, both models use the same independent variables. The difference-in-differences framework was constructed with a set of dummy variables. Typically, this is done with a *Treatment* indicator, a *Post* indicator, and an interaction of *Treatment* and *Post*. However, because the models use fixed effects regression to control for omitted variable bias caused by underlying characteristics of each county and year, the *Treatment* and *Post* indicators were

excluded from the final model. Their inclusion would have introduced issues with collinearity with the equivalent indicators.

To control for other factors that affect voter turnout, both models have additional covariates. My models include several of the measures cited in the Cancela and Geys (2016) and Stockemer (2017) meta-analyses that were relevant in US Congressional elections. First, there were a series of controls for aspects of the election. Because congressional elections are typically an afterthought for voters, there are indicators for the statewide elections that receive more attention and influence higher voter participation. The Governor indicator is set to 1 in 2012 and 2016 for Washington and in 2010, 2014, 2016, and 2018 for Oregon.<sup>3</sup> The Senate indicator is set to 1 in 2010, 2012, 2016, and 2018 in Washington and 2010, 2014, and 2016 in Oregon. These are all expected to increase voter participation and should have a positive relationship with both dependent variables. I should note that all counties in the dataset were affected by the 2012 and 2016 Presidential elections, so their impact is captured by the year fixed effects. Finally, because more competitive elections tend to have higher voter turnout, the models include the margin of victory for the winning candidate as a measure of competitiveness. This was calculated by taking the absolute value of the difference between the Congressional vote totals for the top two parties divided by the total number of votes cast. A value of 0 would indicate that both parties received the same number of votes and a value of 1 would indicate that one party received every vote cast.<sup>4</sup> Since more competitive elections tend to receive more votes, this is expected to have a negative relationship with both dependent variables.

---

<sup>3</sup> Gubernatorial elections in Oregon are usually held every four years in the same years as Congressional midterm elections. However, a special gubernatorial election was held in 2016 for the remaining two years of Governor John Kitzhaber's term following his resignation on February 13, 2015 (Van Der Voo and Johnson 2015).

<sup>4</sup> In Washington, all candidates in all parties participate in the primary and only the top-two vote getters move on to the general election. In 2014 and 2016, this resulted in general election contests between two Republicans in

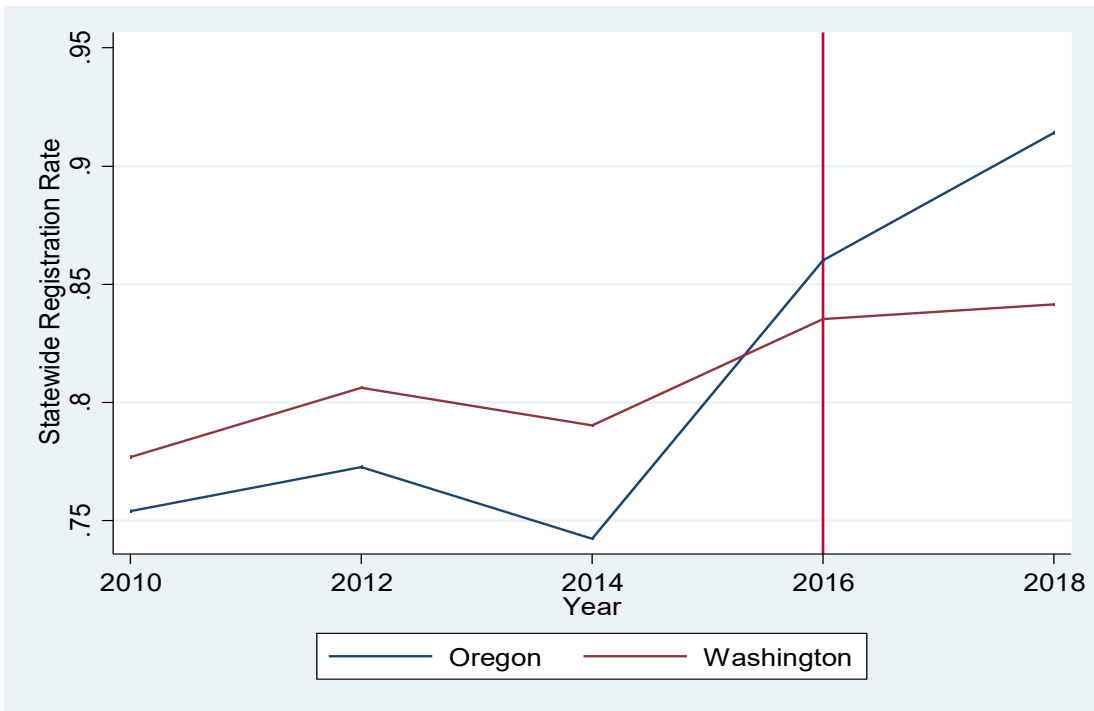
There was also a series of demographic controls. I included the county-wide CVAP in order to capture both the relative population in each county and the change in population from year to year. In order to control for extreme values, the population was transformed using the natural logarithm. The argument is that a lower population should increase voter turnout because voters are more likely to feel that their vote will be decisive (Cancela and Geys 2016, 269). Median income data were converted to 2018 dollars using the Bureau of Labor Statistics' CPI-US-RS Index to control for the effect of inflation and were transformed using the natural log to control for extreme values. A higher median wage is expected to have a positive relationship. Data for the percentage of CVAP with a bachelor's degree or higher was included because more highly educated individuals have been found to be more likely to vote. The model also includes the proportion of CVAP represented by citizens in each age group: individuals aged 25-34, 35-44, 45-64, and older than 65 are compared to the excluded category of those aged 18-24. Older individuals tend to vote more than younger individuals so all three of these age groups should have positive coefficients (Brown and Wedeking 2006). Finally, the percentage of CVAP represented by each racial or ethnic group is included. The percentage of Black, Hispanic/Latino, Asian, Native American, and Pacific Islander individuals are compared to the excluded category, the percentage of White individuals. **Table 1** shows the summary statistics for the variables used in this analysis.

---

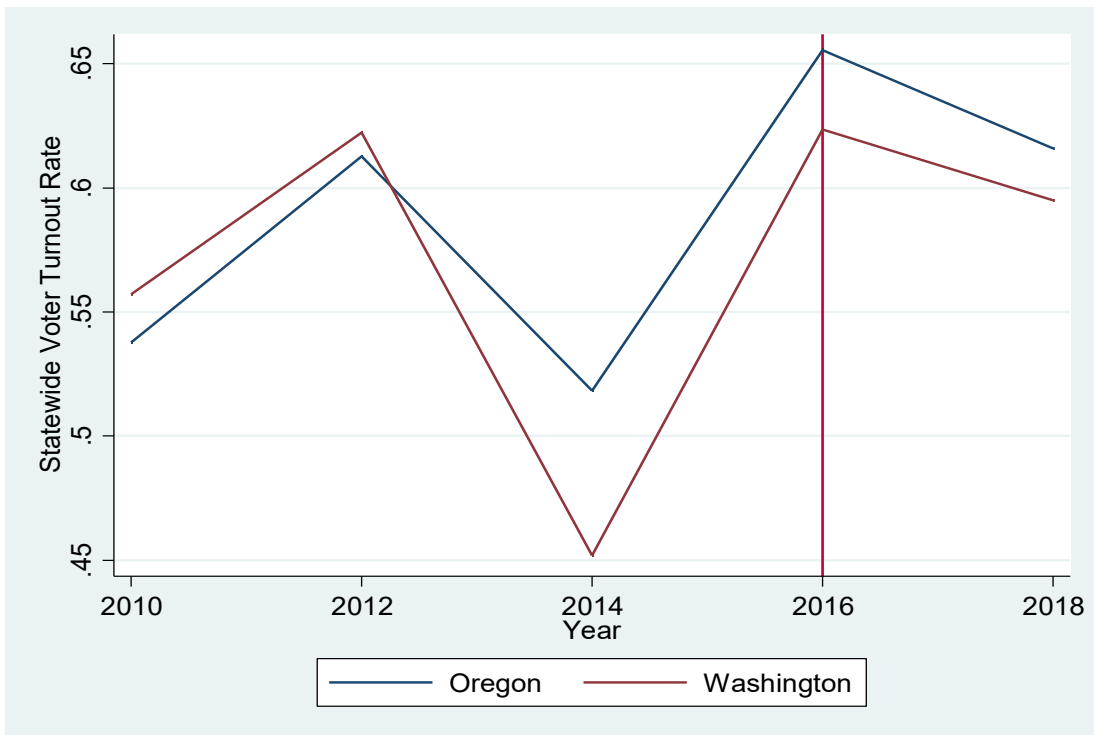
WA-4. I treated both as if they were uncontested elections due to the ideology similarities between the two candidates. The district was going to elect a Conservative Republican regardless of which candidate voters chose so I did not consider the election to be competitive.

**Table 1.** Summary Statistics and Differences of Means Tests

VARIABLES	Pre-Implementation (Years 2010-2014)		Prob > T	Post-Implementation (Years 2016-2018)		Prob > T
	Washington Mean (SD)	Oregon Mean (SD)		Washington Mean (SD)	Oregon Mean (SD)	
Registration Rate (%)	0.791 (0.069)	0.756 (0.063)	0.000	0.839 (0.068)	0.887 (0.06)	0.000
Voter Turnout Rate (%)	0.544 (0.111)	0.556 (0.074)	0.320	0.609 (0.09)	0.636 (0.063)	0.038
Margin of Victory (%)	0.289 (0.213)	0.381 (0.24)	0.003	0.326 (0.247)	0.342 (0.234)	0.685
CVAP (logged)	10.622 (1.483)	10.28 (1.525)	0.090	10.671 (1.508)	10.316 (1.553)	0.158
Median Income (\$2018 logged)	10.879 (0.168)	10.797 (0.155)	0.000	10.911 (0.168)	10.801 (0.182)	0.000
Bachelor's Degree or More (%)	0.211 (0.076)	0.201 (0.067)	0.260	0.232 (0.082)	0.215 (0.077)	0.194
Age						
18-24 (%)	0.122 (0.065)	0.108 (0.04)	0.046	0.117 (0.065)	0.104 (0.04)	0.137
25-34 (%)	0.147 (0.036)	0.142 (0.032)	0.277	0.15 (0.038)	0.146 (0.028)	0.483
35-44 (%)	0.151 (0.026)	0.148 (0.026)	0.463	0.145 (0.025)	0.143 (0.026)	0.684
45-64 (%)	0.369 (0.048)	0.374 (0.032)	0.372	0.346 (0.038)	0.348 (0.025)	0.675
>65 (%)	0.211 (0.057)	0.228 (0.054)	0.022	0.243 (0.068)	0.259 (0.06)	0.121
Race and Ethnicity						
White (%)	0.860 (0.078)	0.895 (0.040)	0.000	0.841 (0.089)	0.874 (0.06)	0.008
Native American (%)	0.021 (0.027)	0.016 (0.024)	0.204	0.02 (0.025)	0.017 (0.024)	0.399
Asian (%)	0.018 (0.022)	0.011 (0.014)	0.004	0.02 (0.024)	0.012 (0.015)	0.013
Black (%)	0.011 (0.014)	0.006 (0.008)	0.001	0.012 (0.014)	0.007 (0.008)	0.005
Pacific Islander (%)	0.002 (0.002)	0.001 (0.001)	0.053	0.003 (0.003)	0.002 (0.002)	0.068
Latino/Hispanic (%)	0.066 (0.073)	0.049 (0.035)	0.028	0.079 (0.083)	0.064 (0.043)	0.161



**Figure 2.** Parallel Trends Assumption: Model 1



**Figure 3.** Parallel Trends Assumption: Model 2

### *Difference-in-differences Assumptions*

Before discussing the results, it is necessary to review the assumptions required by the difference-in-differences research design. The most important is the parallel trends assumption, which states that the trend of the dependent variables should be approximately the same in both the control and treatment groups prior to the implementation of the policy. Although this is an important step in determining if the difference-in-differences design is appropriate, there is no test that will determine if the assumption is met. **Figures 2 and 3** plot the statewide mean of both dependent variables for each year. The vertical line at 2016 indicates the implementation of AVR in Oregon. Based on this figure, I would argue that the parallel trends assumption has been met for both dependent variables. Both states increased their registration and voter turnout rates by similar amounts when moving from 2010 to 2012 and both measures decreased by similar amounts when moving from 2012 to 2014. Both states saw substantial increases in both measures when moving from 2014 to 2016. The trends in Voter Registration diverged in 2016. Oregon saw a much more substantial increase than Washington moving into 2016, which continued into 2018. However, the trend in Voter Turnout remained much more similar for both states in both the pre- and post-treatment periods. This may foreshadow that AVR caused an increase in registration but that it did not encourage higher turnout. This is reinforced by the fact that turnout was higher in Oregon in 2014; however, this may be explained by the gubernatorial and Senate elections held in Oregon in that year. Because Washington had neither, I would expect that turnout would be lower there.

To further test the parallel trends assumption, I calculated a difference of means t-test for each variable by state in the periods before and after implementation. For this test, I calculated a t statistic; the probability of this t statistic occurring by random chance is reported alongside the summary statistics in **Table 1**. Based on the standard 95% significance level, I would be able to

reject the null hypothesis that there is no difference by state for each variable if any t statistic is found to have a reported probability of being found by random chance of 0.05 or less. In this case, the difference in means for most of the variables is not statistically significant by state. This suggests that this analysis is likely appropriate.

The registration rate, the dependent variable in model 1, was found to be significantly higher in Washington in the period prior to the implementation of AVR and significantly higher in Oregon following implementation. I believe that this change in the trend foreshadows a statistically significant impact from AVR on voter registration. Similarly, the voter turnout rate, the dependent variable in model 2, has no statistically significant difference in the pre period and is significantly higher in Oregon in the post period. This would suggest that AVR has also had an impact on voter turnout.

While most of the independent variables have no statistically significant difference, several of the demographic controls do. This should not cause any issue with the analysis; the inclusion of these variables in the model will control for any omitted variable bias for these underlying differences. The margin of victory variable, in which a higher value corresponds to a less competitive election, is significantly higher in Oregon in the pre period. Oregon seems to have had less competitive elections on average than Washington. There are two main explanations for this. First, general elections in Washington are limited to the top two vote getters from the primary, which all candidates from all parties compete in; this is contrasted by Oregon, which has a more typical system of allowing a candidate from each party to show up on the ballot. Because the margin of victory variable was calculated as the difference between the top two vote getters, the presence of third party candidates in Oregon may encourage voters that otherwise would have voted for a major party candidate if their party were not on the ballot to



vote. For instance, an Oregonian that wished to vote against the Democratic party would have several choices, such as the Republican Party, the Libertarian Party, or the Constitution Party. A similar Washingtonian would typically be limited to just the Republican Party. As a result, votes in Oregon are typically more diffused than in Washington. Secondly, four of the five districts in Oregon have been controlled by Democrats since 1997; Washington started the sample period with six out of ten and ended the period with seven out of ten. Whether it is due to gerrymandering or sorting, elections may just be less competitive in Oregon.

## Results

**Table 2.** Difference-in-differences Naïve Estimates

Estimated Impact on Voter Registration				
		(A)	(B)	(C) = (A) – (B)
		Treatment Group (OR)	Control Group (WA)	Treatment vs. Control Difference
(I)	Pre-Reform (2010-2014)	0.756	0.791	-0.035
(II)	Post-Reform (2016-2018)	0.887	0.839	0.048
(III) = (II) – (I)	Post- vs. Pre-Reform Difference	0.131	0.048	<b>0.083</b> (DID estimate)

Estimated Impact on Voter Turnout				
		(A)	(B)	(C) = (A) – (B)
		Treatment Group (OR)	Control Group (WA)	Treatment vs. Control Difference
(I)	Pre-Reform (2010-2014)	0.556	0.544	0.012
(II)	Post-Reform (2016-2018)	0.636	0.609	0.027
(III) = (II) – (I)	Post- vs. Pre-Reform Difference	0.08	0.065	<b>0.015</b> (DID Estimate)

**Table 2** shows the naïve estimate of this study without the additional controls or fixed effects.

This suggests that AVR has a positive relationship with both voter registration and turnout.

Based on this, it can be expected that AVR caused an increase of approximately 0.083% for the registration rate and an increase of approximately 0.015% for the turnout rate. The results of the

full regression with fixed effects are detailed in **Table 3**. Notably, the difference-in-differences indicator is significant in both models. This suggests that AVR does have an impact on both voter registration and voter turnout rates, with the treatment effect of implementing AVR being associated with an increase of 0.065 in the Registration rate and an increase of 0.026 in the Voter Turnout rate. This analysis, therefore, confirms Hypothesis 1 and Hypothesis 2. However, the difference in magnitude suggests that AVR has a greater impact on voter registration than it does on turnout.

The covariates generally went in the predicted directions, although several were not significant. The political controls had mixed performance. The gubernatorial and senate election indicators were significant in the voter registration model; the senate election indicator and margin of victory measure were significant in the voter turnout model. While the gubernatorial indicator and the margin of victory had coefficients in the predicted signs, the senate indicator had a positive coefficient as predicted in the voter turnout model but a negative coefficient in the voter registration model. Moving to the demographic variables, the logged CVAP variable was significant with the predicted coefficient sign in both models. Many of the age variables were not significant, although the few that are significant are consistent with the prediction that a greater population of older individuals would have higher electoral participation. Moving to the race and ethnicity variables, only the Asian and Latino variables were significant in the Registration model. None of the race and ethnicity variables were significant at the 95% level in the voter turnout model. The design of this study does not examine the heterogeneous effects of this policy on different racial or ethnic groups so further research is needed to explore this complex impact.

**Table 3.** Fixed Effects Difference-in-differences Regression Estimates

VARIABLES	(1) Model 1: Voter Registration	(2) Model 2: Voter Turnout
Treat*Post	0.065*** (0.004)	0.026*** (0.008)
Gubernatorial Election	0.020*** (0.003)	-0.003 (0.006)
Senatorial Election	-0.027*** (0.004)	0.032*** (0.006)
Margin of Victory (%)	-0.005 (0.007)	-0.042*** (0.015)
Citizen Voting Age Population (logged)	-0.184** (0.072)	-0.253*** (0.072)
Median Income (\$2018 logged)	0.011 (0.040)	0.017 (0.042)
Bachelor's Degree or More (%)	-0.222 (0.139)	0.133 (0.169)
<b>Age</b>		
24-34 (%)	-0.132 (0.284)	-0.726** (0.310)
35-44 (%)	0.265 (0.439)	0.099 (0.382)
45-64 (%)	0.703** (0.355)	0.114 (0.374)
>65 (%)	0.337 (0.450)	-0.147 (0.456)
<b>Race/Ethnicity</b>		
Native American (%)	-0.695 (0.657)	0.235 (0.579)
Asian (%)	-1.709*** (0.608)	-1.281* (0.724)
Black (%)	1.317 (0.934)	0.796 (1.212)
Pacific Islander (%)	-0.451 (0.975)	0.748 (1.422)
Latino/Hispanic (%)	-0.447** (0.181)	-0.445 (0.363)
Constant	2.067*** (0.761)	2.824*** (0.808)
Observations	375	375
R-squared	0.960	0.902

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Fixed Effects Not Shown

## Limitations

---

Although these results confirm my hypotheses, there are a series of limitations to the capstone that may bias the findings. First, the demographic data came from ACS. Because these data are estimates, it is possible that there were undercounts or overcounts in these figures that would distort the results. Secondly, this capstone defined voter registration and turnout using the Citizen Voting Age Population. Although this removed many of the ineligible voters that would have been included if I had used Voting Age Population, CVAP is less accurate than the Voting Eligible Population and includes some number of individuals who are legally barred from voting. Because CVAP estimates include more individuals and are therefore higher than VEP estimates, the registration and turnout numbers are likely to be slightly higher than were reported in this capstone.

Secondly, this project is incredibly limited. It only considers five elections held in two states and is only able to consider results from two elections following the introduction of AVR. A more comprehensive study that is able to include more of the country would help to predict the impact of AVR in other states. Including more states would also researchers to determine if AVR has a greater impact in states that allow data to be transferred from state agencies that are not DMVs; if turnout is lower among the population that is less likely to need to drive, allowing more participating agencies could greatly increase the impact. Additionally, a project with a longer time horizon would help to determine if AVR continues to have an impact after its introduction or if these findings only hold shortly following its implementation.

## Conclusion

---

Based on this capstone, I can conclude that Automatic Voter Registration is a policy that is likely to encourage increases in voter registration, which in turn is likely to encourage increases in voter turnout. Since this is the primary purpose of the policy, it could be easy for me to claim that it should be implemented in every state to encourage as many citizens as possible to participate in the electoral process. However, this project is ultimately a very limited look at this policy, being focused on five elections in two states that represent a vast minority of the total US population. The Pacific Northwest states do not look like the US as a whole demographically and have had enjoyed less restrictive electoral processes than those seen in other regions. It is likely that these fundamental differences between that region and the rest of the US could mean that Automatic Voter Registration may have a different impact elsewhere. Although this project provides a promising first look at the impact of Automatic Voter Registration, a more comprehensive study is needed to truly measure the impact of this policy. Ideally, such a project would be able to have a national scope to include other types of electoral environments and the opportunity to include more elections post-implementation to ensure that any increase in Voter Turnout measured is permanent. However, I believe that this project can serve as a guide for how a more comprehensive study could be structured. In short, I believe that this capstone can demonstrate to policy makers the need to investigate this policy further.

The evidence from this capstone may also suggest that AVR needs to be available from more agencies rather than just from the DMV. My results suggest that higher population counties and counties with higher proportions of non-white individuals are still less likely to participate in elections even with AVR. Expanding AVR to agencies that these individuals interact with more often would be likely to increase its impact, although this study is not able to measure that. The

lower rates of participation in these groups are likely to be a factor in the lack of representation of these groups in the legislature and the lack of focus paid to their most important issues. Since solving this issue is the primary goal of increasing electoral participation among low-propensity voters, states need to properly target AVR to maximize its impact.

Finally, I want to briefly discuss the divergent focuses that different states are currently placing on election administration policy. While some states have the goal of increasing the ease of voting by implementing policies like AVR, other states are making moves to make voting harder in order to lessen their perceived risk of voter fraud. Despite the fact that there is no evidence that this is a widespread issue, beliefs that elections are not secure have been on the rise. As a result, while I think that further study of AVR is needed, policies like AVR may be a hard sell to those states. Because of this, there will likely be a greater difference in electoral representation between these states than there currently is. Because policies are often enacted to allow elected officials to court likely voters, this anticipated lower representation can have serious equity consequences that will prevent policies that will help those with lower socioeconomic status and members of minority groups. Reforms to electoral administration policy can play a strong role in offsetting inequity and implementing policies AVR can impact many other actions taken by government.

## References

---

2018. "Automatic Voter Registration Act, Wa. HB 2595, Washington 65th Legislature (2018)." <http://lawfilesexternal.wa.gov/biennium/2017-18/Pdf/Bills/Session%20Laws/House/2595-S2.SL.pdf>.
- Barnes, Tiffany D., and Gabriela Rangel. 2014. "Election Law Reform in Chile: The Implementation of Automatic Registration and Voluntary Voting." *Election Law Journal* 13 (4): 570-582.
- Brown, Robert D., and Justin Wedeking. 2006. "People Who Have Their Tickets But Do Not Use Them: "Motor Voter," Registration, and Turnout Revisited." *American Politics Research* 34 (3): 479-504. doi:10.1177/1532673X05281122.
- Cancela, João, and Benny Geys. 2016. "Explaining voter turnout: A meta-analysis of national and subnationalelections." *Electoral Studies* 42: 264-275. doi:10.1016/j.electstud.2016.03.005.
- Cox, James C., Daniel Kreisman, and Susan Dynarski. 2020. "Designed to fail: Effects of the default option and information complexity on student loan repayment." *Journal of Public Economics* 192: 1-19. doi:https://doi.org/10.1016/j.jpubeco.2020.104298.
- Desilver, Drew. 2020. "In past elections, U.S. trailed most developed countries in voter turnout." *Pew Research Center*. November 3. <https://www.pewresearch.org/fact-tank/2020/11/03/in-past-elections-u-s-trailed-most-developed-countries-in-voter-turnout/>.
- Fairvote. 2020. *Voter Turnout*. Accessed November 17, 2020. [https://www.fairvote.org/voter\\_turnout#voter\\_turnout\\_101](https://www.fairvote.org/voter_turnout#voter_turnout_101).
- Griffin, Rob, Paul Gronke, Tova Wang, and Liz Kennedy. 2017. *Who Votes With Automatic Voter Registration? Impact Analysis of Oregon's First-in-the-Nation Program*. June 7. <https://www.americanprogress.org/issues/democracy/reports/2017/06/07/433677/votes-automatic-voter-registration/>.
- Highton, Benjamin, and Raymond E. Wolfinger. 1998. "Estimating the Effects of the National Voter Registration Act of 1993." *Political Behavior* 20 (2).
- Holbrook, Thomas, and Brianna Heidbreder. 2010. "Does Measurement Matter? The Case of VAP and VEP in Models of Voter Turnout in the United States." *State Politics & Policy Quarterly* 10 (2). <http://www.jstor.com/stable/27867141>.
- Hyde, Elizabeth M. 2019. "A Bipartisan Policy For Democracy: Why Automatic Voter Registration Is Right For Indiana." *Indiana Law Review* 52 (3): 481-509. <https://mckinneylaw.iu.edu/ilr/pdf/vol52p481.pdf>.
- Jachimowicz, Jon M., Duncan, Shannon, Elke U. Weber, and Eric J. Johnson. 2019. "When and why defaults influence decisions: a meta-analysis of default effects." *Behavioural Public Policy* 3 (2): 159-186. doi:doi:10.1017/bpp.2018.43.
- Johnson, Eric J., and Daniel Goldstein. 2003. "Do Defaults Save Lives?" *Science* 302 (5649): 1338-1339. doi:DOI: 10.1126/science.1091721 .



- Knack, Stephen. 1995. "Does "Motor Voter" Work? Evidence from State-Level Data." *The Journal of Politics* 57 (3): 796-811.
- Mann, Christopher B., Paul Gronke, and Natalie Adona. 2020. "Framing Automatic Voter Registration: Partisanship and Public Understanding of Automatic Voter Registration." *American Politics Research* 48 (6): 693-699. doi:0.1177/1532673X20922525.
- Morris, Kevin, and Peter Dunphy. 2019. *AVR Impact on State Voter Registration*. April 11. [https://www.brennancenter.org/sites/default/files/2019-08/Report\\_AVR\\_Impact\\_State\\_Voter\\_Registration.pdf](https://www.brennancenter.org/sites/default/files/2019-08/Report_AVR_Impact_State_Voter_Registration.pdf).
- National Conference of State Legislatures. 2020. *Automatic Voter Registration*. April 14. <https://www.ncsl.org/research/elections-and-campaigns/automatic-voter-registration.aspx>.
- . 2020. "Same Day Voter Registration." October 6. <https://www.ncsl.org/research/elections-and-campaigns/same-day-registration.aspx>.
2015. "Or. HB 2177, 78th Oregon Legislative Assembly." <https://olis.leg.state.or.us/liz/2015R1/Downloads/MeasureDocument/HB2177/Enrolled>.
- Saad, Lydia. 2016. *Trump and Clinton Finish With Historically Poor Images*. November 8. <https://news.gallup.com/poll/197231/trump-clinton-finish-historically-poor-images.aspx>.
- Stockemer, Daniel. 2017. "What Affects Voter Turnout? A Review Article/Meta-Analysis of Aggregate Research." *Government and Opposition* 52 (4): 698-722. doi:10.1017/gov.2016.30.
- Thaler, Richard H., and Cass R. Sunstein. 2003. "Libertarian Paternalism." *The American Economic Review* 93 (2): 175-179. <https://www.jstor.org/stable/3132220>.
- Van Der Voo, Lee, and Kirk Johnson. 2015. "Gov. John Kitzhaber of Oregon Resigns Amid Crisis." *The New York Times*, February 13. <https://www.nytimes.com/2015/02/14/us/kitzhaber-resigns-as-governor-of-oregon.html>.
- Wang, Hansi Lo. 2021. "Census Bureau Stops Work On Trump's Request For Unauthorized Immigrant Count." *NPR*, January 13. <https://www.npr.org/2021/01/13/956352495/census-bureau-stops-work-on-trumps-request-for-unauthorized-immigrant-count>.
- Washington Elections Division. n.d. *Same Day Registration*. <https://www.sos.wa.gov/elections/research/same-day-registration.aspx>.

**Appendix: AVR Year of Implementation and Participating Agencies by State**

---

State	Year of Implementation	Participating Agencies	Type of Opt-Out
Alaska	2017	Permanent Fund Dividend only	Notification Sent
California	2018	DMV only	At Agency
Colorado	2017	DMV, Department of Health, and other designated by Secretary of State	At Agency
Connecticut	2016	DMV only	At Agency
District of Columbia	2018	DMV only	At Agency
Georgia	2016	DMV only	At Agency
Illinois	2018	DMV and other designated AVR agencies	At Agency
Maine	2022	DMV and other designated “source agencies”	At Agency
Maryland	2019	DMV, health benefit exchange, Department of Social Services, and Mobility Certification Office	At Agency
Massachusetts	2020	DMV, division of medical assistance, health insurance connector authority, other agencies that collect “reliable citizenship information”	Notification Sent
Michigan	2019	DMV only	At Agency
New Jersey	2018	DMV and other designated by Secretary of State	At Agency
New Mexico	2018	DMV only	At Agency
New York	2023	DMV, DOH, DOL and additional agencies	At Agency
Nevada	2020	DMV only	At Agency
Oregon	2016	DMV only	Notification Sent
Rhode Island	2018	DMV and others designated by Secretary of State	At Agency
Vermont	2017	DMV and others designated by Secretary of State	At Agency
Virginia	2020	DMV only	At Agency
Washington	2019	DMV, health benefit exchange, other state agencies designated by governor	At Agency
West Virginia	2019	DMV only	At Agency

Source: National Conference of State Legislatures