A Quantitative Analysis: Effects of Right-to-Work Laws & Union Density on Voter Participation in the United States, 1972 to 2012.

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Abstract

The societal effects of governmental labor policies have broad implications for our lives and reach far beyond economics, into virtually all areas of our communities. In this paper I have sought to better understand and estimate specifically, the potential political effects of state level Right-to-Work (RTW) Laws, by quantitatively estimating their predictive power over voter turnout levels across the United States, during the period between 1972 and 2012. My expectation is that states with RTW laws in place will have experienced lower voter turnout once those laws are enacted. Another factor, which is positively correlated with voter turnout, is union density. It can be difficult to separate which factors produce certain outcomes or trends. My objective is to determine if RTW laws have an effect, independent of that union density. However, I am not seeking to prove causality, which is beyond the scope of this project.

The statistical tests performed in this analysis are linear regressions. The key findings from the data tell us that, while strong state fixed effects control for much of the variance, there remains some statistically significant evidence that RTW laws have at least a short-term negative effect on voter turnout, even when controlling for union density, among other factors, at a rate of nearly -1.5%. This figure may seem small but considering the close margins that are often the difference between a win and loss in many paramount political races, it is not insignificant.

When faced with such immense and consequential policy decisions such as labor and civil rights laws, it is critically important that we as constituents, as well as our elected leaders, carefully and continually scrutinize laws which may be unequally or unconstitutionally effecting our communities and lives.

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Purpose of the Study

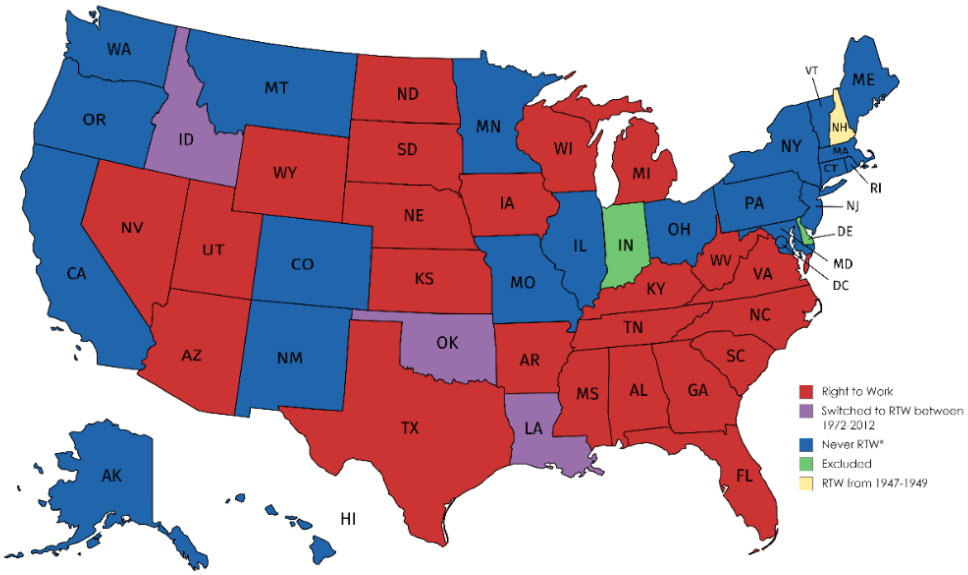
Representation matters- in media, education, sports, literature, healthcare, art, employment and in government. Because our United States of America is a federal constitutional republic, our system is designed, at least in theory, to operationalize that representation equally to all citizens of adult age (18+) in the franchise, or the right to vote in democratically held elections. These elections shape all manner of public policy which define, among other things, our social and economic standards of living. The principle, one man one vote, has far reaching implications for the kind of society we live in, how we define what is a privilege, what is a right, and for whom. Because the potential outcomes of any unequal and undue impediments to voting are so consequential to our communities, it is critically important that we continue to scrutinize public policies at all levels of government which may be directly or indirectly influencing those outcomes in an unequitable and/or unconstitutional manner.

In 1935, the United States Congress enacted into law the National Labor Relations Act (NLRA). This law was put in place "…to protect the rights of employees and employers, to encourage collective bargaining, and to curtail certain private sector labor and management practices, which can harm the general welfare of workers, businesses and the U.S. economy," according to the National Labor Relations Board (NLRB) website. Then, in 1947, the US Congress passed an amendment to the NLRA, called the Labor Management Relations Act, often referred to as the Taft-Hartley Act, which severely limited unions abilities to organize and collectively bargain, by allowing states to enact Right-to-Work (RTW) laws which ban union security agreements within the state. Union security agreements require that all workers hired within a unionized

firm either (1) be dues paying union members at the time of hire (2) join the union within 30 days of hire (NLRB, 2020).

Unions are required by law to represent all workers, regardless of their union membership status (NLRB, 2020). Allowing workers to 'opt-out' of paying dues creates a free-rider problem, wherein it is likely that many workers will choose to benefit from the protection of the union, while not paying their fair share toward maintaining the union functions. This puts unequal burdens on union members who choose to pay their dues, and leaves unions unable to adequately operate on behalf of workers. The Taft-Hartley Act remains law today, and as of August 2020, 27 states have RTW statutes in place, as well as at least one local jurisdiction in Delaware (See Fig. 1 & Table 1 below).

Fig. 1 *Map of US States by RTW Status**



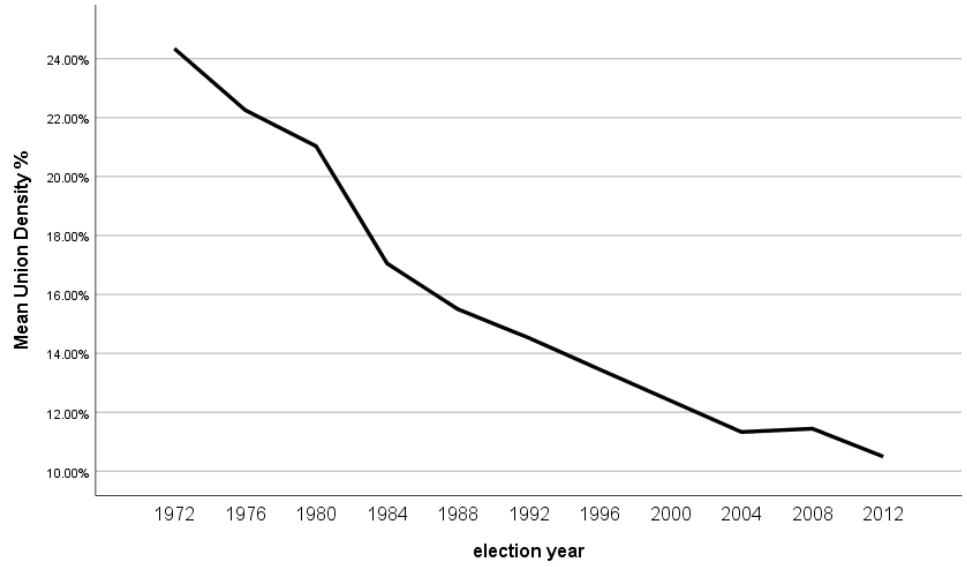
Some states included have had local RTW laws in place in the past.

Table 1 *Year of Enactment for State with RTW Laws*

Alabama – 1953	Iowa – 1947	Nevada – 1951	Texas – 1947
Arizona – 1946	Kansas – 1958	N. Carolina – 1947	Utah – 1955
Arkansas – 1947	Kentucky – 2017	N. Dakota – 1947	Virginia – 1947
Florida – 1944	Louisiana – 1976	Oklahoma – 2001	West Virginia – 2016
Georgia – 1947	Michigan – 2012	S. Carolina – 1954	Wisconsin – 2015
Idaho – 1985	Mississippi – 1954	S. Dakota – 1946	Wyoming – 1963
Indiana – 2012	Nebraska – 1946	Tennessee – 1947	

Since the passing of the Taft-Hartley Act, union membership has declined severely. As a percentage of the total working population, in 1954 union density was 28.3%, whereas in 2003, it was down to 11.5% (Mayer, 2004) and 10.048% in 2018 (Hirsch et al, 2018).

Fig. 2 *Average Union Density %, 1972-2012*



In 2017, Richard Ahlquist published a review of literature across several disciplines which established that labor unions overall, reduce economic inequality. This is accomplished in part through the negotiation and enforcement of fair wages, benefits and working conditions, but the importance of their strategic political activism cannot be overstated. Ahlquist notes that “Much of their equality-promoting influence occurs through their ability to reduce class-based inequity in politics and public policy. Declining

unionization across much of the developed world is eroding workers' bargaining power. Reduced economic leverage puts pressure on union solidarity and weakens labor-based political movements" (Ahlquist, 2017).

The goal of my research is to collect and statistically analyze relevant historical state level data on union density and voter turnout rates in presidential elections in the United States from the period of 1972 to 2012, and to identify any potential correlations or trends which the effects of state level right-to-work (RTW) laws may have had on voter turnout during this time period. The timeframe of the data was limited by my ability to access certain relevant data, and I would have preferred to go back to 1944 when the first state enacted RTW (Florida) and shortly before many other states followed suit. Due to limitations of time and scope, I will not be seeking to prove causality but rather to encourage further examination and scrutiny of RTW laws and their potential social, economic, and political effects on society.

Definition of Terms

Right-to-Work (RTW) – State level laws, either as a part of a state constitution, or by statute which prohibit union security agreements between employers and labor unions. This means that workers employed in unionized workplaces are banned from negotiating contracts which require union membership as a condition of employment.

Union Density – Figure which represents the percentage of each state's nonagricultural wage and salary employees who are union members. (Hirsch et al., 2001).

Voter Turnout – Figure which represents the percentage of voting eligible population (VEP) who cast a ballot in an election.

Review of Literature

Voter Participation in the U.S.

Data and literature on voter registration and participation rates in the United States is well established when considering an array of independent variables such as individual characteristics like age, race, gender, and socioeconomic status. Literature on broader social and economic factors like stock market performance, unemployment levels, military conflicts, and political tactics like gerrymandering of legislative districts are also established. Additionally, scholars have scrutinized various state level voter laws which have had significant effects on voter turnout, as was the case with poll taxes.

One contemporary example is a 2008 study by Jac C. Heckelman, which sought to determine convergence levels in voter turnout rates across the United States. Convergence tests were performed on state-level turnout rates for U.S. presidential elections from 1896 to 2004. Variables are measured as a percentage of total population eligible to vote (various criteria are used to calculate these numbers), or percentage of group characteristic and/or geographic boundary such as county or city. Per Heckelman, “convergence implies there may be a steady state level of turnout toward which voters are moving”. This idea is important to consider, according to him, because “The notion of convergence has significance for understanding normative issues regarding turnout and its policy implications” (Heckelman, 2008). He discusses multiple factors including the potential effects of the Electoral College system on voter turnout.

He notes that as has been shown in previous research, variations in state voting laws can have significant effects on voter turnout across states and he advocates for federal level regulations which would lessen differences across states and increase the likelihood of national convergence. Because the number of electoral college votes assigned to each state is determined by state populations, and not based on voter turnout levels, voters in states with lower turnout have greater power in their vote than those in states with higher voter participation. Heckelman asserts that if convergence exists (his research concludes it does for at least half the states), inequalities in voting will diminish over time.

Benjamin Highton's 2004 study examined the effects that barriers to voter registration have on election outcomes. He conducted a cost benefit analysis of voter registration and participation, a process which, for most of the US is the responsibility of individuals, and its potential partisan implications. He concluded that conventional voter registration reform has likely reached its limitations for enhancing voter turnout in the US and that any future motivator for increases in voter participation will be found elsewhere in the political system (Highton, 2004). It is important to note that this research was conducted and published prior to the 2013 Supreme Court decision which repealed most of the federal level requirements intended to protect voting rights from prohibitive state level voter laws (*Shelby County v. Holder*, 2013).

There are likely innumerable factors which influence voting behaviors across the country. Few voting determinants have historically been recorded in a reliable and congruous manner. A limited number of those factors have proven amenable to statistical analysis and manipulation for determining their direct effects. Over the first

three quarters of the last century, voting rights were dramatically expanded to include women, indigenous peoples, and Black voters, if only in law and not in practice. Many state level policies were enacted which made it virtually impossible for most of these minority groups to participate, for economic and social reasons such as requiring poll taxes, literacy tests and advanced voter registration requirements (Highton, 2004).

In a 2019 research brief, economist Ethan Kaplan considers a handful of factors which have been shown to either suppress voting or encourage participation. Voter participation rates in the U.S, according to Kaplan, range from 40% in non-presidential election years to as much as 56% during, much lower than rates in comparably wealthy and technologically advanced countries. One factor which he noted separates the U.S. from most of the developed world is when our elections are held – not on weekends or holidays. This is likely a contributor to the electoral bias toward high socio-economic status (SES) individuals since low SES individuals have less flexibility in and control over their work schedules (Kaplan, 2019).

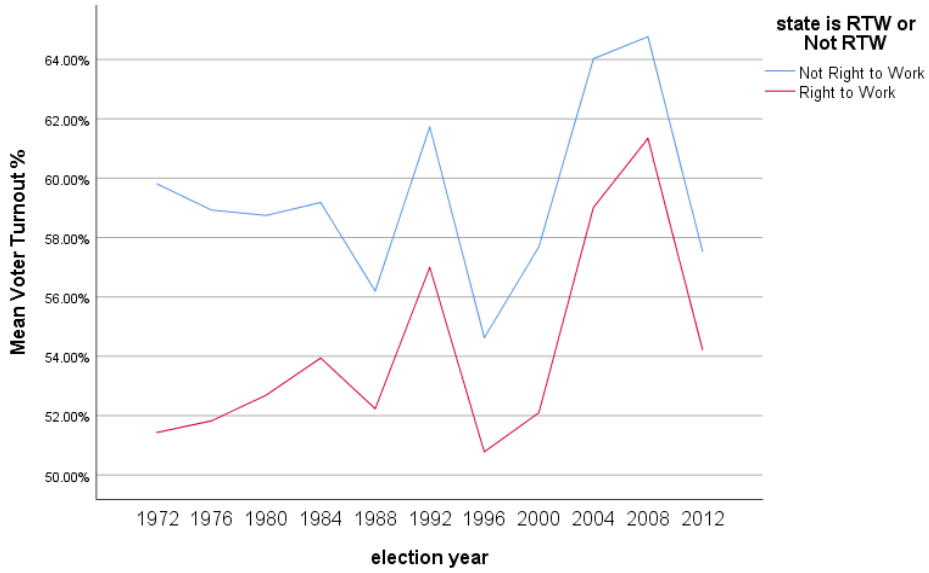
Two other factors which he and others have found which restrict voter access include voter ID laws, which require voters to present certain government issued identification documents at their polling place, in order to cast their vote, and the disenfranchisement of convicted felons, which often keeps them from voting even after they have served their sentence. He finds that both ethnic minorities and young voters are more likely to not have acceptable identification, and are therefore turned away more often, increasing those groups under representation in the electorate.

Voter registration requirements are another significant factor in the suppression of voter turnout. Instead of states automatically enrolling residents when they reach

voting eligible age, individuals are required to go through some registration process in most states. On top of registration requirements, most states restrict registration enrollment periods, with cut-off dates well in advance of election days, leading to further voter suppression. Kaplan cites various studies which have shown that restricted enrollment periods reduce turnout by up to 10 percent, whereas states with election day registration see an increase in voter turnout. In his paper, among his recommendations for public policies which would improve voter turnout, is making union representation easier.

Focusing in on union member voter turnout rates and those of their household members, Richard Freeman utilized four different data sets containing variables on unionism and voting levels, and found that the voting rate of union members averaged 12 points above that of non-union members, and that for non-union members in a household with union members, voting rates averaged 3 points higher than those in non-union households.

Fig. 3 *Average Voter Turnout % by Presidential Election Year RTW/ Not RTW States*



He notes that most of the difference can be attributed to socioeconomic factors which differentiate union members from others, but that a union voting premium (effect) does exist for both members and non-members with like characteristics at about 4 percentage points (Freeman, 2003).

Digging deeper into labor's footprint on voting, Jake Rosenfeld analyzed the effects of sectoral changes in labor as a result of de-unionization in the United States over the period from 1984-2006, and the potential political consequences of those shifts. There are essentially two arms of labor – the public sector and the private sector, whose members are dissimilar across multiple variables including educational attainment, income and voting participation. The decline in union density seen at the end of the 20th century was predominantly among private sector workers. He found that back in the early 1970's, privately employed union members outnumbered public by a ratio of five to one, whereas in 2006, they were virtually equal. Using the Current Population Survey (CPS), Rosenfeld estimated the union voting effect for both sectors. The results showed that the predicted effect was three times greater among private than public sector workers, meaning private sector worker's voting probability was 6.7 points higher than similar nonmembers, whereas public sector unionists had a probability only 2.4 points above similar nonmembers. He concludes that because private sector unionization is now at such low levels, labor's overall ability to create the 'union effect' in voting are heavily diminished on the aggregate (Rosenfeld, 2010).

Organized Labor as a Political Force

Politics and policy advocacy have long been included in the top priorities of organized labor. An essential function of labor unions is to educate their members on political issues which affect membership, as well as to represent members to all levels of government. A significant and critical portion of that representation is expressed through lobbying efforts, engagement with elected representatives, campaign financial support and perhaps most relevant, voter mobilization. Research suggests that state level RTW laws demonstrably affect voter participation rates (Freeman & Medoff, 1983) (Feigenbaum et al. 2018; Zullo 2008).

In their seminal work from 1983, "*What Do Unions Do?",* Richard B. Freeman and James L. Medoff found that unions attempt to influence politics in multiple ways, including committing union resources to registering people to vote, encouraging members and their households to vote for union supported candidates, providing financial support for candidates, and by allocating union resources such as staff and volunteer time to the campaigns of union favored candidates. The authors note that because low to middle income individuals are more likely to hold views favorable to unions and because those with low SES are highly underrepresented in the electorate, labor's spending in this arena is often a worthy investment (Freeman & Medoff, 1983). However, in their assessment of organized labor's track record on legislative efforts, they find that although unions are powerful political forces in some aspects, they have historically been much more successful at advancing progressive social legislation that benefited working class and blue collar populations as a whole, not just union members.

Organized labor's mobilization of the electorate is not a uniquely American phenomenon. It appears instead to be connected to capitalist economic systems across the globe. Research by Radcliff and Davis analyzed data of nineteen industrialized democracies as well as the United States from the 1970s and 1980s. Using cross-sectional and pooled time-series data they determined that the higher the union density, the higher voter turnout was with a five-percentage point increase in union density accounting for a one percent point increase in voter turnout. They attributed this effect to a combination of direct and indirect factors, the latter of the two being unions ability to influence the ideological positions of political parties seeking to appeal to lower and middle-class voters (Radcliff & Davis, 2000). The authors cite broad moral and organizational effects of unions as key to their ability to mobilize union and nonunion voters alike.

In their 2007 journal article, *"Unions, Voter Turnout and the Class Bias in the Electorate, US 1964-2004",* Jan E. Leighley and Jonathan Nagler examined the effects which organized labor, as an institution, and its decline may have had on the level of class bias seen in voter turnout. Research finds a class bias exists within the general electorate which favors high socioeconomic status individuals over low SES individuals (Leighley and Nagler 1992b; also see Rosenstone and Hansen 1993; Shields and Goidel 1997; Wolfinger and Rosenstone 1980).They point out that although it is known that unions are a driver of voter turnout, the demographic characteristics of those voters had not been well established. "…without knowing who unions mobilize, it is impossible to know how the decline in union strength over the past several decades has affected class bias (i.e., the over-representation of high-income individuals relative to low-income

individuals) in the electorate…That unions weakened at a time when most argue that voter turnout declined suggests indeed that union strength matters" (Leighley & Nagler, 2007).

Leighley & Nagler theorized that whatever success unions have in mobilizing low SES voters whether union or nonunion, the weakening of union strength will have a positive correlation with increases in the class bias among the electorate. They note that Radcliff's individual level analyses using pooled time-series fixed effects models do not account for state-level effects, which they find to be critically important in assessing unions' abilities in mobilizing voters across and within sub-national jurisdictions. Using both contextual and individual level variables to estimate the impact of unions on voter turnout they determined that unions increase turnout for both members and nonmembers. They also found that state-level union strength had a statistically significant effect on turnout at the 90% level, where the greater the union strength, the higher voter turnout was. Their estimates show that had unions remained as strong as they were in 1964, turnout would have been approximately 3 percentage points higher in 2004. Additionally, because unions likely turnout voters across the SES spectrum who are more favorable to Democratic candidates, the political effects of union decline are not fully expressed in their research, and state level union strength or its decline will have broad implications for policy outcomes over the next decade and beyond (Leighley & Nagler, 2007).

Over roughly the past decade and a half, coalition building with organizations outside of organized labor has been an increasingly popular and necessary strategy for unions in strengthening their political power and achieving policy goals in the face of

increased deregulation and free market capitalism which has come to dominate the landscape. Roland Zullo's paper *"Union Membership and Political Inclusion"* investigates this shift, using county level data to assess how unions effected the general population's voting behavior in the 2000 presidential election.

Zullo found that the higher the union density, the greater the voter turnout was, but that this effect decreased at a certain point, resulting in a curvilinear model. The correlation was stronger in counties with lower median income rates, lower education rates, and higher levels of income inequality which evinces proof that unionization reduces the electoral bias toward high SES individuals. Importantly for my research and in line with others, he found that state right-to-work laws, and the absence of collective bargaining rights for public employees, reduced labor's ability to increase voter turnout. He notes that "Marginally, states with right-to work laws had an approximately 1.7% lower voter turnout, while the marginal difference between states with full bargaining rights for public employees and states with either no bargaining rights or partial bargaining rights for public employees was about 3.25%. Together, the existence of right-to-work laws and the absence of collective bargaining rights for public employees were associated with nearly 5% lower voter turnout. These findings suggest that legal institutions that weakened labor unions diminished unions' ability to mobilize voters" (Zullo, 2008).

Union Density & the Effects of Right-to-Work Laws

In considering RTW laws and their potential impacts, it is important to have a clear understanding of who may be affected and how. According to the Congressional

Research Service (Mayer, 2004), the number of union members reached its highest point in 1979 at 21 million, whereas in 2003, only 15.8 million workers were unionized. Union membership is greater among white than black workers, but a greater percentage of black workers (15.6%) were union than white (11%) in 2003. They found that the wage premium is typically larger for less skilled than for more skilled workers, greater for blue-collar than white-collar workers, for younger than older workers and for less educated workers than college graduates (Mayer, 2004). They note that some evidence indicates that the union effect in wages is greater for non-whites than for whites, and that some studies find that the wage premium is 5-10% higher for black workers than for white workers (Mayer, 2004). These findings show that there may be significant consequences associated with RTW laws, along racial and socio-economic lines. Union density varies widely across states with New York, Hawaii, Alaska, Minnesota, Rhode Island, and Washington (all states which have never enacted RTW laws) having the highest rates, all above 15%. North and South Carolina, Texas, and Utah (all have RTW laws) had the lowest union density in 2018 all falling below 4.3% (Hirsch et al,2001).

In *The Federalist's View of Right-to Work Laws* from 2015, Andrew W. Neidhardt explains how, " Poor Americans face the largest impediments to political participation, and they participate less frequently in politics than other groups...In order for the voice of the people to be heard in today's government, it is necessary that low-income American's band together to pool their collective strength." He finds that unions provide the opportunity for that collective action through delegated representation. Through this system, he imagines that union leaders can become policy experts on the complicated issues that our government faces, a task likely impossible for individual workers to take

on alone. “Labor unions allow the working class to counteract the disproportionate influence of the wealthy, thus labor unions have the ability to promote the Federalist goal of political participation and representation of all classes“ (Neidhardt, 2015). Neidhardt asserts that unions ability to recruit and organize workers effectively is crucial to their ability to counterbalance the political interests of the wealthy. RTW laws severely limit unions ability to accomplish these tasks and therefore result in lower union density and weaker political representation. Importantly, Neidhardt points out that, “Even if a union member does not individually agree with every view of a candidate, the infrastructure of union membership encourages more participation, prompting all union members to participate, even if they vote against the union’s preferences. They are working together to promote the representation of their views in government.”

According to Ruben J. Garcia, in his 2019 review, *Right to Work Laws: Ideology and Impact*, “Conservative interests funded many of the legislative efforts at the federal and state levels to implement RTW in a clear effort to weaken the labor movement and its allies in the Democratic Party. The goals of greater freedom for nonunion workers were secondary goals for many of these groups” (Garcia, 2019). Additionally, he asserts that the establishment of RTW laws were at least in part a product of the Jim Crow era ideologies in which they were established, and unions were used to divide workers by race and limit black worker power. He notes that once Title VII of the Civil Rights Act of 1964 was passed, and discriminatory practices became illegal, the argument shifted toward focusing on individual’s objections to the political activities of the unions (Garcia, 2019). Importantly, Garcia finds that “State RTW laws are aimed at the representational activities of unions, but the impact of RTW laws on politics is also well-known. As shown

in the 2016 presidential election, 19 of 23 states (83%) without a RTW law voted for the Democratic nominee, Secretary Hillary Rodham Clinton—only Alaska, Ohio, Pennsylvania, and Montana voted for the Republican nominee, and now president, Donald J. Trump," (Garcia, 2019).

Multiple scholars have noted that whatever the effects of RTW laws, they are likely time sensitive, at least in any quantitatively measurable manner. For effects on union organizing, Ellwood and Fine find a 46% decline in the first five years after enactment, and an additional 30% in the next five years after that, with no measurable effects after ten years (Ellwood and Fine, 1983). However, as William J. Moore noted in his 1998 review of literature, the majority of findings focus on measures of economic effects (Moore, 1998).

As I have touched on, there exists a substantial amount of literature on the history of voter participation, the political power of organized labor in the US, and state level right-to-work laws as important social and institutional areas worthy of examination on their own. However, due at least in part to the complex nature of the topic and the plethora of potential extraneous variables which make proving causality a difficult task, there is limited data on any potential correlations between right-to-work laws and voter participation rates. In their 2018 National Bureau of Economic Research working paper, James Feigenbaum, Alexander Hertel-Fernandez and Vanessa Williamson have attempted to fill this gap in part by addressing among other variables, RTW effects on Democratic vote shares, using state border county pairs to estimate the change in voter turnout between pre- and post- enactment of RTW laws in the seven states which passed such laws between 1980-2016 (Feigenbaum et al., 2018).

Through their work they found that Democratic vote shares were reduced by 3.5% points in the counties they analyzed, and overall turnout was reduced in those counties by 2% points. Although it was not the main focus of their work, using data from the American National Election Survey, they concluded that among individual voter groups such as youth and minority voters, there was not a disproportionate decline after the RTW laws were enacted (Feigenbaum et al., 2018). I suspect that any disproportionate decline in youth and minority voting was a direct result of the 1964 Civil Rights Act (CRA) and the 1965 Voting Rights Act (VRA), which established federal regulations restricting individual states from enacting voter suppression laws such as poll taxes and literacy tests with gaining approval of the federal government. However, this trend is likely to have seen a reversal after the Supreme Court's 2013 ruling in Shelby County v Holder to overturn a key section of the VRA, invalidating the requirement (*Shelby County v. Holder*, 2013).

Methodology & Data

Methodology

The goal of my research is to improve understanding of the potential effects of state level Right-to-Work (RTW) laws on voter participation rates across the United States. My hypotheses are: (1) States with RTW laws have lower voter turnout than non RTW states (2) States with RTW laws have lower union density than non RTW states. (3) Union density and voter turnout are positively correlated, meaning that the higher the rate of union density, the higher the rate of voter turnout in a given election. (4) Enactment of RTW laws suppresses voter turnout, at least in the short-term. (5) RTW laws have a negative effect on voter turnout independent of the effects of union density on voter turnout.

I anticipate that controlling for variables such as race, educational attainment, rate of urbanization and occupational sector, as well as occupational class (public or private sector), will be significant to the results of the analysis. To estimate the effects of RTW laws on voter turnout, I have run multiple linear regressions using SPSS software, in keeping with the methods used in relevant literature (See Feigenbaum et al.). Further, an additional goal is to disentangle whether, independently of union density, RTW appears to contribute to voter turnout at the state level.

Data

This analysis was conducted using secondary data collected from multiple sources. Voter turnout data from presidential election years between 1972 and 2012 was taken from the United States House of Representatives History, Art & Archive's

website. US decennial census data from 1970 thru 2000 and the Census American Communities Survey for 2010, were sourced from the Social Explorer website. Data on union density was borrow from the work of Barry T Hirsch, David A. MacPherson, and Wayne G. Vroman. For intercensal election years, I estimate the covariate values by multiplying by the election year (one thru nine) times the difference between the value for one census and the next, dividing it by ten and adding the earlier census figure.[1]

The sample contains 528 individual cases (N= 528), from 48 states over 10 presidential elections across 66 variables (including the 48 state 'dummy' variables). Indiana was excluded from the data because it had RTW in place from 1957 thru 1965, when it was repealed, and then enacted again in 2012, and Delaware was excluded because it has at least one local jurisdiction with RTW laws in place. The U.S. District of Columbia was excluded because of its limited geography.

Measures

For this analysis, the main dependent variable is Voter Turnout %. The independent variables of greatest concern include % Union Density and four RTW variables. The first is a binary dummy variable of 0/1 for states that are Not Right to Work (0) and states that are RTW (1), the second is the Years Since RTW Enacted variable (-48 to 68), which is important because states enact RTW laws at different times, and prior research suggests time, as a function of distance before or after an event (in this case RTW enactment) matters (Ellwood & Fine, 1983b).

[1] Example: Total Population of Alabama 1972 and 1976
Total Population of Alabama, US Census 1970: 3,444,165 and for 1980: 3,893,888.
Estimate for 1972: 2(3,893,888 – 3,444,165)/10 + 3,444,165 = 3,534,110.
Estimate for 1976: 6(3,893,888 – 3,444,165)/10 + 3,444,165 = 3,713,999.

The third and fourth RTW variables are Interaction of RTW, which estimates any time trend, and Interaction of RTW Squared which estimates any increase or decrease in the effect from the interaction variable, thus permitting tests for non-linear time trends. Negative values of Years since RTW indicate year prior to passage of RTW.

An Election Year time variable coded (2 to 12) was used for the 10 presidential elections between 1972 and 2012. Demographic variables used are: Population Density per square mile, % Population White, % Population Black, % Population Other Race, % Population 25+ Highest Degree Attained: College, % Population 16+ Civilian Labor Force: Unemployed, % Employed Persons: Construction, % Employed Persons: Manufacturing, % Employed Persons: Transportation and % Employed Persons: Wholesale Trade. Where available, control variable follows as closely as possible those used by Feigenbaum et al. 2018. Descriptive statistics for core variables are provided in Table 2 below.

For the Years from RTW enactment variable, states which have never been RTW are coded between -48 and -4. They are always negative because they are calculated as difference year of most recent election and the election year denoting each case's data. 48 (1-48) state dummy variables were created to help determine state fixed effects.

Table 2. *Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
State is RTW or Not RTW	528	0	1	-	-
Number of years since RTW enacted	528	-48	68	2.39	35.824

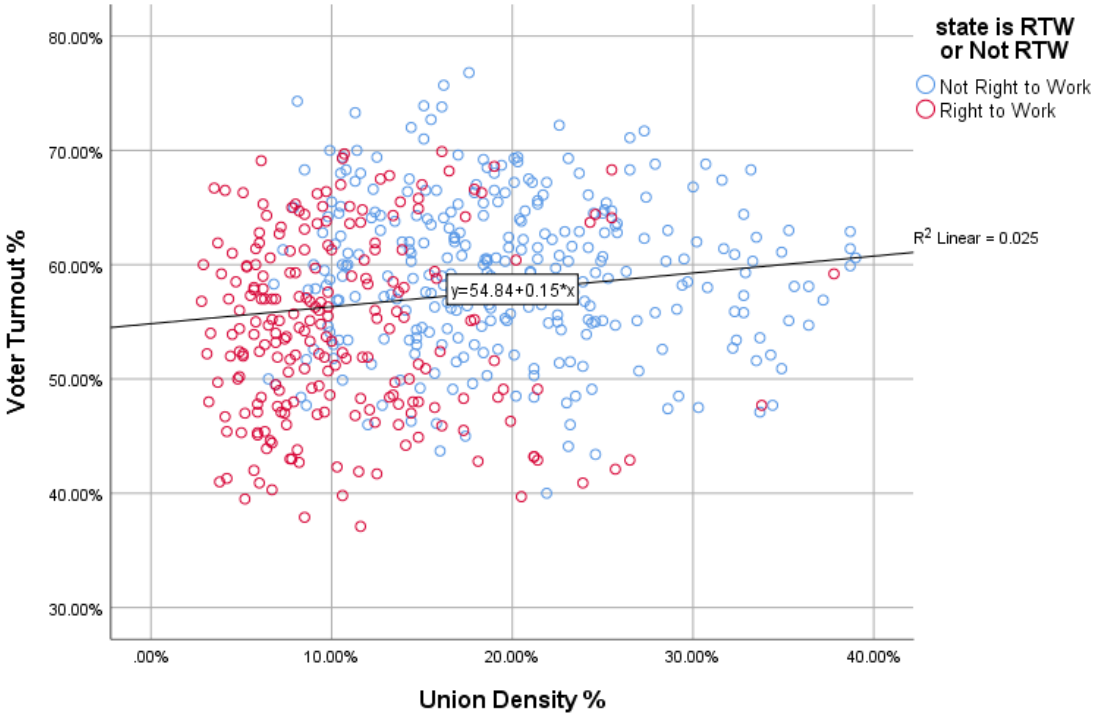
Interaction of RTW	528	0	68	17.29	22.199
Interaction RTW Squared	528	.00	4624.00	790.6572	1199.73589
Union Density %	528	2.80%	39.00%	15.8002%	8.09699%
Voter Turnout %	528	37.10%	76.80%	57.1746%	7.64049%
Election Year	528	2	12	-	-
Population Density Per Square Mile	528	.6	1207.7	165.832	239.4625
% Population White	528	24.28%	99.56%	79.8453%	13.75222%
% Population Black	528	0.17%	37.15%	9.4735%	9.41506%
% Population Other Race	528	0.21%	73.91%	8.3295%	11.09789%
% Population Highest Degree Attained: College	528	8.47%	38.59%	18.4358%	5.46059%
% Population Civilian Labor Force: Unemployed	528	1.22%	6.33%	2.9335%	0.72778%
% Population 16+ Public Sector	528	2.47%	68.70%	9.7683%	5.06233%
% Employed Persons 16 Years & Over: Construction	528	3.70%	10.25%	6.7408%	1.15568%
% Employed Persons 16 Years & Over: Manufacturing	528	3.16%	41.35%	16.6015%	7.96732%
% Employed Persons 16 Years & Over: Transportation	528	2.23%	8.90%	4.6177%	0.97275%
% Employed Persons 16 Years & Over: Wholesale trade	528	2.08%	5.29%	3.6995%	0.70326%
Valid N (listwise)	528				

Analysis & Results

Analysis

Starting with Model 1 from Table 3, the results confirm our hypothesis that union density is both correlated with and predictive of voter turnout (See Fig. 4 below).

Fig. 4 *Voter Turnout for % Union Density, RTW & Not RTW States (See Table 3, Model 1)*

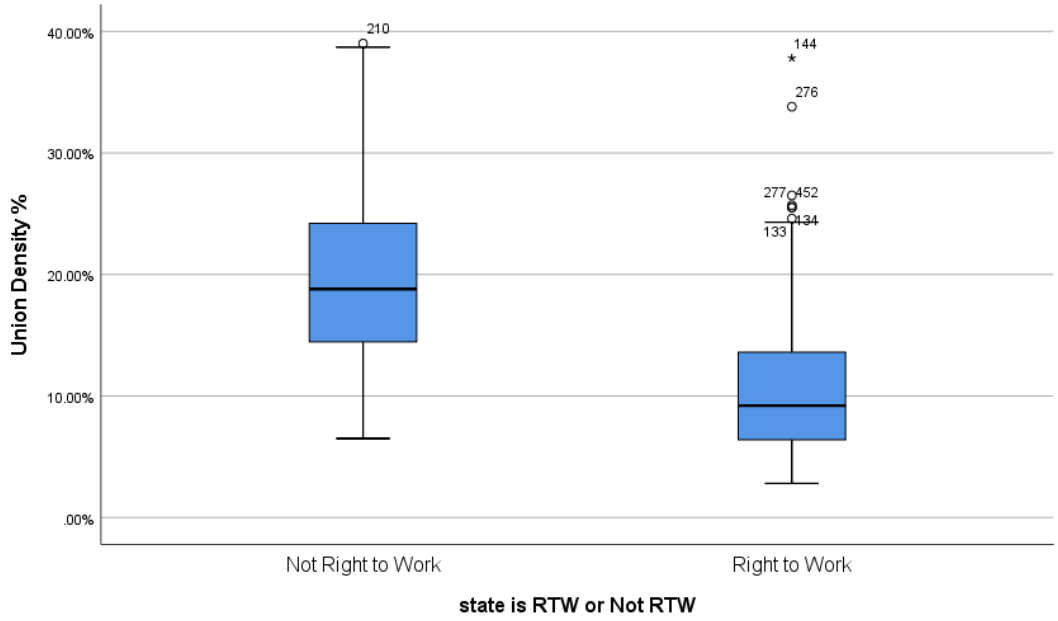


This aligns with similar findings from the literature (Leighley & Nagler, 2007; Radcliff & Davis, 2000) and is consistent with data on voter participation that union members and households are more likely to vote than the population as a whole (Freeman, 2003). The data indicates a .148% increase in voter turnout for every 1% increase in union density, a roughly eight to one ratio, which is similar to Radcliff and Davis' findings of a five to one ratio, taking into account that their data examined over 20 countries. In Model 3 from Table 3, union density is not significant (p=.432) but this is likely explained

by the presence of the statistically significant RTWNRTW independent variable in the model. Models 1 & 2 in Table 4 (See Fig. 5 & 6 below) support this explanation by showing that union density is negatively correlated with a state's RTW or NRTW status, i.e. we expect that states which are RTW will have less union density because RTW laws allow members to opt out of paying membership fees, which significantly reduces union resources, generally away from political activities.

Fig 5. *Union Density by Years Since RTW Enacted, RTW/NRTW States (See Table 4, Model 2)*

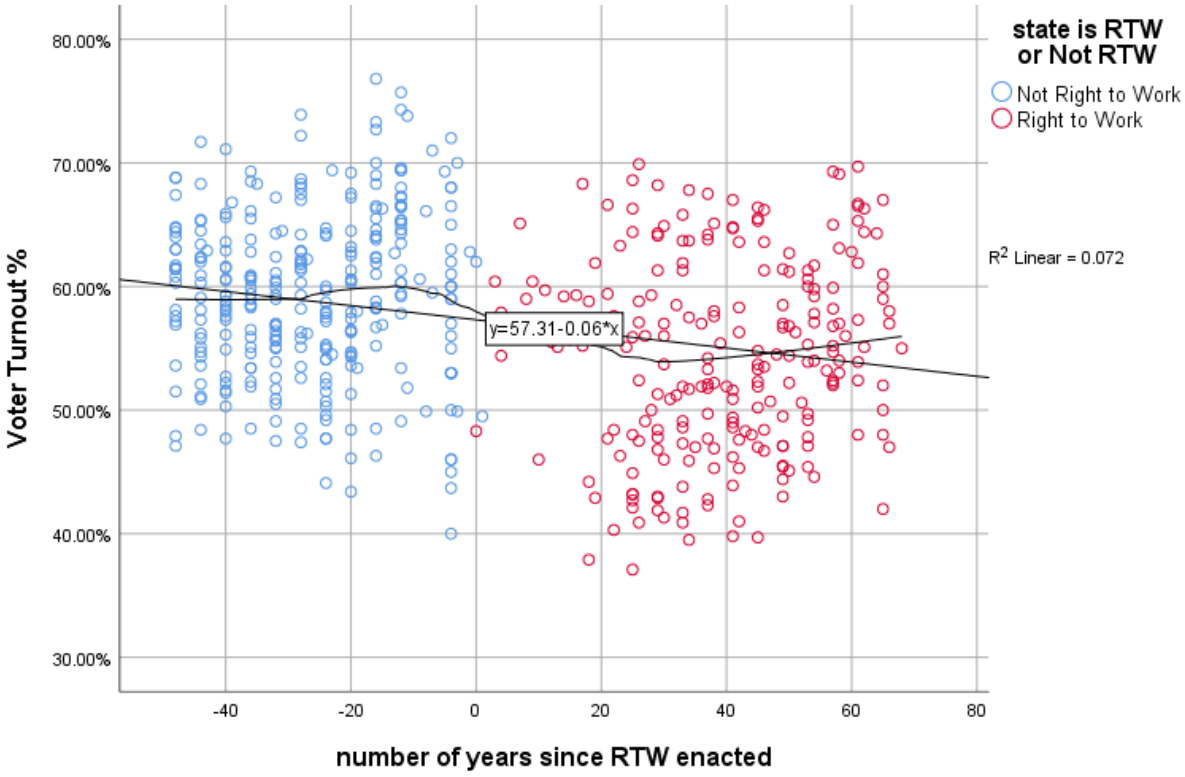
Fig. 6 *Union Density for RTW/Not RTW States (See Table 4, Model 1)*



When considering the effects of our main suspected determinant on voter participation, a state's RTW status, the data shows that the variable RTW/NRTW is statistically significant in Models 2 and 3 at a level of confidence ($p<.001$) telling us that even when controlling for union density (Table 3, Model 3), RTW laws have a significant, negative effect on voter turnout ($\beta= -5.366$). In Models 4 & 6 from Table 3 which are controlling for most of our covariates, Year Since RTW Enacted seems to be the strongest predictor of voter turnout, also with a negative effect over time. Eight additional regressions were run, eliminating all but one RTW variable and union density in the first four models, and eliminating all but one RTW variable, but including union density in the second four. The results of these regression models showed that Years Since RTW Enacted was the only variable that showed significant, moderately negative results for voter turnout in both specifications ($\beta= -1.519$ without union density; $\beta= -1.569$ with union density). This tells us that RTW is a significant, moderately negative

predictor of voter turnout, at least in the short term. However, in Model 5 from Table 3, we have omitted the RTW/NRTW variable and left in the other three RTW variables. Interestingly in this model, Years Since RTW Enacted becomes insignificant, the Interaction of RTW variable becomes modestly negatively significant (β= -.438) and the Interaction of RTW Squared becomes positively significant, but to a very small degree (β=.006) .This variable tells us that the effect of RTW laws change over time, which is comparable to findings from the relevant literature (Ellwood & Fine, 1983b) and shows us that the change in effect over time is not stable but diminishes to the point where any effect is no longer statistically measurable or there is no more effect (See Fig. 7 below).

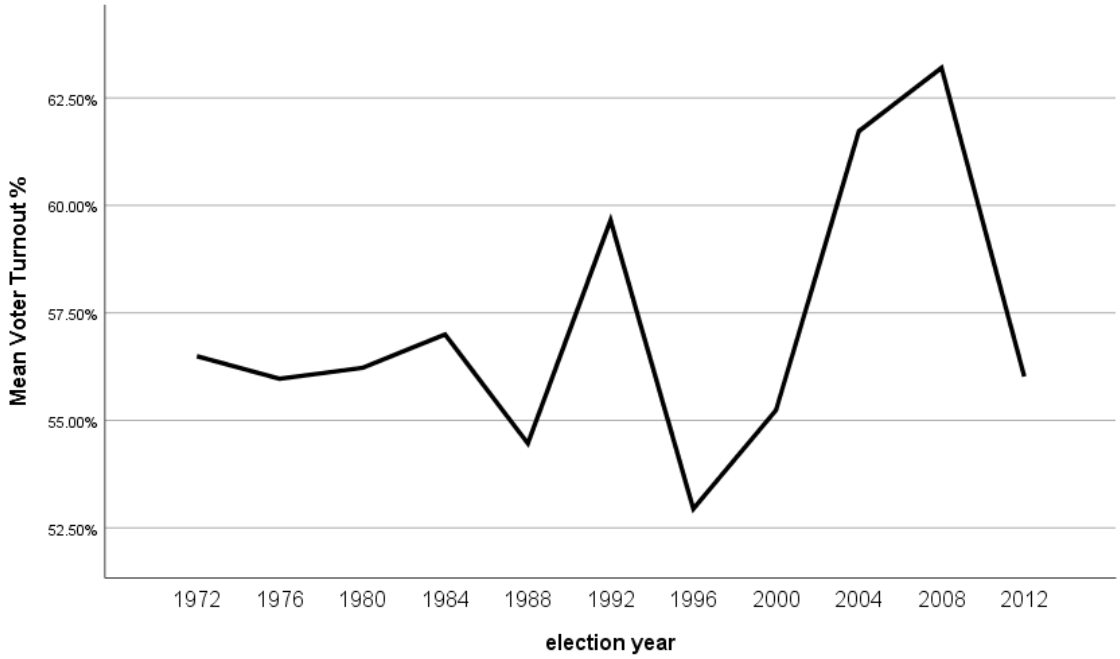
Fig. 7 *Voter Turnout Years Since RTW Enacted RTW/NRTW States 1972-2012 (See Table 3, Model 5)*



Model 4 from Table 3 includes all covariates except RTW/NRTW because we are using the Interaction RTW variables instead. Including both (or all variables) may result

in multicollinearity errors caused by the fact that two or more of the independent variables are too closely correlated with one another. The data in the model tells us that some of our hypotheses are supported, such that factors like employment status, election year, and race are predictive of voter turnout. We know that overall, voter turnout had increased over time (see Fig.8 below), so it is not surprising that the election year variable is moderately positively predictive of voter turnout. Again, we see that union density is positively correlated with voter turnout.

Fig. 8 *Average Voter Turnout % by Presidential Election Year, 1972 to 2012*



When a similar regression is run which is the same as Model 4 from Table 3, but the state dummy variables are left out, we find that additional factors such as population density, education and employment sector are also predictive of voter turnout. This tells us that there are strong fixed effects by state, meaning the variance in data across the states is significant.

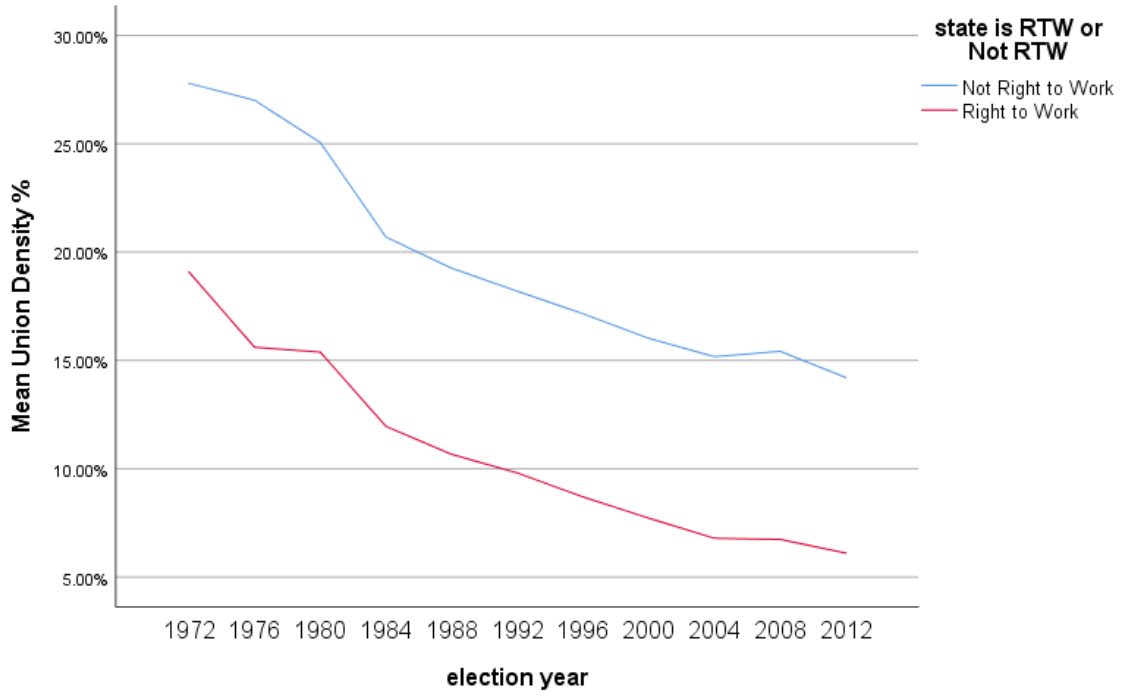
Because we know race is correlated with characteristics like wealth and education, it is expected that we see Black and other non-White individuals voting at lower rates overall and it especially speaks to likely effects of voter suppression mentioned in the literature review, such as poll taxes and literacy tests (Highton, 2004) although in Model 4 from Table 3, only the Other Race variable has a significant, modestly negative effect on voter turnout (β= -.251). Three out of the four employment sector variables (Construction, Manufacturing and Transportation) are all negatively correlated with voter turnout when state fixed effects are not included in the regression. It may be that because these sectors are or were in the past highly unionized, their effect is being accounted for by our union density variable.

Model 6 is the same as Model 4, except we have swapped out the union density variable for RTW/NRTW. For most of the variables that are significant, results are very closely matched with those from Model 4, as in election year, race (Other Race), and employment status. Additionally, the only difference between Model 6 and Model 4 is the Union Density variable, which seems to be a reasonable proxy for the RTW/NRTW variable.

The last regression conducted is Model 3 from Table 4, which examines if RTW status effects union density over time by excluding the RTW/NRTW variable and replacing it with the Interaction of RTW variables and the time variable for years since RTW was enacted. The results tell us that again RTW laws have a significant, moderately negative but diminishing effect over time on voter turnout. Interestingly, the Interaction squared variable is significant and positive, but the value is miniscule. The

data tells us that, as we would expect, over time (Election Year, β= -3.131), union density has declined significantly (See Fig. 9 below).

Fig. 9 *Average Union Density %, RTW and Not RTW States*



We also see that educational attainment is modestly positively associated with union density, but that race (Black, β= -.684) for certain populations is negatively predictive of union density. The latter may be attributable to the fact that unions were racially segregated for many years post- WWII and that Black communities had and still have less access to education and employment opportunities overall. Employment in the Wholesale Trade is significantly predictive of lower union density, which is unsurprising, as that sector is not highly unionized.

Table 3. *Linear Regressions of Determinants of % Voter Turnout 1972-2012*

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Variables	Coef./ t/ SE sig.	Coef./ t/ SE sig.	Coef./ t/ SE sig.	Coef./ t/ SE sig.	Coef./ t/ SE sig.	Coef./ t/ SE sig.
Constant	54.838 76.027 .721 .000	59.35 141.973 .418 .000	60.086 58.887 1.020 .000	-17.460 -.852 20.501 .395	59.854 70.518 .849 .000	-27.260 -1.366 19.950 .172
State is RTW or Not RTW	-	-5.026 -7.917 .635 .000	-5.366 - 6.987 .768 .000	-1.196 -.549 2.178 .583	-	-
Interaction of RTW	-	-	-	-.103 -.924 .112 .356	-.438 -5.155 .085 .000	-.127 -1.284 .099 .200
Interaction of RTW Squared	-	-	-	.002 1.482 .001 .139	.006 5.804 .001 .000	.002 1.777 .001 .076
Years since RTW enacted	-	-	-	-1.424 -4.806 .296 .000	.020 .703 .029 .482	-1.483 -5.190 .286 .000
Union Density	.148 3.639 .041 .000	-	-.037 -.786 .047 .432	-	-	.349 3.920 .089 .000
Election Year	-	-	-	5.961 4.549 1.310 .000	-	6.803 5.294 1.285 .000
Pop. Density per sq. mile	-	-	-	.004 .313 .012 .754	-	-.006 -.454 .012 .650
% Pop. White	-	-	-	Excluded for collinearity	-	Excluded for collinearity
% Pop. Black	-	-	-	.197 .651 .302 .515	-	.450 1.483 .303 .139
% Pop. Other Race	-	-	-	-.230 -1.997 .115 .046	-	-.251 -2.213 .113 .027
% Pop. College Degree	-	-	-	.067 1.092 .061 .275	-	.028 .458 .061 .647
% Pop. Civilian Labor Force: Unemployed	-	-	-	1.749 2.552 .685 .011	-	1.560 2.315 .674 .021
% Pop. 16+ Public Sector	-	-	-	-.067 -1.523 .044 .128	-	-.074 -1.720 .043 .086
% 16+ Emp. Construction	-	-	-	.049 .098 .499 .922	-	-.129 -.263 .490 .793
% 16+ Emp. Manufacturing	-	-	-	-.097 -.805 .120 .421	-	-.135 -1.147 .118 .252
% 16+ Emp. Transportation	-	-	-	-.900 -1.278 .704 .202	-	-.999 -1.441 .693 .150
% 16+ Emp. Whlsl. Trade	-	-	-	-.757 -.930 .814 .353	-	-.098 -.120 .817 .904
State Code variables x 48				See Appendix for results by state.		See Appendix for results by state.

Number of obs.	528	528	528	528	528	528
F	13.241	62.686	31.629	19.267	25.636	20.134
Prob > F						
R-squared	.025	.106	.108	.848	.128	.854
Adj. R-squared	.000 .023	.000 .105	.000 .104	.000 .720	.000 .123	.000 .729

Table 4. *Linear Regressions of Determinants of % Union Density 1972-2012*

	Model 1	Model 2	Model 3
Variables	Coef./ t/ SE sig.	Coef./ t/ SE sig.	Coef./ t/ SE sig.
Constant	19.781 51.039 .388 .000	59.854 70.518 .849 .000	39.324 3.751
State is RTW or Not RTW	-9.179 15.597 .589 .000	-	2.109 1.894 1.114 .059
Interaction of RTW	-	-.438/ -5.155 .085 .000	-.058 -1.014 .057 .311
Interaction of RTW Squared	-	.006 5.804 .001 .000	.001 2.082 .001 .038
Years since RTW enacted	-	.020 .703 .029 .482	.332 2.192 .152 .029
Election Year	-	-	-3.131 -4.672 .670 .000
Pop. Density per sq. mile	-	-	.026 4.099 .006 .000
% Pop. White	-	-	Excluded for collinearity
% Pop. Black	-	-	-.684 -4.425 .155 .000
% Pop. Other Race	-	-	.052 .892 .059 .373
% Pop. College Degree	-	-	.105 3.367 .031 .001
% Pop. Civilian Labor Force: Unemployed	-	-	.419 1.195 .350 .233
% Pop. 16+ Public Sector	-	-	.020 .911 .022 .363
% 16+ Emp. Construction	-	-	.360 1.411 .255 .159
% 16+ Emp. Manufacturing	-	-	.076 1.241 .061 .215
% 16+ Emp. Transportation	-	-	.344 .956 .360 .340

% 16+ Emp. Whlsl. Trade	-	-	-1.795 -4.312 .416 .000
State Codes variables x48			See appendix for results by state.
Number of obs. *F* *Prob > F* *R-squared* *Adj. R- squared*	528 243.274 .000 .316 .315	528 25.636 .000 .128 .123	528 107.445 .000 .967 .935

Conclusion

Policy Implications

In this paper I have attempted to briefly outline the story of how and why state level Right-to-Work (RTW) laws came to be in the United States and what their effects have been shown to be through the measurement of union density and voter participation in presidential elections between 1972 and 2012.

The idea for this project came from my interest in organized labor and the labor unions' activism and engagement in our political systems on behalf of working people.

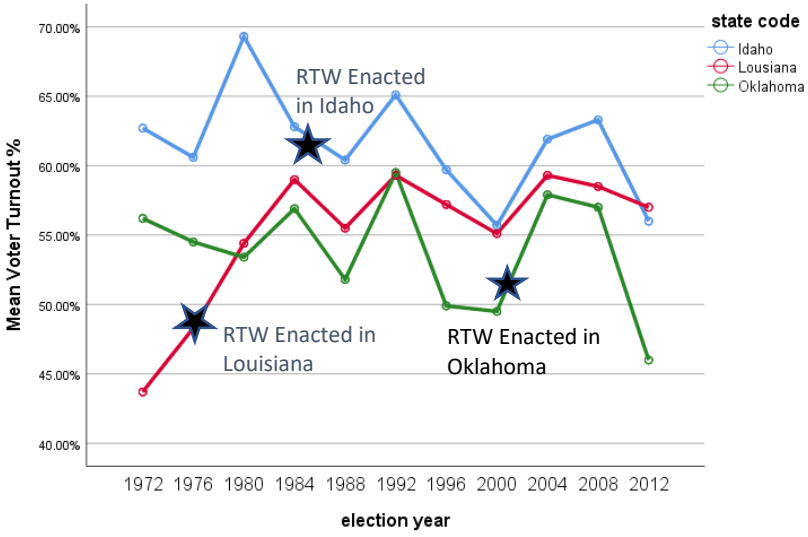
Overall, taking into consideration each model, it appears from this analysis and in conjunction with some of the existing literature (Feigenbaum et al., 2018), that state level Right-to Work (RTW) laws have a measurable effect on voter turnout in the United States. Representation matters, and even at an effect rate of 2-3%, given the increasingly small margins by which major elections are won or lost these days, the implications of such laws have the potential to dramatically alter the economic, social, environmental, and other policies which are significantly consequential to the lives of all Americans. Additionally, because the right to vote, in democratically held elections is such a foundational component to the ideals of our country, any policies which potentially contribute to the suppression of that right are worthy of exhaustive and continuing investigation and scrutiny.

Limitations and Potential Future Research

The most significant limitation to this analysis is the lack of data and/or the level of statistical techniques which are used. Additionally, time and scope boundaries limited the depth and precision of the analysis. Other factors which potentially contributed to limitations in the analysis include various omitted variables.

Any further research should seek to include union density data from roughly 1940 forward, and corresponding census data in order to capture the effects of RTW enactment which occurred in states between 1944 and 1963 during which 17 states passed RTW laws. The time period captured for this analysis (1972-2012) saw only five states (Idaho, Louisiana, and Oklahoma, Michigan, and Indiana) enact RTW laws. Two of the five states passed their laws in 2012, which is why they were not considered RTW in this analysis. As we can see in Fig. 10 below, these results provide limited information on any potential effects of RTW from the period preceding as well as following enactment of such laws.

Fig. 10 *Voter Turnout for Presidential Elections, 1972-2012, Idaho, Louisiana & Oklahoma*



A method for controlling state level anomalies such as those which caused me to exclude Indiana, Delaware and the District of Columbia, and additional measures of state policy which may affect voter turnout would likely also advance the precision of the findings. Following the method employed by Feigenbaum et al. of using county border pairs would also likely improve the precision of the data, as well as allow as they did, for causal inference.

Appendix

From Table 3, Model 4.

Full Results for *Linear Regressions of Determinants of % Voter Turnout 1972-2012*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-17.460	20.501		-.852	.395
	state is RTW or Not RTW	-1.196	2.178	-.078	-.549	.583
	Interaction of RTW	-.103	.112	-.300	-.924	.356
	Interaction RTW Squared	.002	.001	.309	1.482	.139
	number of years since RTW enacted	-1.424	.296	-6.678	-4.806	.000
	election year	5.961	1.310	2.469	4.549	.000
	Population Density Per Square Mile	.004	.012	.122	.313	.754
	% population Black	.197	.302	.242	.651	.515
	% population other race	-.230	.115	-.334	-1.997	.046
	% population highest degree: college	.067	.061	.048	1.092	.275
	% population 16+ public sector	-.067	.044	-.044	-1.523	.128
	% population civilian labor force: unemployed	1.749	.685	.167	2.552	.011
	% Employed Persons 16 Years and Over: Construction	.049	.499	.007	.098	.922
	% Employed Persons 16 Years and Over: Manufacturing	-.097	.120	-.101	-.805	.421
	% Employed Persons 16 Years and Over: Transportation	-.900	.704	-.115	-1.278	.202
	% Employed Persons 16 Years and Over: Wholesale trade	-.757	.814	-.070	-.930	.353
	state code=Alaska	3.406	5.287	.064	.644	.520

state code=Alabama	82.287	23.043	1.540	3.571	.000
state code=Arkansas	92.324	23.986	1.727	3.849	.000
state code=Arizona	95.899	23.781	1.794	4.033	.000
state code=California	-2.935	3.780	-.055	-.777	.438
state code=Colorado	1.450	2.763	.027	.525	.600
state code=Connecticut	-1.945	7.474	-.036	-.260	.795
state code=Florida	99.138	24.595	1.855	4.031	.000
state code=Georgia	86.376	25.325	1.616	3.411	.001
state code=Hawaii	1.990	8.011	.037	.248	.804
state code=Iowa	110.289	23.203	2.064	4.753	.000
state code=Idaho	52.218	11.299	.977	4.622	.000
state code=Illinois	-2.633	5.001	-.049	-.527	.599
state code=Kansas	89.050	20.145	1.666	4.421	.000
state code=Kentucky	-10.354	3.118	-.194	-3.320	.001
state code=Louisiana	52.396	17.658	.980	2.967	.003
state code=Massachusetts	-2.475	8.533	-.046	-.290	.772
state code=Maine	5.440	1.928	.102	2.821	.005
state code=Michigan	5.536	5.003	.104	1.107	.269
state code=Maryland	-12.579	7.601	-.235	-1.655	.099
state code=Minnesota	10.651	2.382	.199	4.471	.000
state code=Mississippi	78.901	24.399	1.476	3.234	.001
state code=Missouri	-1.916	3.981	-.036	-.481	.631
state code=Montana	5.079	2.839	.095	1.789	.074
state code=North Carolina	90.497	24.173	1.693	3.744	.000
state code=North Dakota	110.688	23.666	2.071	4.677	.000
state code=Nebraska	107.001	24.005	2.002	4.458	.000
state code=New Hampshire	.573	2.218	.011	.258	.796
state code=New Jersey	-5.514	12.015	-.103	-.459	.647
state code=New Mexico	-4.382	4.090	-.082	-1.071	.285
state code=Nevada	84.132	22.503	1.574	3.739	.000
state code=New York	-8.517	5.355	-.159	-1.590	.112
state code=Ohio	-4.245	4.257	-.079	-.997	.319
state code=Oklahoma	24.112	7.775	.451	3.101	.002
state code=Oregon	2.836	2.341	.053	1.211	.226
state code=Pennsylvania	-7.199	3.970	-.135	-1.813	.070
state code=Rhode Island	-7.188	10.942	-.134	-.657	.512
state code=South Carolina	73.750	23.002	1.380	3.206	.001
state code=South Dakota	112.158	23.897	2.099	4.693	.000

	state code=Tennessee	91.650	23.793	1.715	3.852	.000
	state code=Texas	93.423	23.977	1.748	3.896	.000
	state code=Utah	96.115	20.807	1.798	4.619	.000
	state code=Virginia	94.207	24.155	1.763	3.900	.000
	state code=Washington	1.017	2.633	.019	.386	.700
	state code=Wisconsin	11.935	3.021	.223	3.951	.000
	state code=West Virginia	-5.344	2.908	-.100	-1.837	.067
	state code=Wyoming	82.104	18.594	1.536	4.416	.000

a. Dependent Variable: Voter Turnout %

From Table 3, Model 6

Full Results for *Linear Regressions of Determinants of % Voter Turnout 1972-2012*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-27.260	19.950		-1.366	.172
	Union Density %	.349	.089	.369	3.920	.000
	Interaction of RTW	-.127	.099	-.368	-1.284	.200
	Interaction RTW Squared	.002	.001	.320	1.777	.076
	number of years since RTW enacted	-1.483	.286	-6.955	-5.190	.000
	election year	6.803	1.285	2.818	5.294	.000
	Population Density Per Square Mile	-.006	.012	-.177	-.454	.650
	% population Black	.450	.303	.555	1.483	.139
	% population other race	-.251	.113	-.364	-2.213	.027
	% population highest degree: college	.028	.061	.020	.458	.647
	% population 16+ public sector	-.074	.043	-.049	-1.720	.086
	% population civilian labor force: unemployed	1.560	.674	.149	2.315	.021
	% Employed Persons 16 Years and Over: Construction	-.129	.490	-.019	-.263	.793

% Employed Persons 16 Years and Over: Manufacturing	-.135	.118	-.141	-1.147	.252
% Employed Persons 16 Years and Over: Transportation	-.999	.693	-.127	-1.441	.150
% Employed Persons 16 Years and Over: Wholesale trade	-.098	.817	-.009	-.120	.904
state code=Alaska	-1.115	5.323	-.021	-.209	.834
state code=Alabama	78.749	21.903	1.473	3.595	.000
state code=Arkansas	93.246	22.808	1.745	4.088	.000
state code=Arizona	100.280	22.699	1.876	4.418	.000
state code=California	-6.070	3.803	-.114	-1.596	.111
state code=Colorado	.627	2.722	.012	.230	.818
state code=Connecticut	-.603	7.361	-.011	-.082	.935
state code=Florida	102.354	23.418	1.915	4.371	.000
state code=Georgia	84.862	24.097	1.588	3.522	.000
state code=Hawaii	-1.618	7.938	-.030	-.204	.839
state code=Iowa	111.463	22.036	2.086	5.058	.000
state code=Idaho	53.095	10.645	.993	4.988	.000
state code=Illinois	-8.664	5.138	-.162	-1.686	.092
state code=Kansas	89.767	19.086	1.680	4.703	.000
state code=Kentucky	-12.919	3.130	-.242	-4.127	.000
state code=Louisiana	47.169	16.738	.883	2.818	.005
state code=Massachusetts	.817	8.434	.015	.097	.923
state code=Maine	3.729	1.947	.070	1.915	.056
state code=Michigan	-1.485	5.174	-.028	-.287	.774
state code=Maryland	-16.072	7.524	-.301	-2.136	.033
state code=Minnesota	5.946	2.616	.111	2.273	.023
state code=Mississippi	74.456	23.250	1.393	3.202	.001
state code=Missouri	-6.640	4.077	-.124	-1.629	.104
state code=Montana	1.839	2.902	.034	.634	.527
state code=North Carolina	92.268	23.023	1.726	4.008	.000
state code=North Dakota	113.521	22.504	2.124	5.044	.000
state code=Nebraska	109.075	22.816	2.041	4.781	.000
state code=New Hampshire	1.096	2.185	.020	.501	.616
state code=New Jersey	-3.915	11.830	-.073	-.331	.741

	state code=New Mexico	-3.756	4.028	-.070	-.932	.352
	state code=Nevada	83.326	21.389	1.559	3.896	.000
	state code=New York	-15.192	5.522	-.284	-2.751	.006
	state code=Ohio	-8.706	4.336	-.163	-2.008	.045
	state code=Oklahoma	23.540	7.387	.440	3.187	.002
	state code=Oregon	-1.198	2.516	-.022	-.476	.634
	state code=Pennsylvania	-11.478	4.050	-.215	-2.834	.005
	state code=Rhode Island	-2.599	10.819	-.049	-.240	.810
	state code=South Carolina	73.257	21.901	1.371	3.345	.001
	state code=South Dakota	115.886	22.757	2.168	5.092	.000
	state code=Tennessee	92.026	22.614	1.722	4.069	.000
	state code=Texas	95.442	22.827	1.786	4.181	.000
	state code=Utah	98.721	19.773	1.847	4.993	.000
	state code=Virginia	95.929	22.989	1.795	4.173	.000
	state code=Washington	-4.350	2.922	-.081	-1.489	.137
	state code=Wisconsin	7.723	3.118	.145	2.477	.014
	state code=West Virginia	-8.782	2.962	-.164	-2.965	.003
	state code=Wyoming	84.583	17.633	1.583	4.797	.000

a. Dependent Variable: Voter Turnout %

From Table 4, Model 3

Full Results for *Linear Regressions of Determinant of % Union Density 1972-2012*

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	39.324	10.484		3.751	.000
	state is RTW or Not RTW	2.109	1.114	.129	1.894	.059
	Interaction of RTW	-.058	.057	-.159	-1.014	.311
	Interaction RTW Squared	.001	.001	.210	2.082	.038
	number of years since RTW enacted	.332	.152	1.469	2.192	.029
	election year	-3.131	.670	-1.224	-4.672	.000
	Population Density Per Square Mile	.026	.006	.771	4.099	.000
	% population Black	-.684	.155	-.795	-4.425	.000

	% population other race	.052	.059	.072	.892	.373
	% population highest degree: college	.105	.031	.071	3.367	.001
	% population 16+ public sector	.020	.022	.013	.911	.363
	% population civilian labor force: unemployed	.419	.350	.038	1.195	.233
	% Employed Persons 16 Years and Over: Construction	.360	.255	.051	1.411	.159
	% Employed Persons 16 Years and Over: Manufacturing	.076	.061	.075	1.241	.215
	% Employed Persons 16 Years and Over: Transportation	.344	.360	.041	.956	.340
	% Employed Persons 16 Years and Over: Wholesale trade	-1.795	.416	-.156	-4.312	.000
	state code=Alaska	12.585	2.704	.222	4.655	.000
	state code=Alabama	-5.056	11.784	-.089	-.429	.668
	state code=Arkansas	-18.649	12.266	-.329	-1.520	.129
	state code=Arizona	-28.176	12.161	-.497	-2.317	.021
	state code=California	8.826	1.933	.156	4.566	.000
	state code=Colorado	2.009	1.413	.035	1.422	.156
	state code=Connecticut	-3.421	3.822	-.060	-.895	.371
	state code=Florida	-25.673	12.578	-.453	-2.041	.042
	state code=Georgia	-12.174	12.951	-.215	-.940	.348
	state code=Hawaii	10.398	4.097	.184	2.538	.011
	state code=Iowa	-19.147	11.866	-.338	-1.614	.107
	state code=Idaho	-11.017	5.778	-.195	-1.907	.057
	state code=Illinois	16.596	2.558	.293	6.489	.000
	state code=Kansas	-16.152	10.302	-.285	-1.568	.118
	state code=Kentucky	6.983	1.595	.123	4.379	.000
	state code=Louisiana	2.793	9.030	.049	.309	.757
	state code=Massachusetts	-8.925	4.364	-.158	-2.045	.041
	state code=Maine	4.870	.986	.086	4.938	.000
	state code=Michigan	18.560	2.559	.328	7.254	.000

	state code=Maryland	9.290	3.887	.164	2.390	.017
	state code=Minnesota	13.024	1.218	.230	10.690	.000
	state code=Mississippi	-2.781	12.477	-.049	-.223	.824
	state code=Missouri	12.809	2.036	.226	6.292	.000
	state code=Montana	8.842	1.452	.156	6.090	.000
	state code=North Carolina	-20.953	12.362	-.370	-1.695	.091
	state code=North Dakota	-24.196	12.103	-.427	-1.999	.046
	state code=Nebraska	-22.220	12.276	-.392	-1.810	.071
	state code=New Hampshire	-1.304	1.134	-.023	-1.150	.251
	state code=New Jersey	-4.158	6.145	-.073	-.677	.499
	state code=New Mexico	-1.946	2.092	-.034	-.930	.353
	state code=Nevada	-12.631	11.508	-.223	-1.098	.273
	state code=New York	18.505	2.738	.327	6.758	.000
	state code=Ohio	12.496	2.177	.221	5.740	.000
	state code=Oklahoma	-3.531	3.976	-.062	-.888	.375
	state code=Oregon	11.339	1.197	.200	9.471	.000
	state code=Pennsylvania	11.963	2.030	.211	5.893	.000
	state code=Rhode Island	-12.164	5.596	-.215	-2.174	.030
	state code=South Carolina	-13.504	11.763	-.238	-1.148	.252
	state code=South Dakota	-26.761	12.221	-.473	-2.190	.029
	state code=Tennessee	-16.989	12.168	-.300	-1.396	.163
	state code=Texas	-21.673	12.262	-.383	-1.767	.078
	state code=Utah	-21.749	10.641	-.384	-2.044	.042
	state code=Virginia	-20.961	12.353	-.370	-1.697	.090
	state code=Washington	15.148	1.346	.267	11.251	.000
	state code=Wisconsin	11.075	1.545	.196	7.170	.000
	state code=West Virginia	9.009	1.487	.159	6.057	.000
	state code=Wyoming	-20.245	9.509	-.357	-2.129	.034

a. Dependent Variable: Union Density %

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