

A COMPREHENSIVE ANALYSIS OF THE ECONOMIC BENEFITS FROM ENACTING A RIGHT-TO-WORK LAW

RIGHT TO WORK IS RIGHT FOR OREGON



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FEBRUARY 2012



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PREFACE

“States that have right-to-work laws grow faster than states with forced unionism.” That is one conclusion economists Arthur Laffer and Stephen Moore stated in a *Wall Street Journal* column last May in which they explained how they rank states on economic competitiveness using 15 fiscal, tax, and regulatory variables. These rankings, published in the American Legislative Exchange Council book *Rich States, Poor States* authored by Laffer, Moore, and Jonathan Williams, determine which states have policies that are most conducive to prosperity. They conclude that two of these policies consistently stand out as the most important in predicting where jobs will be created and incomes will rise: no income tax and right-to-work laws. Oregon has seen its *Rich States, Poor States Economic Outlook Rank* slip from 35 in 2008 down to 43 in 2011, in large part because our state suffers under one of the highest personal income tax rates in the nation and is not a right-to-work state.

In 2009, Cascade asked local economists Randall Pozdena and Eric Fruits to identify what the economic impacts might be if Oregonians voted (as they did) to increase personal and corporate income tax rates through Measures 66 and 67 in January 2010. **Their research** predicted up to 70,000 fewer jobs and 80,000 fewer high-income tax filers in Oregon over the following ten years. So far, their forecast has been quite accurate. Now, we have asked the same two economists to evaluate the economic impacts if Oregon becomes a Right-to-Work state.

Twenty-two states have right-to-work laws which prohibit agreements between labor unions and employers that make membership or payment of union dues a condition of employment. The other twenty-eight states, including Oregon, do not. On its face, we would expect that a right-to-work policy leads to greater economic and employment growth. This research was designed to test this assumption and, if true, to quantify the relationship.

We believe that this research has broken new ground. It covers a very long time period, every state, and appears to rely on the largest datasets ever employed to study the impacts of right-to-work laws. The results demonstrate more than just a correlation between right-to-work policy and economic growth, but point toward a causal link. In other words, this research demonstrates that the right to work actually contributes to more employment, higher incomes, more net in-migration of taxpaying households, and faster economic growth. It is, therefore, a policy we believe Oregon should adopt.

But, even if this research had reached less satisfactory economic conclusions, we would still support a right-to-work policy based on the non-economic benefits that the name itself implies. Individuals should have the right to work in a job if the employer hires them and they accept the position. No third party should be able to deny individuals the right to work simply because they decline to join a union. Right-to-work is, therefore, in our opinion, a moral as well as an economic imperative.

Steve Buckstein
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EXECUTIVE SUMMARY

This report measures the impacts of right-to-work laws on the economy, measured by employment growth, income growth, and migration. Looking backward, it examines what would have happened to state employment and income growth had Oregon enacted right-to-work legislation in 1985, the same year as neighboring Idaho. Looking forward, the report forecasts future employment and income growth if Oregon enacts right-to-work legislation going into effect in 2012.

Looking backward, the analysis finds if the state had enacted right-to-work legislation in 1985:

- Oregon's employment in 2010 would have been approximately 14 percent higher (233,000 more jobs).
- Oregon's 2010 personal income would have been 10 percent higher (\$14.6 billion).
- Oregon's wage and salary income would have been 13 percent higher (\$9.7 billion).

Looking forward, if Oregon enacts right-to-work legislation in 2012, the empirical results indicate that the state would see a permanent boost in employment and income growth.

- After five years, in 2016, Oregon would have 50,000 more people working as a right-to-work state. By 2021, 110,000 more people would be working in Oregon.
- By 2016, the state's personal income would be \$4.1 billion higher and wage and salary income would be \$2.7 billion higher.
- By 2021, the state's personal income would be \$10.8 billion higher and wage and salary income would be \$7.0 billion higher.

A right-to-work law can be viewed as part of a pro-business package that encourages firms to locate and expand in the state. In turn, the improved opportunities have the effect of increasing migration into the state

and slowing migration out of the state. This study's statistical analysis of Internal Revenue Service data on taxpayer mobility finds that:

- Having a right-to-work policy in Oregon would increase household net in-migration of tax filers from non-right-to-work states by 14.0 percent from what it otherwise would be, everything else being equal.¹
- Having a right-to-work policy in Oregon would increase net in-migration of household incomes from non-right-to-work states by 17.9 percent from what it otherwise would be, everything else being equal.

Oregon, along with much of the country, still struggles to recover from a recession that began more than four years ago. As states like Oregon have struggled to cope with the employment and public revenue consequences of the recession, policy makers have tended to focus on fiscal policy—spending, subsidies, and taxes—rather than market structural solutions. In Oregon's case, we believe this focus has been counterproductive. For example, Oregon sharply increased both personal and corporate marginal tax rates in 2009 through the adoption of Measures 66 and 67. When the measures went into effect, Oregon gained the distinction of having the highest marginal personal income tax rates in the nation. As Fruits and Pozdena (2009) predicted, the tax increases have slowed Oregon's economic recovery.

In addition to focusing on spending, subsidies, and taxes, states also should embark on structural reforms that remove barriers to private sector initiative and job creation. Chief among the many structural barriers employers encounter in Oregon is the lack of so-called “right-to-work” legislation. In this study, we examine the effects of the failure of Oregon to adopt right-to-work legislation. We also estimate the benefits going forward of enacting such legislation this year.

Right-to-work laws prohibit agreements between labor unions and employers that make union membership, payment of union dues, or union fees a condition of employment, either before or after hiring. Right-to-work laws also prohibit “closed shop” agreements in which an employer agrees to hire union members only, and

¹This does not mean that right-to-work states necessarily have net in-migration and non-right-to-work states have net out-migration. Other factors may be working in offsetting directions. However, it does mean that a non-right-to-work state has greater out-migration or smaller in-migration of taxpaying filers, or both, than otherwise would be the case relative to a right-to-work state.

employees must remain members of the union at all times in order to remain employed. Provisions of the Taft-Hartley Act, enacted in 1947, affirm the right of states to enact right-to-work laws and were viewed as a counterbalance to the limitations imposed on private sector employers by the National Labor Relations Act.

The body of this report presents additional background on right-to-work policy and a comprehensive literature review of previous research on the impacts of right-to-work policies. The report then presents the methods, data, and results supporting the macroeconomic and migration impact studies performed by the authors.

Twenty-two states have taken advantage of the right-to-work provisions of the Taft-Hartley Act. As a group, they have enjoyed more rapid employment growth, better job preservation, and faster recoveries from recession.

This study employs comprehensive macroeconomic and migration databases to measure the impact of right-to-work statutes. It also estimates the effect on Oregon's economy that would likely follow if the state adopted a right-to-work policy this year. The findings indicate unambiguously that Oregon would enjoy an employment, income, and in-migration windfall if it were to distinguish itself from its neighboring Pacific Coast states which also have failed to adopt right-to-work policies.

The table below summarizes the projected benefits to Oregon of enacting right-to-work legislation:

Projected Employment and Income Impacts of Enacting Right-to-Work Legislation in Oregon in 2012				
Year	Employment	Employment Manufacturing	Personal Income (\$ mil.)	Wage & Salary Income (\$ mil.)
2012	9,000	1,000	\$800	\$500
2013	19,000	2,000	1,500	900
2014	28,000	4,000	2,300	1,400
2015	39,000	5,000	3,200	2,000
2016	50,000	6,000	4,100	2,700
2017	61,000	8,000	5,200	3,400
2018	73,000	9,000	6,500	4,200
2019	85,000	11,000	7,800	5,000
2020	97,000	12,000	9,200	6,000
2021	110,000	14,000	10,800	7,000

1. INTRODUCTION

As states like Oregon have struggled to cope with the employment and public revenue consequences of the most recent recession, policy makers have tended to focus on fiscal policy, rather than market structural solutions. Oregon, for example, sharply increased both personal and corporate marginal tax rates in 2009 through the adoption of Measures 66 and 67, respectively. Some economists in the state (including these authors) warned that the elevation of the rate of taxation of income would not only fail to produce all of the anticipated revenue, but might also leave the state at a competitive disadvantage in a structural sense. When the measures went into effect, Oregon gained the distinction of having the highest marginal personal income tax rates in the nation.

State income tax revenues subsequent to the passage of the 2009 tax rate increases have, in fact, fallen far short of state projections. The Oregon Prosperity Project reports that in 2009, the personal income tax measure produced only \$131 million of the \$180 million that was predicted (73 percent); in 2010, actual collections were only 67 percent of projections; and collections for 2011 are at less than 60 percent of original projections. Only time will tell if these tax policies leave Oregon at a permanent, structural disadvantage in attracting employers and employment to the state. As the recovery debate continues, however, it is worth reviewing another feature of Oregon public policy that many economists believe influences the competitive prospects for states like Oregon over the long term. That feature is the state's labor market policy and particularly its opposition to so-called "right-to-work" legislation.

In this study, we examine the likely effects on the Oregon economy of the state's failure to adopt right-to-work policies. We define and examine the impacts of right-to-work policies using evidence from the 50 states and the District of Columbia over long periods of time. We find that it is likely that Oregon's stance regarding right-to-work policies has adverse effects on patterns of employment and income growth, and patterns of migration of taxpaying households.

2. BACKGROUND OF RIGHT-TO-WORK POLICIES

Right-to-work policies liberalize labor market conditions by loosening some of the most restrictive features of labor union legislation enacted during the Great Depression. Specifically, in 1935, at the depths of the Great Depression job losses, Congress passed the National Labor Relations Act (also known as the Wagner Act). This act permitted closed union shops. It also sharply circumscribed the powers of employers in the private sector to influence workers regarding their formation of labor unions, engagement in collective bargaining, and taking part in strikes and other forms of coordinated activity to achieve labor's demands.

The widespread impact of coal miner strikes up to the post-World War II period led some to conclude that the Wagner Act had conferred too much power on organized labor. The Taft-Hartley Act, enacted in 1947 over President Harry Truman's veto, modified the impact of the Wagner Act by affirming the right of states to prohibit certain union shop restrictions enabled by the Wagner Act. Specifically, states (but not counties or localities) can pass laws that prohibit collective bargaining and agreements between labor unions and employers that make membership, payment of union dues, or fees a condition of employment, either before or after hiring. These statutes are referred to as "right-to-work" laws.

Proponents of right-to-work legislation argue that individuals should have the choice of whether or not to join a union and that the choice of whether to join a union should not be a condition of employment. Opponents of right-to-work legislation argue that union collective bargaining benefits all employees; without compulsory union membership, employees have incentives to "free ride" on the benefits of collective bargaining without contributing to the costs associated with such bargaining. This free rider argument is fallacious in that Federal law does not obligate unions to represent non-members. The National Labor Relations Act allows unions to sign "members' only" contracts that apply only to dues-paying members, and the Supreme Court upheld the ability of unions to negotiate only on behalf of members.²

²Consolidated Edison Co. v. National Labor Relations Bd., 305 U.S. 197 (1938).

The adoption of right-to-work statutes has been far from universal, as Table 1 indicates. Adoption of right-to-work legislation is primarily a characteristic of the states in the southeast, the Great Plains, and the Intermountain West. None of the west coast states (California, Oregon, and Washington) are right-to-work states.

Table 1: State Right-to-Work Status, With Year Right-to-Work Legislation Was Enacted

Right-to-Work	Non-Right-to-Work
Alabama (1953)	Alaska
Arizona (1946)	California
Arkansas (1944)	Colorado
Florida (1954)	Connecticut
Georgia (1947)	Delaware
Idaho (1985)	District of Columbia
Iowa (1947)	Hawaii
Kansas (1958)	Illinois
Louisiana (1976)	Indiana
Mississippi (1954)	Kentucky
Nebraska (1946)	Maine
Nevada (1951)	Maryland
North Carolina (1947)	Massachusetts
North Dakota (1947)	Michigan
Oklahoma (2001)	Minnesota
South Carolina (1954)	Missouri
South Dakota (1946)	Montana
Tennessee (1947)	New Hampshire
Texas (1947)	New Jersey
Utah (1955)	New Mexico
Virginia (1947)	New York
Wyoming (1963)	Ohio
	Oregon
	Pennsylvania
	Rhode Island
	Vermont
	Washington
	West Virginia
	Wisconsin

Although much of the debate over right-to-work legislation focuses on the rights of the individual versus the rights of a union, another debate involves whether right-to-work laws help stimulate economic growth, slow economic growth, or have no impact. Much of the literature demonstrates that right-to-work laws are associated with greater employment growth. An association between right-to-work status and employment growth is obvious from even casual analysis (Figure 1 and Figure 2). At the same time, the literature provides mixed results regarding the relationship between right-to-work laws and income growth. The literature has been largely silent on the effect of right-to-work laws on household migration. As a result, some assert that the relationship between right-to-work laws and employment growth are largely coincidences of migration for other reasons, or the conversion of former agricultural employment to industrial employment.

Figure 1

Employment Growth

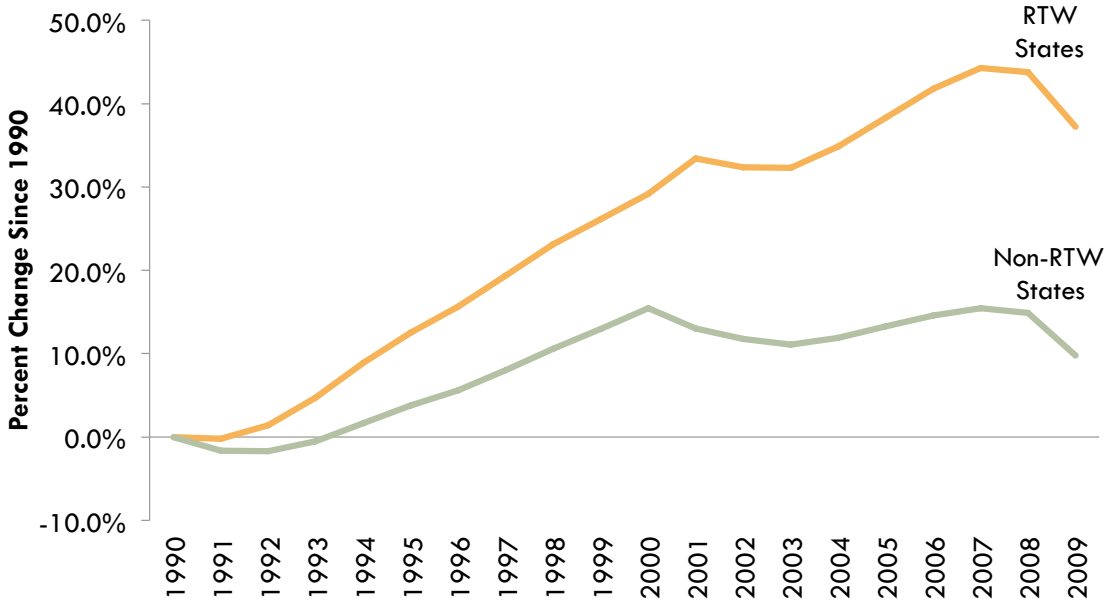
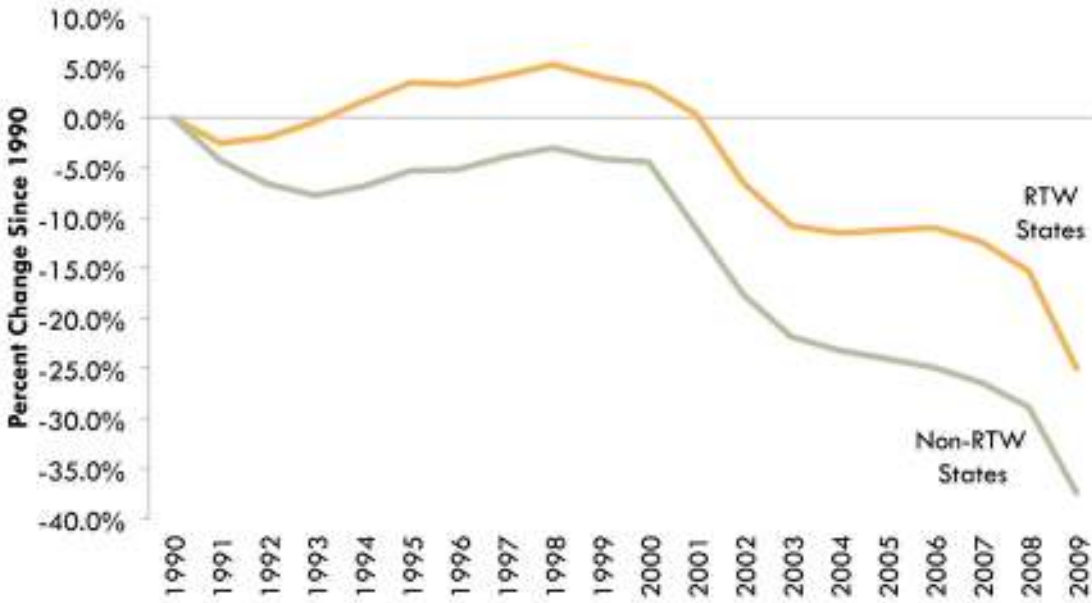


Figure 2

Manufacturing Employment Growth



3. THE ECONOMIC EFFECTS OF RIGHT-TO-WORK LAWS: A REVIEW OF THE RESEARCH

Moore and Newman (1985) review numerous studies that have evaluated the impact of right-to-work laws on union membership, wages, and industry location. Because their article comprehensively reviews the older literature, our literature review will focus on more recent research.

3.1) Literature on Macroeconomic Impacts

Tannenwald (1997) notes that the impact of right-to-work laws has been more widely studied than any other labor market law or regulation. He suggests this is because the existence of right-to-work laws is a simple “either/or” variable: Either a state has or does not have such a law. He identifies eleven studies that estimate the impact of right-to-work laws on either plant location, the rate of business formation, employment, or some other manifestation of economic development.³ Eight of the eleven studies find that right-to-work laws are associated with a positive, statistically significant impact on economic activity.

Research by Holmes (1998, 2000) has been held up as some of the most important empirical examination of the impact of right-to-work legislation on economic performance. For example, Holmes (1998) has more than 90 citations by other peer-reviewed articles. He argues that if state policies are an important determinant of the location of manufacturing, one should find an abrupt change in manufacturing activity when one crosses a border at which policy changes from right-to-work to non-right-to-work because state characteristics unrelated to policy are the same on both sides of the border. Holmes (1998) uses data on manufacturing employment levels for counties occupying the borders of right-to-work states and non-right-to-work states. His regression results find that manufacturing employment in a county as a percentage of total employment in the county increases, on average, by approximately one-third when one crosses the border from a non-right-to-work state to a right-

to-work state. Holmes (2000) cautions that the impact may not be entirely due to right-to-work legislation: “Thus, my results do not say that it is right-to-work laws that matter, but rather that the ‘pro-business package’ offered by right-to-work states seems to matter.”

Abraham and Voos (2000) examine the impact of enacting right-to-work legislation on the stock market returns of firms whose primary operating location was in a state that recently enacted right-to-work legislation. Their regression results indicate a 2 percent to 4 percent increase in shareholder wealth associated with enacting right-to-work legislation.

At the time Idaho enacted its right-to-work legislation, it was surrounded by three right-to-work states and three non-right-to-work states. Dinlersoz and Hernández-Murillo (2002) and Wilbanks and Reed (2001) investigate the manufacturing sector’s performance before and after the right-to-work legislation went into effect. They find that after Idaho became a right-to-work state, the state experienced a significant and persistent annual growth in manufacturing employment and in the number of establishments. In contrast, the state saw almost no growth in each of these variables in the years leading up to the adoption of right-to-work legislation. In addition, the difference between “before right-to-work” and “after right-to-work” growth rates in Idaho was significantly larger compared with other states in the region. Moreover, they find that the fraction of total manufacturing employment in large manufacturing establishments increased significantly in Idaho after the law was passed. Dinlersoz and Hernández-Murillo (2002) conclude that Idaho became more attractive for large plants after the passage of right-to-work legislation.

Regressions performed by Reed (2003) find that after accounting for the influence of economic conditions that were present when states adopted right-to-work legislation, those states have significantly higher wages than otherwise would be expected.

Kalenkoski and Lacombe (2006) find that right-to-

³Carlton (1979); Coughlin, et al. (1991); Friedman, et al. (1992); Garofalo and Malhotra (1992); Newman (1983, 1984); Plaut and Pluta (1983); Schmenner, et al. (1987); Soffer and Korenich (1961); Wheat (1986); and a working paper that was published as Holmes (1998).

work legislation may positively affect manufacturing employment. However, Lafer and Allegretto (2011) find that Kalenkoski and Lacombe's (2006) study produce "some curious and unexplained findings," indicating that Kalenkoski and Lacombe's (2006) approach or data may be unreliable. In particular, Kalenkoski and Lacombe (2006) find that right-to-work laws have a negative impact on the employment shares of the agriculture, forestry, mining, fishing and hunting industries, and some service industries. Lafer and Allegretto (2011) point out that agricultural employees and most professional and managerial employees have no right to organize under federal labor law, thus they argue that there is no clear reason why right-to-work statutes would directly impact employment shares in these sectors. This criticism, however, seems to belie a misunderstanding of basic arithmetic—as the employment in one sector of the economy increases relative to other sectors, by definition, the shares of other sectors must decrease.

Regressions performed by Krol and Svorny (2007) indicate that employment in right-to-work states recovers faster from recession than employment in non-right-to-work states.

Stevans (2009) argues that several factors that explain economic performance may also affect a state's decision to adopt right-to-work legislation. These factors include (1) the size of agricultural employment relative to non-agricultural employment, (2) the size of service sector employment relative to manufacturing sector employment, (3) population growth, especially in "Sun Belt" states, and (4) educational attainment. Where other studies treat right-to-work as an exogenous variable (meaning a state's right-to-work status is taken as given), Stevans (2009) argues it is an endogenous choice (meaning a state's right-to-work status is a choice that is determined by the same factors that affect employment and population growth).⁴ In contrast, Krol and Svorny (2007) note that right-to-work laws can be considered exogenous with respect to current economic conditions because in most cases the laws have been in place since the 1950s. Regressions in which Stevans

(2009) treats right-to-work legislation as exogenous find that right-to-work states are associated with higher rates of employment and proprietors' income.⁵ When treated endogenously, Stevans (2009) finds that the employment impacts become statistically insignificant.

Regression results provided by Belman et al. (2009) indicate that right-to-work states have a higher share of their populations employed. Their regressions show that the employment-to-population ratio of states with right-to-work legislation is 2.8 percentage points higher than non-right-to-work states.

Besley et al. (2010) assume that right-to-work legislation is one of many "pro-business and growth promoting" policies that a state can adopt. They find that states with greater political competition—meaning states in which neither major political party has significant electoral advantage—are more likely to adopt right-to-work legislation as well as other growth promoting policies such as lower taxes.

Vedder et al. (2011) extends earlier work (Vedder, 2010) to examine the potential impacts of right-to-work legislation on Indiana's potential income growth. Their regression results suggest that, had Indiana adopted right-to-work legislation in 1977, annual per capita income growth would have been 0.3 percentage points higher than actual income growth.

In a briefing paper published by the Economic Policy Institute, Lafer and Allegretto (2011) argue that although much of the previous research finds a relationship between right-to-work legislation and economic development, the research may not establish a cause-and-effect relationship between right-to-work legislation and economic development. In addition, they criticize Holmes' (2000) focus on manufacturing employment as a share of total employment. They point out that, for example, in states where service employment is growing, all other things being held equal, the manufacturing share of overall employment will decrease without reflecting any failing in the local economy or government.

⁴See also Jacobs and Dixon (2006), who use economic, demographic, and political variables to evaluate the probability that a state adopts right-to-work legislation.
⁵Proprietors' income is the payments to those who own non-corporate businesses, including sole proprietors and partners.

Idaho and Oklahoma are the two most recent states to enact right-to-work legislation. Idaho's legislation was enacted in 1985 and Oklahoma's in 2001. Eren and Ozbeklik (2011) use a recently developed econometric technique to examine the effectiveness of right-to-work laws on different measures of state-level economic development. Their results indicate that the passage of right-to-work legislation in Oklahoma is associated with a 24 percent increase in foreign direct investment and no significant impact on manufacturing employment. Even so, passage of right-to-work legislation in Idaho is associated with a 14 percent increase in manufacturing as a share of the labor force.

3.2) Literature on Migration Impacts

There have been relatively few empirical analyses of the effect of right-to-work laws and patterns of household migration. Soffer and Korenich (1961), Newman (1983), Moore and Newman (1985), Moore (1998), and Holmes (2000) discuss business migration effects of right-to-work laws, but not household migration. Kahley (1991), Eberts and Stone (1992), and Pantuosco (1991) associate density of unionization with patterns of household migration, but not right-to-work laws specifically. Similarly, Reed (2003) and Dinlersoz and Hernández-Murillo (2002) associate changes in right-to-work status with declining unionization and stronger economic growth, but do not measure the contribution of labor migration to that trend. The older strands of the literature thus support a logical chain of right-to-work policies associating declining unionization and increased business in-migration with growth, but the involvement of household movements in this process is less clear.

Only one author seems to have attempted to associate household migration with right-to-work policy directly, looking at migration between the years 2000 and 2008. In Vedder (2010) the author reports on the findings of regression analyses he performed, finding, "Without exception, in all the estimations, a statistically significant positive relationship (usually at the 1 percent level) was observed between the presence of right-to-work laws and net migration."

The literature just reviewed points the way to data and methods for measuring the effects of right-to-work laws. In this report, the economic impacts of adopting right-to-work legislation in Oregon are measured in two ways:

- Using a database spanning 70 years for all 50 states and the District of Columbia, the effects of right-to-work laws on employment and income growth are measured empirically using regression analysis.
- Using Internal Revenue Service (IRS) Statistics on Income (SOI) data, the pattern of migration of tax filers between Oregon and the other 49 states is examined statistically.

We now turn to the presentation of these research efforts.

4. EFFECTS ON EMPLOYMENT AND INCOME GROWTH

This section of the report measures the likely effects of right-to-work laws on state economic growth. It is a comprehensive study that covers all 50 states and the District of Columbia and spans a period of time from before any state enacted right-to-work legislation through the year 2009. It examines the effects of these policies on employment and income growth and the migration of taxpayers and their incomes.

The data and methodology employed for this study can be applied to any state considering a change in its right-to-work status. In this report, our focus is on the effect of right-to-work legislation on employment growth and income growth in Oregon. Specifically, it examines what would have happened to state employment and income growth had Oregon enacted right-to-work legislation in the same year as Idaho (1985). Looking forward, the report forecasts future employment and income growth if Oregon enacts right-to-work legislation in 2012.

4.1) Data Employed

The data used in this section of the study consists of employment, income, tax, and regional economic and demographic characteristics of the states. The sources of the data are as follows:

- Employment information is from the U.S. Bureau of Labor Statistics. Nonfarm employment information is available from 1939 to the present. Manufacturing employment information is available from 1990 to the present.

- Personal income, wage and salary income, and proprietors' income information is from the U.S. Bureau of Economic Analysis and is available from 1929 to the present.

- Population, education, state tax revenue, and land area information is from the U.S. Census Bureau. Annual population information is available from 1900 to the present. Education information (percent of population over age 25 with a high school diploma or higher and percent of population over age 25 with a bachelor's degree or higher) and is available every 10 years from 1940 to 2000 and annually from 2006 through 2009. State tax revenue information is available every other year from 1942 to 1952 and annually from 1952 through 2010.

- Tax rate information is from the National Bureau of Economic Research and the Tax Foundation and is available from 1976 through 2010.

- Corporate bond information is from the Board of Governors of the U.S. Federal Reserve System and is available from 1919 to the present.

4.2) Methodology: Modeling Employment and Growth

The study employs regression analysis, a widely used econometric technique. It measures the relationship between employment growth and income growth for a given state at a given point in time, and the explanatory variables—including right-to-work status—in each of the various states. The study examines the relationship between right-to-work laws on growth in employment, manufacturing employment, total personal income, wage and salary income, and proprietors' income.

The study uses a panel of the 50 states and the District of Columbia pooled for the years 1940 through 2009. Cornell and Trumbull (1994) and Levitt (2001) describe the benefits and other considerations related to panel

data. In particular, a panel allows for variation across states and for variation over time within each state. As a result, it is possible to measure coefficients that more accurately demonstrate causation.

Ordinary least squares (OLS) regressions are performed for five different specifications. The dependent variable is the year-over-year percent change in employment or income for each state. The first specification regresses the dependent variable against the right-to-work indicator (i.e., dummy variable), population, the sum of employment in other states, and the sum of personal income in other states.⁶ Corporate bond rates are included as a variable to control for variations in the national business environment that are unlikely to be associated with whether a state enacts right-to-work legislation. In addition, land area is included to control for variations in population density. While this specification omits several variables that research has suggested may be important factors, this specification has the advantage of covering a long time period (70 years) that includes the years in which right-to-work states enacted right-to-work legislation.

Each succeeding specification adds one or more independent variables such as state tax revenues, marginal tax rates, and educational attainment. Because of the limited availability of some independent variables, as each variable is added, the time period covered by the regressions shrinks. Thus, the specification with the most explanatory variables also has the fewest time series observations (7 years).

A number of researchers have suggested that a state's choice to enact right-to-work legislation may be an endogenous choice. That is, some of the factors that contribute to employment and income growth also may contribute to the states' choice to enact right-to-work legislation. If this is the case, then ordinary least squares estimates may not be statistically consistent.⁷ To account for this possibility, we employed five instrumental variable (IV) regressions using two-stage least squares (2SLS).

⁶Variables such as population, employment, and personal income are measured as year-over-year percent changes.

⁷In statistics, a consistent estimator is one that converges in probability to the true value of the parameter being estimated.

4.3) Results: The Impacts of Right-to-Work Policy on Economic Growth

The regressions provide the expected signs on the impacts of right-to-work laws on growth: right-to-work states experience higher employment and income growth. While various specifications provide different coefficient estimates, the regressions are robust across the various specifications. Table 2 summarizes the range of estimated statistically significant coefficients across the specifications used, and the dependent variable studied for an impact of right-to-work. The coefficients in Table 2 can be interpreted as the increment to the various dependent variables’ annual growth rates that is associated with adoption of right-to-work legislation. Across all types of impacts and model specifications, the increment associated with the presence of right-to-work statutes ranges from a low of slightly less than half a percent (0.0045) to more than seven percent (0.0751).

Table 2: Range of Significant Estimates of Right-to-Work Coefficient

DEPENDENT VARIABLE	OLS		IV	
	LOW	HIGH	LOW	HIGH
Employment Growth	+0.0045	+0.0068	+0.0118	+0.0257
Manufacturing Employment Growth	+0.0056	+0.0075	+0.0377	+0.0751
Personal Income Growth	+0.0051	+0.0060	+0.0079	+0.0149
Wage & Salary Income Growth	+0.0059	+0.0083	n/a	n/a
Proprietors’ Income Growth	n/a	n/a	n/a	n/a
Coefficients are significant at the 90 percent (or greater) level of confidence; n/a indicates no significant coefficients were estimated				

Across all ten specifications, right-to-work legislation has a positive impact on employment growth. The coefficients are statistically significant in all of the OLS regressions and in three of the five IV regressions. Right-to-work legislation has a positive impact on manufacturing employment growth in all 10 of the specifications used. The coefficients are statistically significant in three of the five OLS regressions and in three of the five IV regressions.

Right-to-work legislation has a positive impact on personal income growth in each of the OLS regressions, with statistically significantly positive coefficients in four of the five OLS regressions. Three of the five IV regressions report a statistically significant positive relationship between right-to-work laws and personal income growth. Two of the regressions report negative coefficients that are not statistically significant.

Across each of the OLS specifications, right-to-work legislation has a statistically significant positive impact on wage and salary income growth. Four of the five IV regressions also report a positive relationship between right-to-work laws and wage and salary income growth; however, none of the estimated coefficients in the IV regressions are statistically significant.

None of the ten specifications find any statistically significant relationship between right-to-work laws and proprietors’ income.⁸

The estimated coefficients are interpreted as additions to the growth rate associated with right-to-work laws. For example, the “high” OLS estimated coefficient is +0.0068, thus in this specification, right-to-work states experience, on average, an annual employment growth rate that is 0.68 percentage points higher than states that do not have right-to-work laws. While such a difference may seem small, Barro (1996) points out that “increases in growth rates by a few tenths of a percentage point matter a lot in the long run and are surely worth the trouble.”

This report examines what would have happened to state employment and income growth had Oregon

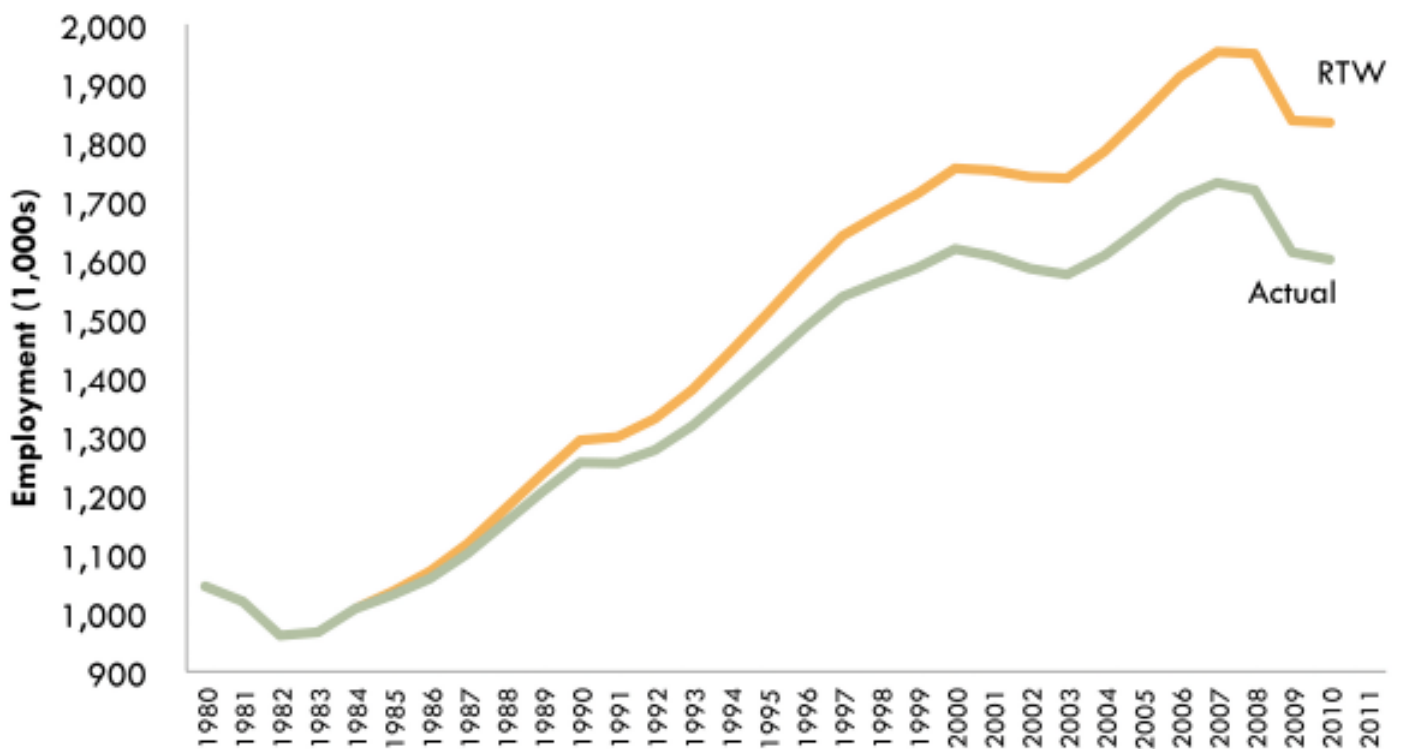
⁸This may be because there is no relationship or because of the well-known difficulties with accurately measuring proprietors’ income.

enacted right-to-work legislation in the same year as Idaho (1985). Looking forward, the report forecasts future employment and income growth if Oregon enacts right-to-work legislation in 2012. For the forecasts, we use the OLS estimators from the second OLS model. This model has the advantage of a large number of observations covering a relatively long time period (59 years, with the exception of manufacturing employment) and a favorable mean squared error relative to other specifications.

Barro's (1996) observation is illustrated in Figure 3, which contrasts Oregon's actual employment against the forecasted employment if Oregon had adopted right-to-work in the same year as Idaho (1985). The figure shows that Oregon's employment in 2010 would have been approximately 14 percent higher (233,000 more jobs) if the state had enacted right-to-work legislation in 1985. Similarly, Oregon's 2010 personal income would have been 10 percent higher (\$14.6 billion) and wage and salary income would have been 13 percent higher (\$9.7 billion) had Oregon enacted right-to-work legislation in 1985.

Figure 3

Oregon employment, actual vs. right-to-work



If Oregon enacts right-to-work legislation in 2012, the empirical results indicate that the state would see a permanent boost in employment and income growth. Table 3 shows that after five years, in 2016, Oregon would have 50,000 more people working as a right-to-work state. By 2021, the state would have 110,000 more people working. By 2016, the state's personal income

would be \$4.1 billion higher and wage and salary income would be \$2.7 billion higher. By 2021, the state's personal income would be \$10.8 billion higher, and wage and salary income would be \$7.0 billion higher. The increased employment and increased incomes would provide a much needed boost to the Oregon economy, reduce burdens on state and local "safety net" budgets, and enlarge state and local tax revenues.

Table 3: Projected Employment and Income Impacts of Enacting Right-to-Work Legislation in Oregon in 2012

Year	Employment	Employment Manufacturing	Personal Income (\$ mil.)	Wage & Salary Income (\$ mil.)
2012	9,000	1,000	\$800	\$500
2013	19,000	2,000	1,500	900
2014	28,000	4,000	2,300	1,400
2015	39,000	5,000	3,200	2,000
2016	50,000	6,000	4,100	2,700
2017	61,000	8,000	5,200	3,400
2018	73,000	9,000	6,500	4,200
2019	85,000	11,000	7,800	5,000
2020	97,000	12,000	9,200	6,000
2021	110,000	14,000	10,800	7,000

Enacting right-to-work legislation has an added, and unquantifiable, signaling benefit. Glaeser (2011) concludes: “Indeed, one can quite plausibly argue that the South had far worse institutions for economic growth before the Civil Rights Era, but that today, fewer regulations and lower taxes makes the Sunbelt more pro-growth.” Holmes (2000) points out that right-to-work laws can be viewed as part of a “pro-business package” that encourages firms to locate and expand in pro-business states. While the tax increases associated with Oregon Measures 66 and 67 sent a clear anti-business message to employers, the adoption of right-to-work legislation may be viewed as an attempt by Oregon to point itself in a more pro-growth direction.

5. EFFECTS ON THE MIGRATION OF TAXPAYERS AND THEIR ASSOCIATED INCOME

For right-to-work policy to have a differential effect on a state’s economic growth, the policy has to affect either indigenous growth rates in the state, or the spatial reallocation of activity among the various states. In this section, we focus on the effect of the differential presence of right-to-work policies on

interstate migration patterns. Since labor and capital are mobile, theory would suggest that policies that disadvantage income and employment growth in one state relative to one or more other states would be resolved at least partly by migration of labor and capital between states.

There will always be idiosyncratic factors that make migration from state A to state B attractive to some, and from state B to state A attractive for others. Migration occurs not only as the result of seeking more attractive labor market conditions, but also because of family relationship considerations, climate considerations, and/or the special attractiveness of some other labor or non-labor difference in the policy environments of the two states.

There are also factors that impede mobility, making most factors of production reluctant or slow to relocate. Family and school ties, the relative illiquidity of markets for housing and other capital, the distance between states and the cost and uncertainties associated with relocating makes spatial adjustment to policy differences slow.

The available data only permit observation of household movement, and not migration of physical or financial capital. However, the tendency of households to relocate in search of employment is the genesis of historical migrations big and small. Thus, migration is a natural indicator of the differential virtues of the origin and destination communities. Specifically, we expect the gross migration flows between the various state pairs to be greater the larger are the differences between the origin and destination states in dimensions we expect will influence migration behavior.

Although the flow of migrants between two states is generally small relative to the non-migrant population, there are features of migration data that offer advantages when studying a policy such as right-to-work. The nature of migration data is such that one enjoys the statistical advantages of relatively

large datasets. This is because interstate migration is a bidirectional phenomenon, measurable on a state-pair basis. Thus, there is a gross flow measure for both in- and out-migration for each state in a state pair. This generates a number of unique migration volume observations equal approximately to the square of the number of states for a single year.⁹

The sample size is further enlarged by a time series dimension. If one also obtains migration data over a period of time, the resulting pooled- and panel-datasets can be quite large. In our case, the authors built a database that uses bidirectional gross migration flows for all 50 states plus the District of Columbia over a period of 21 years. This results in approximately 26,000 observations to support regression analysis.¹⁰

Large databases offer many statistical advantages, especially in settings where, *ex ante*, one expects the behavior of interest to be confounded by many, idiosyncratic factors. Simply put, having a large number of observations allows better filtering of information from “noise” generated by random factors. Migration is just such a phenomenon, since there are so many personal and business factors that influence individual migration decisions.

Second, isolation of a causal relationship between right-to-work policy and economic performance is better achieved if one has a large, cross-sectional sample. With 51 state pairs, and data on flows both from state A to state B as well as from state B to state A, one is able to provide approximately 2,550 cross-sectional comparisons for each year of available data. One does not have to rely on a change in the policy variable of interest (i.e., right-to-work policy) to observe its influence. One can study the effect of persistent differences between two states’ policies on migration patterns among the many pairs of states in the sample. Having both cross-sectional and time series cases gives

one the opportunity to capture not only the effect of changes in policy, but also the dynamic effect of persistency differences in policies.

Finally, by having a panel of state-pair data over many years allows one to incorporate special procedures that allow individual state idiosyncrasies to be accommodated, better isolating the policy impact one is studying.¹¹

5.1) Data Employed

For state level tax, employment, income, and other explanatory variables, the sources used in the migration analysis are as described earlier in the employment activity analysis. Migration data is uniquely available from the Internal Revenue Service’s Statistics of Income analysis. Specifically, the IRS has published each year since 1989 the number of tax returns that have “migrated” between pairs of states between filing years. For most of those years, it also has published the adjusted gross income (AGI) and number of exemptions associated with those returns. The AGI data allows one to get a sense of the incomes associated with migration, and the exemptions calculations give a very rough proxy for family size.

5.2) Methodology: Modeling Migration

Migration models have a number of unique features. First, because they are trying to predict flows of activity between two regions (states) at a time, they have to employ variables that respect the fact that flows between two regions are likely to be larger, everything else being equal, the larger the involved regions are. In addition, the distance between two regions is likely a deterrent to migration, not only because relocation and travel are costly, but also because the familiarity with the other region is likely greater if the region is nearby than if it is farther away.

⁹Although data is available for both in- and out-migration for every state pair, gross in-migration to A from B is the same as gross out-migration from B to A. Thus, having both gross in-flow and out-flow data does not provide twice the observations. There are 2,601 unique data pairs for the 50 states plus the District of Columbia. In addition, the same-state data pairs (51 of them) are not usable because they do not measure interstate migration, by definition.

¹⁰There is some missing data in the IRS files. For example, AGI information was not collected early in the data program. In some cases, therefore, the full, national sample is not available to support the regression analysis.

¹¹These are called “fixed effect” regressions. In fact, regressions run on panel datasets allow one to assume “fixed” or “random” variations among individual state panels. In all of the results reported here, the simple fixed effect variation is employed. The results are not sensitive to this choice.

To address both of these basic concerns, economists have drawn on basic concepts of physics and employ a so-called “gravity” formulation of distance and regional scale factors. Specifically, the gravity model, in its simplest form from physics, indicates that the flow between two regions will be approximately proportional to the product of the two regions’ overall size, and inverse to the square of the distance. We adopt this basic formulation in our statistical models of gross migration flows, but do not impose the rigid functional form that follows from simple physics. We allow instead the coefficients on the origin and destination sizes and the distance between them to be solved econometrically. We use employment levels in the respective states as the measure of regional scale, and the distance in kilometers between the population centroids of each state as the separation indicator.

Second, we must respect the fact that the right-to-work policy status in each of a pair of states is unlikely to be the only policy factor motivating migration. Other key policy features include tax rates, such as the rates of income, sales, and estate taxes. In our analyses, we employ the highest marginal rate as the tax rate indicator, in keeping with the notion that market equilibria tend to be determined by marginal, rather than average rates. However, in the case of the estate tax, multi-state, multiyear data is available only on the dollar value of estate and gift taxes paid, not the marginal rates. In this one case, therefore, we construct an average rate as a ratio of taxes paid relative to total personal income in each of the states. The right-to-work policy is rendered as a (0,1) measure indicating the absence or presence of right-to-work policy.

Third, migration may be affected by other characteristics of the states and their populations and thus we included measures of educational attainment and manufacturing employment share in some specifications of the model. In general, inclusion of these measures does not appreciably

improve the models’ ability to fit or predict the observed gross migration flows.

Two other special features of the models are incorporated to respect the nature of the behavior being examined. Specifically, since we expect that it is differences between two states’ policies and characteristics that predispose migration between them, all of the policy and state characteristic variables are expressed as differences between the two states. (The gravity model specification, of course, is not treated this way.) All tax rate variables are treated as decimal percentages, and all level variables are represented in their natural logarithm form.

Since we know that in-migration gross flows and out-migration gross-flows are generally different between any two states, the model is implemented in such a way that the net in-migration impact is measured.¹² In addition, since our data can be structured as a panel dataset, either fixed or randomly varying effects can be accommodated. This is an important aspect of migration analysis, since there are likely numerous small factors that influence individual migration streams. The methods described above help offset the incompleteness of the model specification.

5.3) Results: The Impacts of Right-to-Work Policy on Migration

As with the employment activity analysis reported earlier, specifications of varying complexity were examined within the overall framework described above. In addition, because of the special importance this study has for the State of Oregon, which does not have a right-to-work law, separate models were run using only Oregon data. Specifically, only data for which Oregon was either the origin or destination of migration were employed. The findings regarding the right-to-work variable are presented in Table 4 for both the national and Oregon-focused datasets.

¹²Specifically, the dependent variable in the migration regressions is the natural logarithm of the ratio of in-migration (gross flow) to out-migration (gross flow). This specification allows the coefficients on the explanatory variables to have a natural interpretation as a percentage impact.

Table 4: Summary Migration Impacts Associated with Right-to-Work Laws

Data Used to Estimate Migration Effect	Increase in Migration Associated with Right-to-Work
Migration Measure: Tax Returns	
All state-pairs	11.1%
Oregon state-pairs only	14.0%
Migration Measure: Adjusted Gross Income	
All state-pairs	15.4%
Oregon state-pairs only	17.9%
Migration Measure: Exemptions	
All state-pairs	13.2%
Oregon state-pairs only	13.1%
<p>Between Oregon and right-to-work states. This can take the form of reduced out-migration from Oregon to these states or increased in-migration from these states. All measures are significant at the 99.9 percent level of confidence. Data are from 1989-2009.</p>	

All of the model specifications find that right-to-work policy is a positive and significant net attractor of migrating taxpayers who had previously lived in a state that did not recognize a person’s right to work. Conversely, having a policy that restricts right-to-work is a propellant of taxpayers from a state relative to right-to-work states.

Using the full sample of all states and all years, the coefficients on the right-to-work variables suggest that having a right-to-work policy increases household net in-migration from non-right-to-work states by 11.1 percent from what it otherwise would be, everything else being equal. Using the Oregon-focused data, the impact is larger at 14.0 percent. This does not mean that right-to-work states necessarily have net in-migration and non-right-to-work states have net out-migration. Other factors may be working in offsetting directions. However, it does mean that a non-right-to-work state has greater out-migration or smaller in-migration of taxpaying filers, or both, than otherwise would be the case relative to a right-to-work state.

When the models are used to examine net in-migration measured as AGI, rather than returns, the same general implications are observed. Using national data, net in-migration of AGI is 15.4 percent higher if a state is a right-to-work state and the other state is not. Using Oregon-only data the effect is, again, even larger at 17.9 percent. That is, out-migration of incomes to right-to-work states would be lower, or in-migration of incomes would be higher, or both, if a state adopted a right-to-work policy. Additionally, the states with no right-to-work policy are selectively losing more taxpayers with higher incomes than they are attracting.

When the focus is turned on the number of exemptions associated with the returns, the same pattern of influence of right-to-work policy emerges. States with right-to-work policies are attracting more exemptions (“individuals”) from states with restrictions on right-to-work than otherwise would be the case. The impact is 13.2 percent using national data and 13.1 percent using Oregon-only data. Since exemptions are not a perfect surrogate for family size or the number of individuals associated with a return, one has to be a bit cautious about adding interpretation to this basic finding. But it is possible that failure to enact right-to-work policy handicaps a state in a multigenerational fashion if dependents of return filers tend not to be attracted to, or return to, states with no right-to-work policy.

Although the Oregon model regressions employ approximately 50 times fewer observations than the national regressions, and because Oregon’s lack of right-to-work policy has not changed in the 21 years of data covered by the analysis, one might expect that the precision of the estimated impact is potentially lower. In fact, however, the coefficient that measures the right-to-work effect is significant at the 99.9 percent level in all regressions—whether using the national sample or the Oregon-focused sample.

Oregon generally has enjoyed positive net in-migration in recent years and even into the most

recent recession. This fact encourages some casual observers to assume that there is no negative impact of labor and income taxation policy. Factors such as the state's lack of a sales tax, its natural attractions, and relatively benign weather likely spare Oregon from the full effect of its tax policies. But it is clear that net migration patterns are determined by a portfolio of public policies and other factors. Oregon's neighbor to the north (the State of Washington) offers similar natural attractions, lacks a personal income tax, but has a sales tax and also has not embraced right-to-work legislation. On a simple, state-pair basis, the balance of these factors causes Oregon to suffer strong negative net out-migration with respect to Washington. Calculations from our migration findings suggest that this net out-migration effect would approximately double if Washington were to adopt a right-to-work law but Oregon did not.

6. SUMMARY

The new, comprehensive analysis presented here relies on what appear to be the largest datasets ever employed to study the impacts of right-to-work laws. The innovation in analysis of this policy is important because income and employment growth and household migration trends are influenced by many factors. Policy makers are often misled by staff and lobbyists who advance only anecdotal evidence or who hide behind the difficulty of extracting the effects of one policy from the panoply of other policies and factors.

Taken as a whole, the findings in this paper are a repudiation of the widely held notion that extending right-to-work protections to workers is immaterial, a confusion of cause and effect, or unproven because of the amount of noise and influence of other factors. The work here indicates that, to the contrary, the effect of restrictions on right-to-work policy have an effect that is significant in scale and statistical importance to employment, income, and the attraction and retention of higher income households.

Looking backward, the analysis finds if the state had enacted right-to-work legislation in 1985:

- Oregon's employment in 2010 would have been approximately 14 percent higher (233,000 more jobs).
- Oregon's 2010 personal income would have been 10 percent higher (\$14.6 billion).
- Oregon's wage and salary income would have been 13 percent higher (\$9.7 billion).

Looking forward, if Oregon enacts right-to-work legislation in 2012, the empirical results indicate that the state would see a permanent boost in employment and income growth.

- After five years, in 2016, Oregon would have 50,000 more people working as a right-to-work state. By 2021, 110,000 more people would be working in Oregon.
- By 2016, the state's personal income would be \$4.1 billion higher and wage and salary income would be \$2.7 billion higher.
- By 2021, the state's personal income would be \$10.8 billion higher and wage and salary income would be \$7.0 billion higher.

A right-to-work law can be viewed as part of a pro-business package that encourages firms to locate and expand in the state. In turn, the improved opportunities would have the effect of increasing migration into the state and slowing migration out of the state. This study's statistical analysis of IRS data on taxpayer mobility finds that:

- Having a right-to-work policy in Oregon would increase household net in-migration from non-right-to-work states by 14.0 percent from what it otherwise would be, everything else being equal.
- Having a right-to-work policy in Oregon would increase net in-migration of household incomes from non-right-to-work states by 17.9 percent from what it otherwise would be, everything else being equal.

There are undoubtedly segments of the labor force that benefit from imposing restrictions on the right to work

and have used the disproportionate political influence conferred by those restrictions to preserve the policy. Oregon (and other non-right-to-work states) should think hard about the policies it has toward labor and the workplace environment, especially as it struggles to restore its economy, employment opportunities, and public sector revenues.

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