An Economic Analysis of the Adoption of Right-to-Work On Missouri Families

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Executive Summary

The attempt to pass right-to-work legislation in the State of Missouri is based ostensibly upon the claim that such legislation will increase income, job formation, and business formation in the state. My report shows that the movement to a right-to-work state from a free-to-bargain state for Missouri would result in significant economic losses to Missouri families and taxing jurisdictions. My report further shows that the experience to date is that free-to-bargain states perform uniformly better than right-to-work states across a wide range of socio-economic variables.

- The movement to a right-to-work state from a free-to-bargain state in Missouri would result in a combined direct and induced economic loss to households in Missouri between ***$1,945 and $2,547*** annually per household.
- The movement from a free-to-bargain state to a right-to-work state would cost Missouri workers and their families between ***$4.58 billion and $6.0 billion annually*** in lost income as a result of lower wages.
- The movement from a free-to-bargain state to a right-to-work state would cost the state, counties, and local jurisdictions between ***$82.14 million and $107.56 million annually*** in lost sales tax collections as a result of lower wages.
- The movement from a free-to-bargain state to a right-to-work state would cost Missouri between ***$137.28 million and $179.89 million*** annually in lost state income taxes as a result of lower wages.
- The total economic loss due to movement from a free-to-bargain state to a right-to-work state would cost Missouri workers, families, and taxing authorities between ***$4.8 billion and $6.28 billion*** annually in lost wages, state, county, and local sales taxes, and income taxes as a result of lower wages.
- There is ***no correlation*** between right-to-work status and unemployment rates, or between right-to-work status and the growth rate in employment. Of the

six right-to-work states that are contiguous to Missouri, Tennessee, a right-to-work state, had the highest percentage of manufacturing jobs lost over the past decade, and Nebraska, another right-to-work state, had the lowest percentage of manufacturing jobs lost over the past decade.

- Right-to-work is ***not*** an important factor in firm location decisions.
- Free-to-bargain states had a ***higher*** percentage of workers with employer-sponsored health insurance than did right-to-work states in 2012; Missouri had a ***higher*** percentage of workers with employer-sponsored health insurance than the right-to-work states of Arkansas, Kansas, Oklahoma, and Tennessee in 2012.
- Free-to-bargain states had a ***higher*** per capita real gross domestic product than did right-to-work states in 2012; Missouri had a ***higher*** per capita gross domestic product than the right-to-work states of Arkansas and Oklahoma in 2012.
- Free-to-bargain states had a ***lower*** percentage of their population that is uninsured than did right-to-work states in 2012. Missouri had a ***lower*** percentage of its population that is uninsured than did the right-to-work states of Arkansas, Oklahoma, and Tennessee in 2012.
- Free-to-bargain states had a ***higher*** percentage of their population aged 25 and over that had graduated from high school than did right-to-work states in 2012. Missouri had a ***higher*** percentage of its population graduating from high school than did the right-to-work states of Arkansas, Tennessee, and Oklahoma in 2012.
- Free-to-bargain states had a ***higher*** median household income than did right-to-work states in 2012. Missouri had a ***higher*** median household income than the right-to-work states of Arkansas, Oklahoma, and Tennessee in 2012.
- Free-to-bargain states had a ***lower*** percentage of their population living at or below the poverty level than did right-to-work states in 2012. Missouri had a ***lower*** percentage of its population living at or below the poverty level than the right-to-work states of Arkansas, Oklahoma, and Tennessee in 2012.

- Free-to-bargain states had a ***lower*** percentage of their population at or below the minimum wage than did right-to-work states in 2012. Missouri had a ***lower*** percentage at or below the minimum wage than did the right-to-work states of Arkansas and Oklahoma in 2012
- Free-to-bargain states had ***higher*** average annual earnings per employee than did right-to-work states in 2012. Missouri had ***higher*** average annual earnings per employee than the right-to-work states of Arkansas, Iowa, Nebraska, and Oklahoma in 2012.

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I. Introduction

There are a number of lawmakers in various states who are being told they can resolve their respective states' economic woes by adopting right-to-work legislation. For those unfamiliar with the term, they may erroneously assume that right-to-work means that there is some guarantee of employment if one is willing to go to work. Nothing could be further from the truth. Right-to-work legislation prohibits the requirement that an employee become a union member or pay fees to a union as a condition of employment.

Right-to-work laws allow workers protected by a union contract to avoid paying for the expenses that the union incurs to administer the contract and secure benefits for all employees. Under Missouri's current law, with an employer's consent, all employees represented by a union (regardless of union membership) can be required to pay their fair share, and only their fair share, of the costs of representation. Right-to-work supporters claim that right-to-work protects workers who don't want to join a union or who disagree with a union's politics. But federal labor law ***already*** protects workers who don't want to join a union or make political contributions. Right-to-work legislation results in a race to the bottom – it serves as an enticement for firms whose primary incentive is a low-wage, unskilled labor force so they will relocate wherever the laws protecting workers rights are perceived to be weakest.

To fully understand the efforts of the advocates of right-to-work legislation, one must be cognizant of the historical context of this issue. The 1947 Taft-Hartley amendments to the National Labor Relations Act (1935) granted states the right to pass laws that outlaw the union shop by prohibiting unions and employers from requiring a worker to join a union or pay dues, even when the worker is covered by a union-negotiated collective bargaining agreement and when the union is required to represent the worker. Shortly after passage, a number of states passed these right-to-work laws. Most states which adopted right-to-work laws did so in the late 1940s and the 1950s, soon after passage of the Taft-Hartley amendments. Today, right-to-work laws are in effect in 24 states, most of them in the West and the South. The Northeast is the only region without a right-to-work law while the South has the greatest concentration. Prior to 2012, Oklahoma was the last to enact right-to-work legislation in 2001. In 2012, Michigan and Indiana enacted right-to-work legislation. Table 1 illustrates the geographic breakdown of right-to-work laws in the United States.

Much of the literature on the impact of right-to-work laws can be divided into two strands. One strand of the literature is simply anti-union and is not based in empirical observation. The other strand of the literature focuses primarily on the issue of economic development for states that pass right-to-work laws. This strand of the literature focuses on the impact of right-to-work laws on business location decisions.

There has been substantial early research on the effect of right-to-work laws on union density, organizing efforts, and industrial development. Recently, there has been a rigorous effort to investigate the economic impact of right-to-work laws and their effectiveness. These studies assess the impact of right-to-work laws on the level of wages, the social impacts of the resulting lower wage levels, and the lack of economic evidence that right-to-work laws encourage firms to locate to a specific region.

Table 1 Status of RTW Laws in the United States: 2013			
Northeast	**South**	**Midwest**	**West**
Connecticut	Alabama	***Illinois***	***Alaska***
Delaware	Arkansas	Indiana[3]	Arizona
Maine	Florida	Iowa	***California***
Maryland	Georgia	Kansas[4]	***Colorado***
Massachusetts	***Kentucky***	Michigan[5]	***Hawaii***
New Hampshire	Louisiana[1]	***Minnesota***	Idaho[6]
New Jersey	Mississippi	***Missouri***	***Montana***
New York	North Carolina	Nebraska	Nevada
Pennsylvania	Oklahoma[2]	North Dakota	***New Mexico***
Rhode Island	South Carolina	***Ohio***	***Oregon***
Vermont	Tennessee	South Dakota	Utah
	Texas	***Wisconsin***	***Washington***
	Virginia		Wyoming
	West Virginia		

NOTE: Those in bold type are free-to-bargain states.

[1]Louisiana enacted its RTW legislation in 1976

[2]Oklahoma enacted its RTW legislation in 2001.

[3]Indiana enacted its RTW legislation in 2012.

[4]Kansas enacted its RTW legislation in 1958

[5]Michigan enacted its RTW legislation in 2012

[6]Idaho enacted its RTW legislation in 1985

II. Literature Review

Early analysis of the impact of right-to-work legislation by its advocates focused on the rates of job growth and income growth in the states that are right-to-work states. These analyses claimed that states with right-to-work laws had experienced above-average economic growth while states without a right-to-work law had experienced below-average economic growth. This type of analysis is faulty in two respects.

First, these sweeping statements are made about averages, and implicit in their assertions is the assumption that the states' economic performances are close to the averages being reported when, in fact, there are wide divergences among the states from the averages being reported. For example, in an analysis done for the Indiana Chamber of Commerce in 2011, the authors claimed that, comparing the years 1977-2008, the growth in real per capita income was 62.3% for right-to-work states and only 52.8% for free-to-bargain states. (Vedder, Denhart, and Robe, 2011). In another section of their faulty report, they assert that right-to-work states had employment growth of 100%, while free-to-bargain states had only 56.5% growth in employment. In reading these sweeping assertions, one might assume that *all* right-to-work states had higher growth in per capita income and higher growth in employment than free-to-bargain states. Nothing could be further from the truth. For example, over the past 10 years, the right-to-work states of North Dakota and Wyoming have shown growth rates in employment of 16.8% and 17.6%, respectively; on the other hand, right-to-work states such as Mississippi, Tennessee, and Georgia have shown employment losses of 3.2%, 4.0% and 3.7%, respectively, over the past decade. There is simply no correlation between a state's right-to-work status and its growth rates. Simply comparing averages between the two groups is very misleading.

As Associate Professor Gordon Lafer of the University of Oregon points out, four of the five fastest-growth states in 1977-2008 were free-to-bargain states, whose incomes grew faster than all but one right-to-work state. (Lafer, 2011). The proponents of right-to-work legislation have conveniently forgotten the maxim that correlation does not imply causation. One is reminded of the stork population-versus-births fallacy. If one examined the records of the city of Copenhagen for the ten or twelve years following World War II, one would notice a strong correlation between (i) the annual number of storks nesting in the city and (ii) the annual number of babies born in the city. Yet no one would seriously argue that an increase in the number of storks nesting caused an increase in the number of babies born.

Secondly, much of the early research failed to disentangle the effects of right-to-work from other factors that may influence growth in employment and income. In those instances in which a right-to-work state has experienced faster-than-average growth in income and/or employment, the diligent researcher needs to isolate whether that difference is due to the fact that it is a right-to-work state or it is due to other factors that have nothing to do with being a right-to-work state, such as differences in educational attainment of the workforce, access to raw materials, access to quality infrastructure (roads, highways, airports, railroad systems, and sewage systems), or other factors.

Researchers have found much the same methodological problem with respect to the issues of the minimum wage and employment effects. Much of the early empirical literature on the minimum wage suggested there were statistically significant, (albeit small), adverse employment effects that resulted from increases in the minimum wage. Recent literature has suggested that this may not be the case. (Allegretto, Dube, and Reich, 2011). In their paper, the authors stated the previous studies had failed to account for spatial heterogeneity in employment trends that generated biases toward negative employment elasticities in national minimum wage studies. In their study, when they account for this spatial heterogeneity in employment trends, they find that the employment elasticities are indistinguishable from zero.

In 2011, the most comprehensive analysis to date was conducted in order to empirically measure the impact of right-to-work legislation on wages and benefits among the 50 states. (Gould and Shierholz, 2011). This analysis controlled for a large number of factors such as age, gender, race/ethnicity, educational attainment, worker characteristics and state-specific characteristics. The conclusions of the authors were:

(1) wages in right-to-work states are 3.2% lower than those in free-to-bargain states, after controlling for the full complement of individual demographic and socio-economic variables as well as state macroeconomic variables;

(2) the rate of employer-sponsored health insurance is 2.6% lower in right-to-work states than in free-to-bargain states, after controlling for individual, employment, and state-level characteristics.

(3) the rate of employer-sponsored pensions is 4.8% lower in right-to-work states than in free-to-bargain states, using the full complement of control variables.

In an article by Lonnie K. Stevens of Hofstra University (2009), Professor Stevens found that there is no more business capital formation in right-to-work states, as measured by the number of businesses and the ratio of firm formations to total firms.[1] Additionally, he found that right-to-work states experience little or no gain in employment or economic growth. Professor Stevens did find, however, that a right-to-work law is correlated with a reduction in wages.

In a paper by Dr. Roland Zullo, Professor Zullo examined whether right-to-work laws are related to fatality rates in construction.[2] Utilizing occupational data for the period 2003-2009 and industry fatality data for the period 2001-2009, he reported that the fatality rate is 40 percent higher for industry fatalities and 34 percent higher for occupational fatalities in right-to-work states.[3] His regression analysis found that (1) unionization is associated with lower industry and occupational fatality rates, and (2) this positive union effect is stronger in states without right-to-work laws.

In an article by Dr. Jeff Vincent of Indiana University, Dr. Vincent makes the point that the deindustrialization we have witnessed in high-wage, high-benefit jobs in manufacturing and information industries is occurring in both free-to-bargain states and right-to-work states.[4] In fact, right-to-work states are no more immune to the deindustrialization we have witnessed than are free-to-bargain states.

In a study that analyzed seven socio-economic variables as proxies for the standard of living, the author found that residents of free-to-bargain states were

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[1] Stevens, Lonnie K. *The Effect of Endogenous Right-to-Work Laws on Business and Economic Conditions in the United States: A Multivariate Approach.* Review of Law of Economics. 5:1, 2009.

[2] Zullo, Roland. *Right-to-Work Laws and Fatalities in Construction. Research Note.* Working U.S.A. The Journal of Labor and Society. Volume 14. June, 2011. Pp. 225-234.

[3] Professor Zullo defines construction industry fatalities to include persons who are not usually members of the building trades (e.g., truck drivers); he defines occupational fatalities to include persons in the building trades who are not employed in the construction industry (e.g., plumbers employed by local government).

[4] Vincent, Jay. *The 2006 Indiana Right to Work Campaign.* Indiana University. Division of Labor Studies. January, 2006.

significantly healthier, more productive, less impoverished, and enjoyed a longer life span. (Minor, 2012).[5]

Whereas there once may have been an advantage for manufacturing and high tech companies to locate in right-to-work jurisdictions, that advantage has long since dissipated. Firms seeking significant savings in labor costs have increasingly moved their plants and operation overseas. For example, Ford Motor Company relocated 4,500 jobs to its Ford plant in Cuautitlán, Mexico. Union leaders at this plant agreed to concessions that reduced wages to $4.50 per hour. It was stated they agreed to these wage concessions in order to compete with China. General Motors is the largest private employer in Mexico with 72,000 employees producing parts. It is hard for General Motors to resist the lure of Mexican workers in Matamoros, Mexico, who earn $1 to $2 per hour. In an article discussing the growth in auto manufacturing in Mexico, the average wage at a Chrysler plant in Santillo, Mexico was $3.20 per hour. It is absurd to believe that employers in right-to-work states can compete with these figures. In a global economy, right-to-work legislation simply cannot compete with third-world or developing countries.

In a symposium by the Federal Reserve Bank of Boston, Senior Economist Robert Tannewald casts doubt on findings that right-to-work legislation is associated with economic growth by stating that it is a methodological flaw to extract one of a state's economic development policies and to correlate it with state economic indicators. Granting that right-to-work legislation may have an effect on economic development, Tannewald suggests that it is, at best, a short-term response, and that it has played itself out, and he casts doubt that it would have any long-term effect on economic development in a state.

Simply put, all credible statistical evidence to date shows no relationship between right-to-work and economic growth or employment. Dr. Lafer (2011) has pointed out that if one looks at per capita income over the past thirty years, four of the five fastest growth states were free-to-bargain states; and ten free-to-bargain states grew faster than

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[5] The seven socio-economic measures used in the study were gross domestic product, poverty rates, percentage of citizens who have basic health insurance, employment rates, home ownership rates, life expectancy rates, and income gap.
Minor, Darrell. *Poverty, Productivity, and Public Health: The Effects of "Right to Work" Laws on Key Standards of Living.* The NEA higher Education Journal. Fall 2012: Thought and Action. Pp. 16-28.

75% of the right-to-work states. In addition, there is simply no correlation among unemployment rates. If one examines unemployment rates in October, 2013, the states with the highest and lowest unemployment rates in the country were both found in right-to-work states: Nevada at 9.3%, and North Dakota at 2.7%.

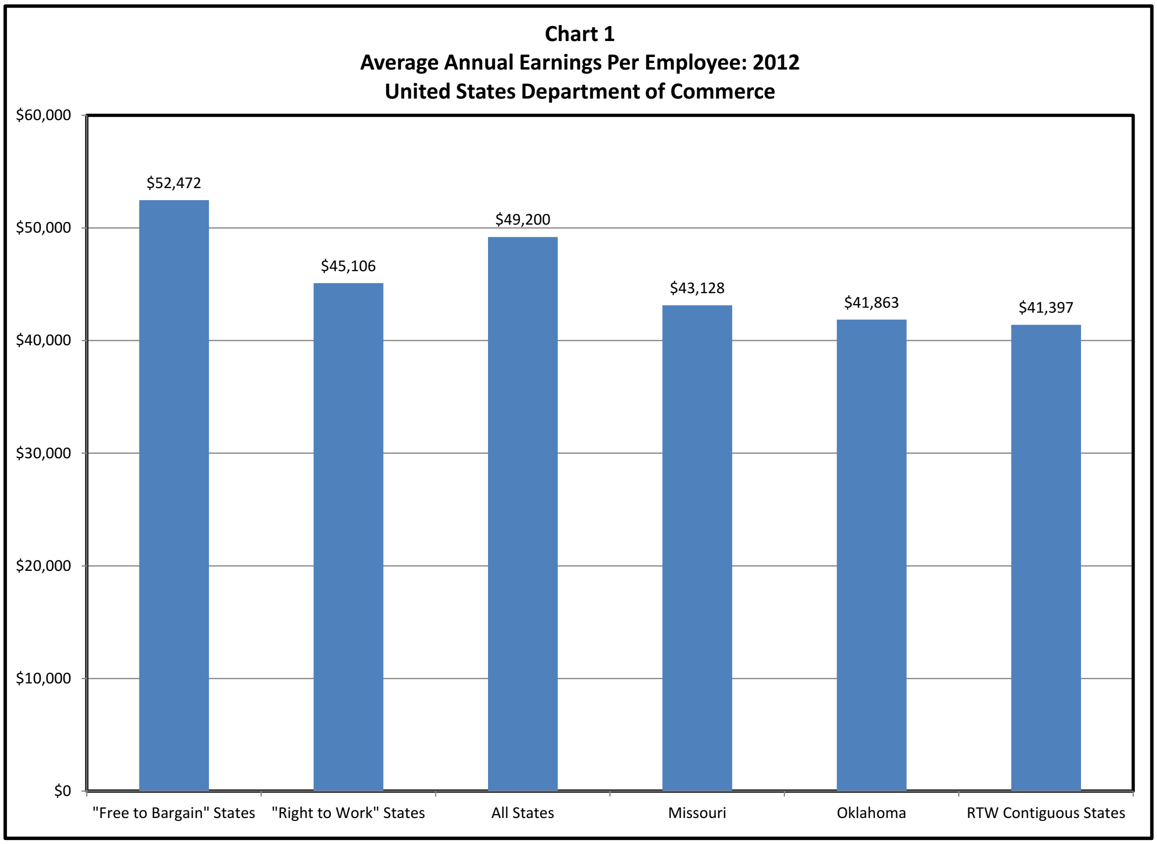
If one examines manufacturing employment over the past decade, one sees wide disparities in the loss of manufacturing jobs. If one examines Missouri and the eight states contiguous to Missouri, Tennessee, a right-to-work state, had the largest percentage of manufacturing jobs lost at 39.6%, while Nebraska, also a right-to-work state, had the lowest percentage of manufacturing job loss over the past decade, at 19.6%.[6] In between these two states in the region are three free-to-bargain states and six right-to-work states.

III. Economic Impact on Missouri Families and Taxing Authorities

In order to adequately assess the potential economic impact of right-to-work legislation on Missouri workers and families, one has to account for the predicted loss of income and revenues by residents of Missouri and the various taxing authorities at the state, county, and local levels of government. The lower paid wages forecasted in Missouri as a result of right-to-work legislation would have a multiplier effect on all sectors of the economy.

Chart 1 illustrates the average annual earnings per employee for 2012. In free-to-bargain states, average annual earnings per employee were $52,472, while only $45,106 in right-to-work states; average annual earnings were thus 16.3% higher in free-to-bargain states. In Missouri, average annual earnings per employee were $43,128, compared with $41,863 in Oklahoma, and $41,397 on average in those right-to-work states contiguous to Missouri. Average annual earnings in Missouri were 3.0% higher than in Oklahoma, and 4.2% higher than in all right-to-work states contiguous to Missouri.

[6] Of the eight contiguous states to Missouri, there are two free-to bargain states (Illinois and Kentucky) and six right-to-work states (Arkansas, Iowa, Kansas, Nebraska, Oklahoma and Tennessee)



Direct Effects of Reduction of Income

In the most extensive study to date on the economic impact on wages and benefits of right-to-work laws, the authors found that wages in right-to-work states were 3.2% lower than in free-to-bargain states, after controlling for a full complement of individual demographic and socio-economic variables as well as state macroeconomic indicators (Gould and Shierholz, 2011). In an analysis of average annual earnings in 2012 for Missouri and the eight states contiguous to Missouri in Chart 1 above, the results showed that Missouri had average annual earnings per employee in 2012 of $43,128. For the six right-to-work states contiguous to Missouri, the average annual earnings in 2012 were $41,397. This represents a potential loss of 4.18% in earnings for Missouri workers compared to the six contiguous right-to-work states. I present a range of estimates based upon (1) the percentage decrease in wages of 3.2% in the Gould and Shierholz study in 2011 and (2) the author's calculations of 4.18%. Table 2 provides the estimates of direct economic loss to Missouri citizens.

This loss in annual income for Missouri workers represents the direct or first order impact of the movement to right-to-work in Missouri. This loss in annual income does not take account of the indirect or secondary affects, as it ignores multiplier effects (e.g., induced or secondary effects) on other workers and their families in Missouri. It also ignores impacts on tax revenue bases in Missouri that are a function of the general level of income and economic activity in Missouri.

As an offset to the reduction in income for Missouri workers (direct impacts), there will be an increase, to some extent, in employment in Missouri as a result of the lower wages paid. For example, employment in low-skilled industries would be expected to increase in Missouri because the payment of lower wages induces firms to hire less productive workers (with the adverse result that it would take more workers to complete any given task). In this case I have assumed that the elasticity of labor demand in response to a decrease in wages is 0.20 -- in other words, if wages fall, there is a slight increase in employment. A number of labor studies confirm these elasticity estimates (Kniesner, 1987; Michl, 1986, and Belman, 1988).[7]

According to data from the U.S Bureau of Labor Statistics, the 2012 average annual earnings in Missouri were $43,128. Utilizing the assumption that wages would decrease by 3.2% as a result of right-to-work legislation over a three-year horizon, the decrease in annual average earnings is estimated to be $1,380, resulting in average annual earnings of $41,748 in 2012 dollars.[8] The direct loss in income for Missouri workers would be $3.02 billion dollars annually.

Based upon a labor elasticity estimate of -0.20, a 3.2% reduction in wages would generate 14,008 additional jobs. Assuming that these additional workers would earn an average annual income of $41,728 (a very liberal estimate for these low-skilled workers), this would generate $584.81 million in additional income in Missouri. This would partially offset the $3.02 billion in direct lost income. Hence, the net loss in direct

[7] The elasticities of demand for labor reviewed range between –0.07 and -0.44. I have used –0.20 for our estimates in this section.

[8] Because wages are sticky in the short-run as a result of wage contracts and implicit contracts, I have estimated that it would take three years to incorporate fully the wage reduction of 3.2%.

income to Missouri workers and their families under the estimate of a 3.2% decrease in wages is $2.44 billion annually.

Utilizing the assumption that wages would decrease by 4.18% as a result of right-to-work legislation, the decrease in annual average earnings would be $1,803, resulting in average annual earnings of $41,325. The direct loss in income for Missouri workers would be $3.95 billion dollars annually.

Table 2
Economic Impact on Wages and Employment in Missouri
2012 Data

	Gould / Shierolz (2011)	Kelsay, 2013
	3.20%	4.18%
2012 Average Annual Wage in Missouri [1]	$43,128	$43,128
Decrease in Wage [2]	$1,380	$1,803
New Annual Wage	$41,748	$41,325
Number of Workers [1]	2,188,757	2,188,757
Loss in Income for Missouri Workers [3]	$3,020,694,781	$3,945,782,557
Increase in Employment from Lower Wage [4]	14,008	18,298
Increase in Income from Lower Wage [5]	$584,806,510	$756,169,769
Net Economic Loss in Income in Missouri [6]	$2,435,888,271	$3,189,612,788

[1] United States Census Bureau. Missouri 2012.
[2] 2012 annual wage in Missouri multiplied by estimated loss in wages.
[3] Decrease in wages *multiplied* by number of workers
[4] Increase in employment derived from labor elasticity estimate of -0.20 (Kelsay, 2004)
[5] New annual wage *multiplied* by increase in employment.
[6] Loss in Income for Missouri workers minus increase in income from lower wage.

Based upon a labor elasticity estimate of -0.20, a 4.18% reduction in wages would generate 18,298 additional jobs. Assuming that these workers would earn $41,325 this would generate an additional $756.17 million in additional income in Missouri. This would partially offset the $3.95 billion in direct lost income. Hence, the net loss in direct income to Missouri workers and their families under the estimate of a 4.18% decrease in wages is $3.19 billion annually.

Induced or Secondary Effects of a Reduction in Income

In order to assess the secondary or induced effects, I have utilized economic impact multipliers from the Bureau of Economic Analysis, called RIMS II multipliers, for Missouri. The application of the earnings multipliers will allow us to quantitatively assess the secondary and induced effects on other sectors and their families in Missouri as well as on public sector revenue streams.

In the previous section, I have calculated that right-to-work legislation in Missouri would reduce incomes in Missouri between $2.44 billion and $3.19 billion. This loss in income incorporates the estimated additional jobs that would be created via a lower wage.

The earnings multiplier for Missouri is 1.88. I use the earnings multiplier, which measures the direct and induced/indirect impacts of a reduction in earnings. Based upon a direct economic loss between $2.44 billion to 3.19 billion annually, I estimate the direct and induced effects combined would range between $4.58 billion and $6.0 billion.

Loss in Missouri Sales Tax Revenue

The current sales tax rate in Missouri is 4.225% on those items not exempt from the sales tax base. The average local (county and city) sales tax rate in Missouri is approximately 2.95% statewide. For the projected economic loss of sales tax revenue, I have used the Missouri sales tax rate statewide of 7.175% (4.225% *plus* 2.95% *equals* 7.175%). According to estimates of the taxable sales tax base in Missouri, I have utilized a conservative 25% sales tax base coverage. If income would decrease by $4.58 billion to $6.0 billion, and given that the estimated sales tax coverage is 25.0% and an average tax rate of 7.175% statewide, I have estimated that sales tax revenue would decrease by $82.14 million to $107.56 million annually.

Loss in Missouri Income Tax Revenue

State income taxes for Missouri would decrease as well. The current Missouri marginal income tax rate on income over $9,000 is 6.0%. I have made several conservative assumptions regarding the net decrease in income taxes in Missouri:

(1) 25% of the lost income would have been taxed at an effective tax rate of 6.0%;

(2) 50% of the lost income would have been taxed at an effective tax rate of 3.0%; and

(3) 25% of the lost income would not have been subject to Missouri Income tax.

Based upon the two estimates of lost incomes in the State of Missouri and the overall effective tax rate of 3.0%, the economic loss in state income taxes is estimated at $137.38 million to $179.89 million annually.

IV. Comparative Analysis

Early firm location studies consistently found that the important factors that decision makers consider and compare among regions when deciding where to locate a new plant or facility are (1) cost and quality of the labor force, (2) proximity to markets for their products, (3) access to raw materials and other supplies, (4) access to quality infrastructure (roads, highways, airports, railroad systems, and sewage systems), and (5) quality-of-life characteristics. These traditional firm location studies and site selection studies have focused primarily on the selection criteria for manufacturing firms. As stated earlier, the advantage of low-cost labor has long since dissipated in the face of an increasing competitive global marketplace. Given the mobility of capital, traditional manufacturing firms will locate where low-cost labor is readily available in countries such as Mexico and China. Domestic firms cannot and do not compete with these low-cost labor countries.

In the 1970's, economic development consisted primarily of efforts by the states to recruit manufacturing businesses. As a result of (1) globalization, (2) increased growth of the service sector that has decreased our reliance on manufacturing, and (3) technological advances, we are now operating in a "new economy" where the focus must be on innovation, technology, science, and entrepreneurship and less on traditional site location factors (Hall, 2007, Pohjola, 2002).

An economic development policy that is based upon low labor costs, tax abatements, and subsidies is ineffective and inefficient public policy and depletes state resources for investing in real economic development. (Fox & Murray, 2004; Bartik, 1994 and 2004). Rather, the development of a high quality workforce is cited as one of the most important factors in firm location (Rast & Carlson, 2006). Sound regional economic development policies focus on education, training, and infrastructure. Competitive businesses are not attracted to the cheapest locations but rather to high-value locations. Economic development policies that attract firms are investment in education, public infrastructure, and workforce training.

In *The 2012 State Economy Index* published by The Information, Technology & Innovation Foundation, the authors state the following on page 16:

> "The two states whose economies have lagged the most in making the transition to the New Economy are Mississippi and West Virginia. Arkansas, Oklahoma, Alabama, Kentucky, Louisiana, South Dakota, Indiana and Wyoming round out the bottom 10. Historically, the economies of many of these Southern and Plains states depended on natural resources or on mass-production manufacturing, and relied on low costs rather than innovative capacity to gain competitive advantage. But, in the New Economy, innovative capacity (derived through universities, R&D investments, scientists and engineers, highly skilled workers, and entrepreneurial capabilities) is increasingly the driver of competitive success."

In this 2012 ranking, Massachusetts, Delaware, Washington, California, and Maryland (all free-to-bargain states) were the top five most desirable locations for the globally competitive industries of the 21st century.[9] Ten out of the thirteen states with the lowest rankings were right-to-work states.

In a paper by Dr. Jeremy L. Hall of The University of Alabama at Birmingham, he developed a composite measure of state innovation capacity for the purpose of analysis and meeting the competitive demands of the "new economy" (2007).[10] On page 640 of his paper, he presents the composite measure for all 50 states. Out of the 12 states with the highest composite scores of innovation capacity, ten were free-to-bargain states; and among those states with the lowest composite scores, seven of ten were right-to-work states.

The Milken Institute has developed a State Technology and Science Index that provides a composite index that illustrates which states are in the best position to take advantage of opportunities for economic growth in the new economy.[11] Milken has published this index for the past five years. In the *State Technology and Science Index 2012*, thirteen of the top fifteen states were free-to-bargain states; seven of the bottom ten states in the ranking were right-to-work states.

Prior to 2012, the most recent state to adopt right-to-work was Oklahoma in 2001. An analysis of the results in Oklahoma shows right-to-work to be a failure there. Since

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[9] The five categories of variables used to compile the index are knowledge jobs, globalization, economic dynamism, digital economy, and innovation capacity.

[10] Hall, Jeremy L. Hall. "Informing State Economic Development Policy in the New Economy: A Theoretical Foundation and Empirical Examination of State Innovation in the United States." *Public Administration Review.* July/August, 2007: 630-645.

[11] Milken Institute. Kevin Klowden and Michael Wolfe. 2012 State Technology and Science Index: Enduring Lessons for the Intangible Economy. April, 2013.

its passage in 2001, manufacturing employment in the state and firm relocations to the state have fallen, just the opposite of what right-to-work proponents claimed would happen.[12]

According to the Oklahoma Department of Commerce website, businesses contemplating locating their business in Oklahoma consider a number of site selection factors. The fact that Oklahoma's right-to-work status is not listed by the Oklahoma Department of Commerce as one of those factors provides evidence that the state does not view right-to-work as a primary attraction factor. Rather, the Department of Commerce's focus is on a variety of financing and incentive options.[13] Major factors cited by the Department are cash payments to employers. For example, the Quality Jobs 10-Year Cash Incentive provides up to 5% of new payroll for up to 10 years for new business startups and relocation. Criteria that must be met to receive this incentive are (1) the company must pay employees the average county wage or $29,745, whichever is lower, (2) the company must achieve $2.5 million annual payroll in three years, and (3) the company must offer basic health insurance. This incentive may also be combined with the Investment/New Jobs Credit. The targeted industries are manufacturing; research and development, including wind power manufacturing; corporate services; and data centers. The fact that right-to-work is irrelevant to high wage employers is evident from the fact that Oklahoma recently found it necessary to double the cash-back incentive – now offering an incentive for up to 10% of payroll costs – in order to attract higher-wage employers to the state.

Chart 2 depicts historical losses in the manufacturing sector for the economies of states contiguous to Missouri. As stated earlier, there are two bordering states that are free-to-bargain states and six that are right-to-work states. Illinois and Kentucky are free-to-bargain states, whereas Arkansas, Iowa, Kansas, Nebraska, Oklahoma, and Tennessee are right-to-work states. In the regional economy (i.e., Missouri and the eight contiguous states) for the period 1990-2010, Nebraska, a right-to-work state, had the lowest

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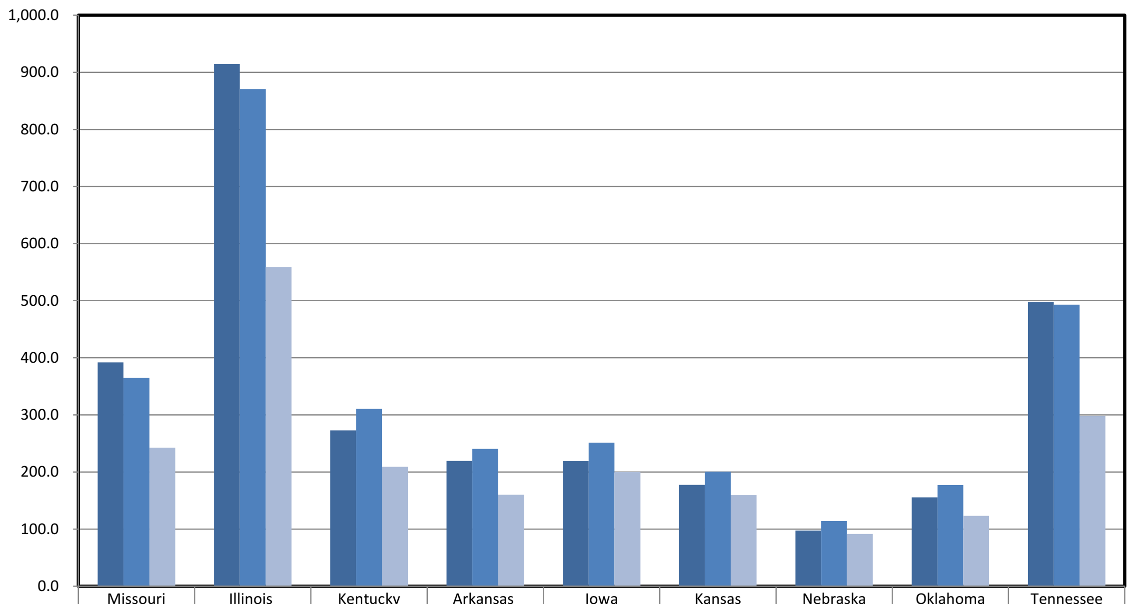
[12] Many of the most ardent supporters of the right-to-work initiative claimed that, by simple passage of right-to-work in Oklahoma, new business startups and firm locations would increase eight- to- ten fold. Statement Before the Employment, Labor and Pensions Committee of the Indiana House of Representatives, February 11, 2011, Dr. Gordon Lafer.

[13] Oklahoma Incentives for Locating & Expanding Businesses. Site Selection. Oklahoma Department of Commerce. http://www.okcommerce.gov/Site-Selection/Incentives.

percentage of manufacturing jobs lost, at 10.1%, while Tennessee, another right-to-work state, had the highest percentage of manufacturing jobs lost, at 40.1% percent. For the period 2000-2010, the results are similar – Nebraska had the lowest percentage of manufacturing jobs lost, at 19.6%, and Tennessee had the highest percentage of manufacturing jobs lost, at 39.6%. There is simply no correlation between manufacturing jobs lost and the right-to-work status of a state; rather it is a function of the composition of the manufacturing sector in each state in terms of total employment.

Chart 2
Manufacturing Employment in Missouri and Contiguous Border States
1990-2010



	Missouri	Illinois	Kentucky	Arkansas	Iowa	Kansas	Nebraska	Oklahoma	Tennessee
1990	392.1	914.6	272.7	219.3	218.9	177.5	97.3	155.7	497.5
2000	364.9	870.5	310.4	240.3	251.4	200.6	113.9	176.9	493.1
2010	242.7	558.8	209.1	160.1	200.1	159.6	91.6	123.1	297.8

An examination of other important socio-economic measures shows that Missouri performs uniformly better than Oklahoma and other contiguous right-to-work states. The following series of charts illustrates, firstly, that free-to-bargain states perform better than right-to-work states across a number of socio-economic variables. Secondly, the following series of charts illustrate that Missouri performs uniformly better than Oklahoma (last state to adopt right-to-work, in 2001, until Michigan and Indiana in 2012) and the other right-to-work states bordering Missouri.

Chart 3 through Chart 9 show a comparison of free-to-bargain states and right-to-work states with respect to (1) percentage of workers that have employer-sponsored health insurance, (2) per capita gross domestic product, (3) percentage of population without health insurance, (4) percentage of population aged 25 and over who have graduated from high school, (5) median household income, (6) percentage of population living at or below poverty level, and (7) percentage of population at or below the minimum wage.

Chart 3 illustrates the percentage of workers with employer-sponsored health insurance in 2012. In free-to-bargain states, 57.8% of workers have employer-sponsored insurance, while only 54.0% in right-to-work states have employer-sponsored health insurance. In Missouri, 57.3% of workers had employer-sponsored health insurance in 2012, compared to only 50.6% in Oklahoma, and 52.5% in those right-to-work states contiguous to Missouri.

Chart 4 illustrates per capita gross domestic product among the states in 2012. In free-to-bargain states, per capita real gross domestic product was $44,764, while it was only $39,625 in right-to-work states. Per capita real gross domestic product was thus 12.9% higher in free-to-bargain states. In Missouri, per capita real gross domestic product was $36,815, while it was $36,252 in Oklahoma, and $38,930 on average in those right-to-work states contiguous to Missouri. Missouri had a higher per capita gross domestic product than three of the contiguous right-to-work states and a lower per capita gross domestic product than the other three contiguous right-to-work states. There is no correlation between the right-to-work status and per capita real gross domestic product.

Chart 3
Percent of Workers with Employer Based Health Insurance: 2012
Source: United States Census Bureau, Current Population Survey

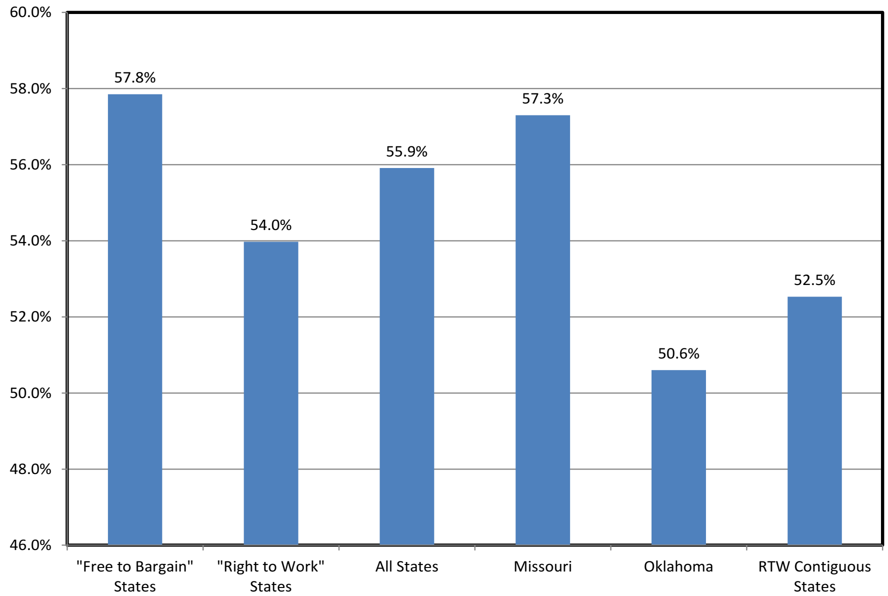


Chart 4
Per Capita Real Gross Domestic Product: 2012
Source: United States Bureau of Economic Analysis

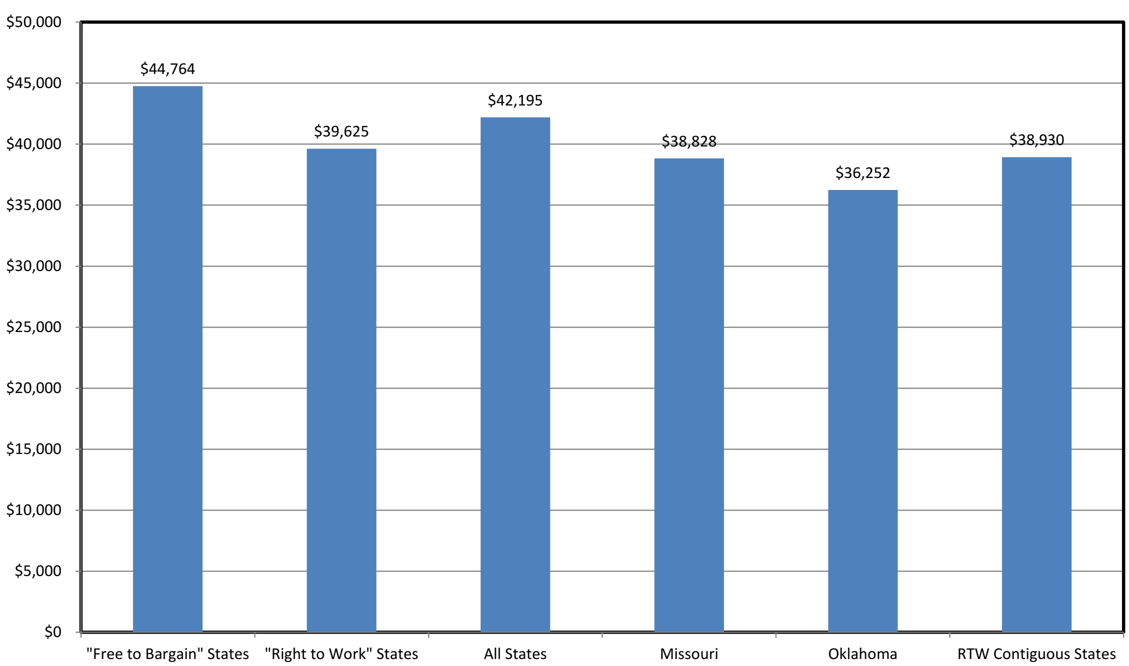
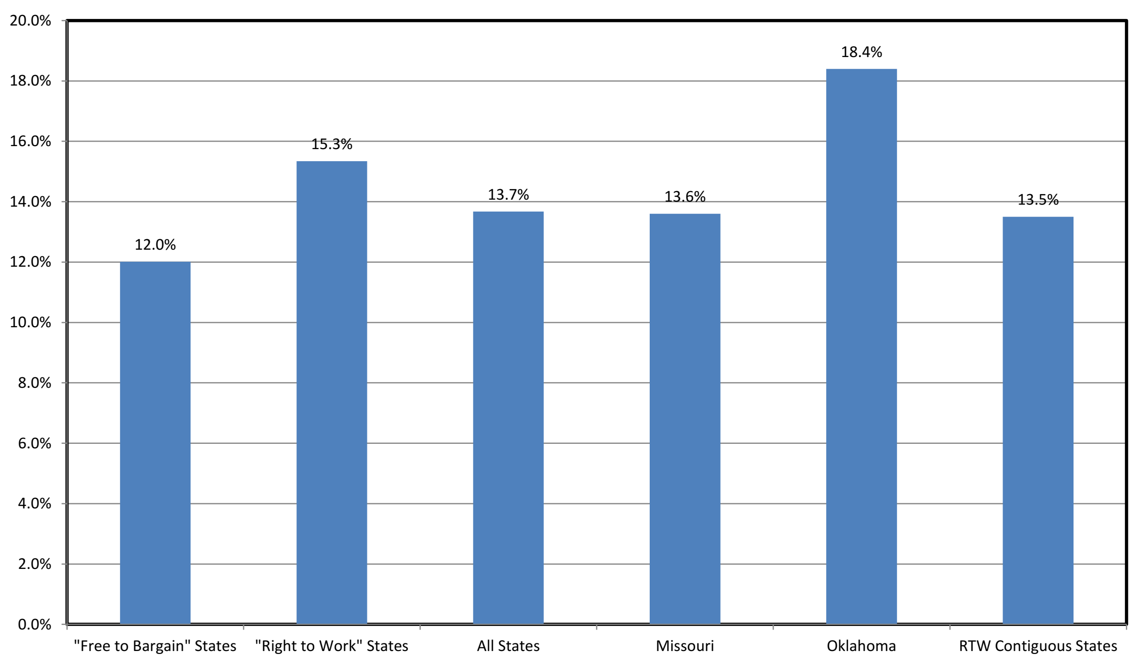


Chart 5 illustrates the percentage of the population that lacks health insurance. In free-to-bargain states, 12.0% of the aggregate population is uninsured; in right-to-work states, 15.3% of the aggregate population is uninsured. In Missouri, 13.6% of the state's population is uninsured, while in Oklahoma, 18.4% of the population is uninsured.

Chart 6 illustrates the percentage of the population aged 25 and over that has graduated from high school. In free-to-bargain states, 88.8% of the aggregate population aged 25 and over have graduated from high school; in right-to-work states, 87.1% of the aggregate population aged 25 and over have graduated from high school. In Missouri, 88.0% of the state's population aged 25 and over have graduated from high school, compared with 86.7% in Oklahoma.

Chart 5
Percent of Population Uninsured
Source: United States Census Bureau, 2012 Amercian Commmunity Survey
1 Year Estimates



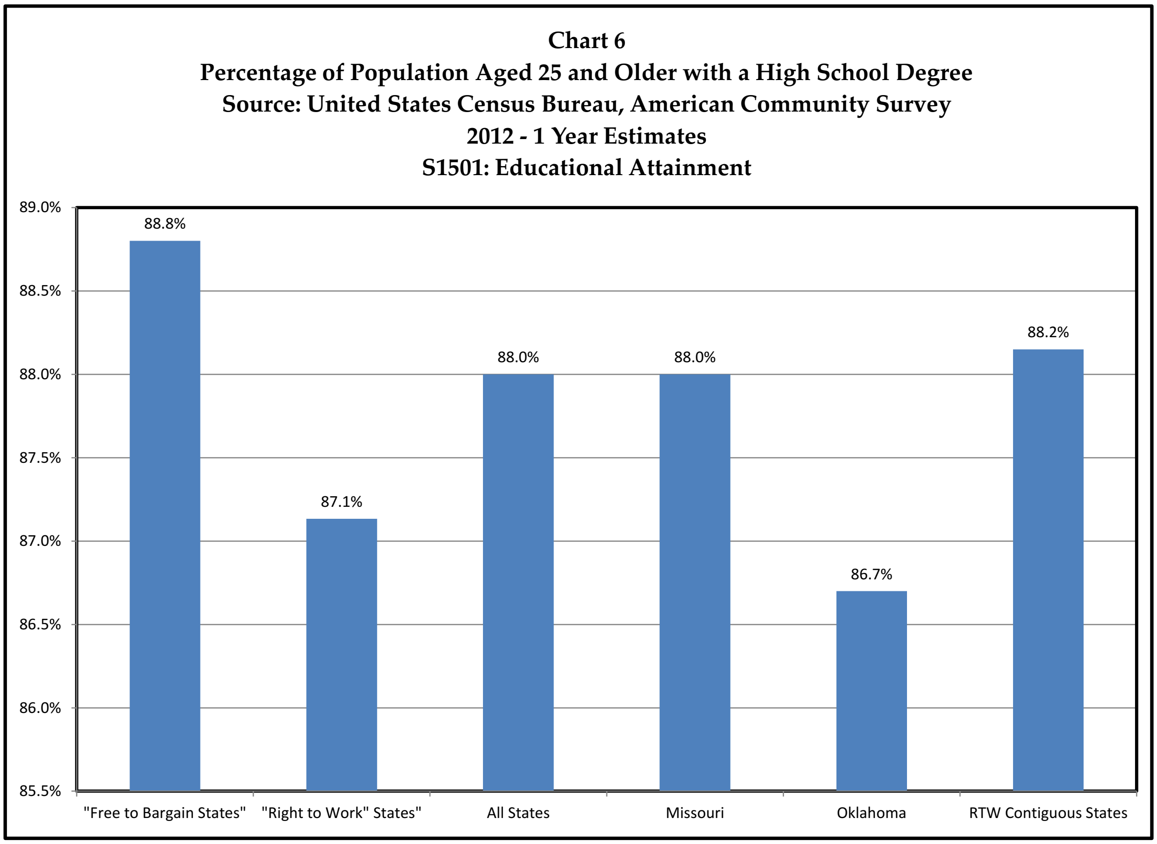


Chart 7 illustrates the median household income in 2012 in free-to-bargain states and right-to-work states. In free-to-bargain states, the median household income was $54,833, while the median household income in right-to-work states was only $48,394. Median household income was thus 13.3% higher in free-to-bargain states. In Missouri, the median household income was $49,764, while it was only $48,407 and $46,735 in Oklahoma and the contiguous right-to-work states, respectively. Median household income in Missouri was 2.8% higher than in Oklahoma, and 6.5% higher compared to all contiguous right-to-work states.

Chart 7
Median Household Income: 2012
Source: United States Census Bureau, Current Population Survey

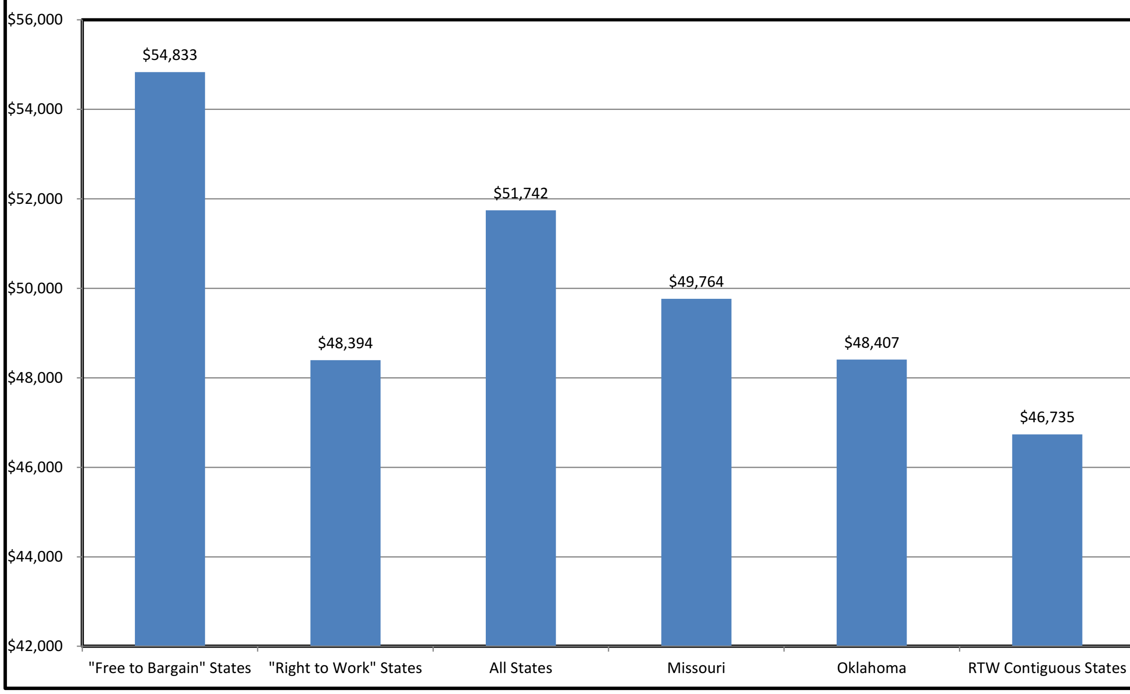


Chart 8 illustrates the percentage of the population living at or below the poverty level in 2012 in free-to-bargain states and right-to-work states. In free-to-bargain states, 14.0% of the population lived at or below the poverty level, while it was 16.4% in right-to-work states. In Missouri, 16.2% of the population lived at or below the poverty level, while, in Oklahoma, it was 17.2%. The percentage of the population living at or below the poverty level in Missouri was lower than three of the contiguous right-to-work states and higher than in the other three contiguous right-to-work states.

Chart 9 illustrates the percentage of the population that is at or below the minimum wage in the free-to-bargain states and the right-to-work states. In free-to-bargain states, 3.8% of the population was at or below the minimum wage, while 5.6% of the population in right-to-work states was at or below the minimum wage. In Missouri, 6.3% of the population was at or below the minimum wage, while in Oklahoma, 7.2% of the population was at or below the minimum wage. In the contiguous right-to-work states, 6.0% of population was at or below the minimum wage. The other free-to-bargain states (Illinois and Kentucky) had a lower percentage of the population at or below the minimum wage than five of the six contiguous right-to-work states.

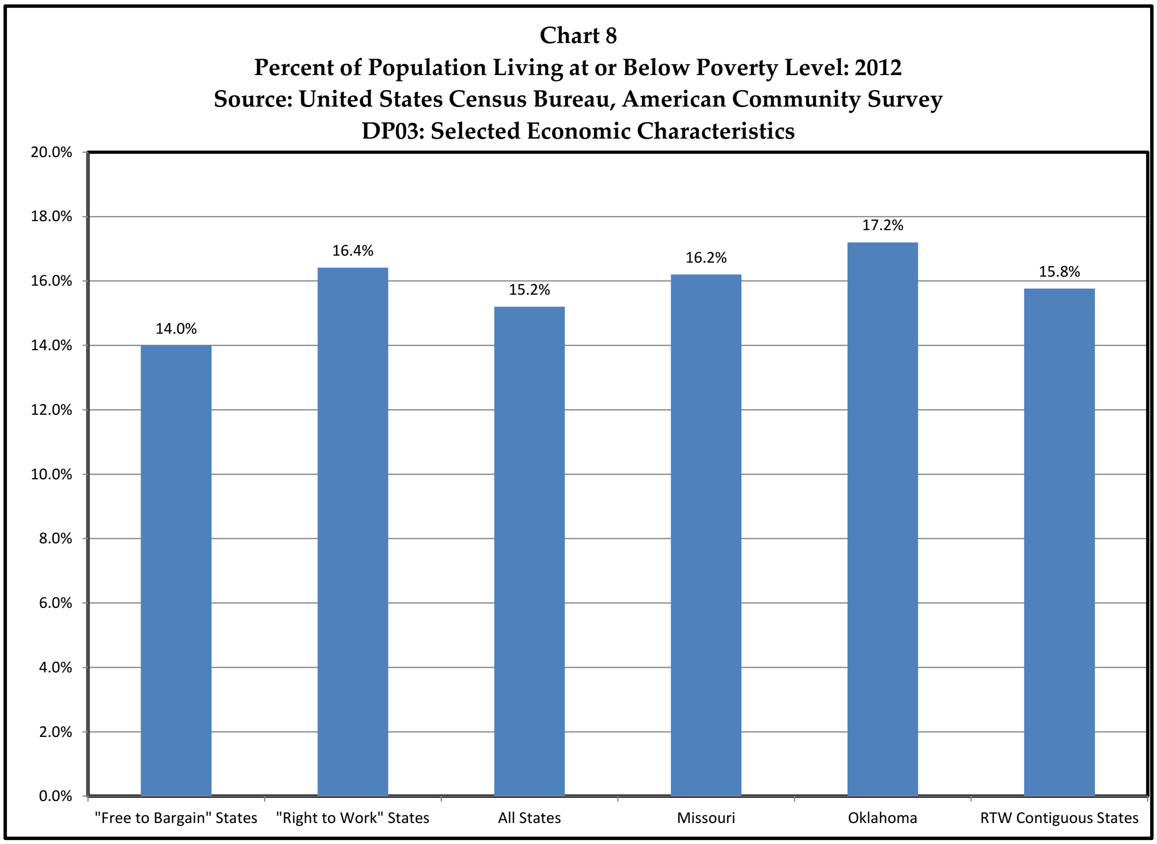


Chart 8
Percent of Population Living at or Below Poverty Level: 2012
Source: United States Census Bureau, American Community Survey
DP03: Selected Economic Characteristics
20.0%
18.0%
16.0%
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
14.0%
16.4%
15.2%
16.2%
17.2%
15.8%
"Free to Bargain" States
"Right to Work" States
All States
Missouri
Oklahoma
RTW Contiguous States

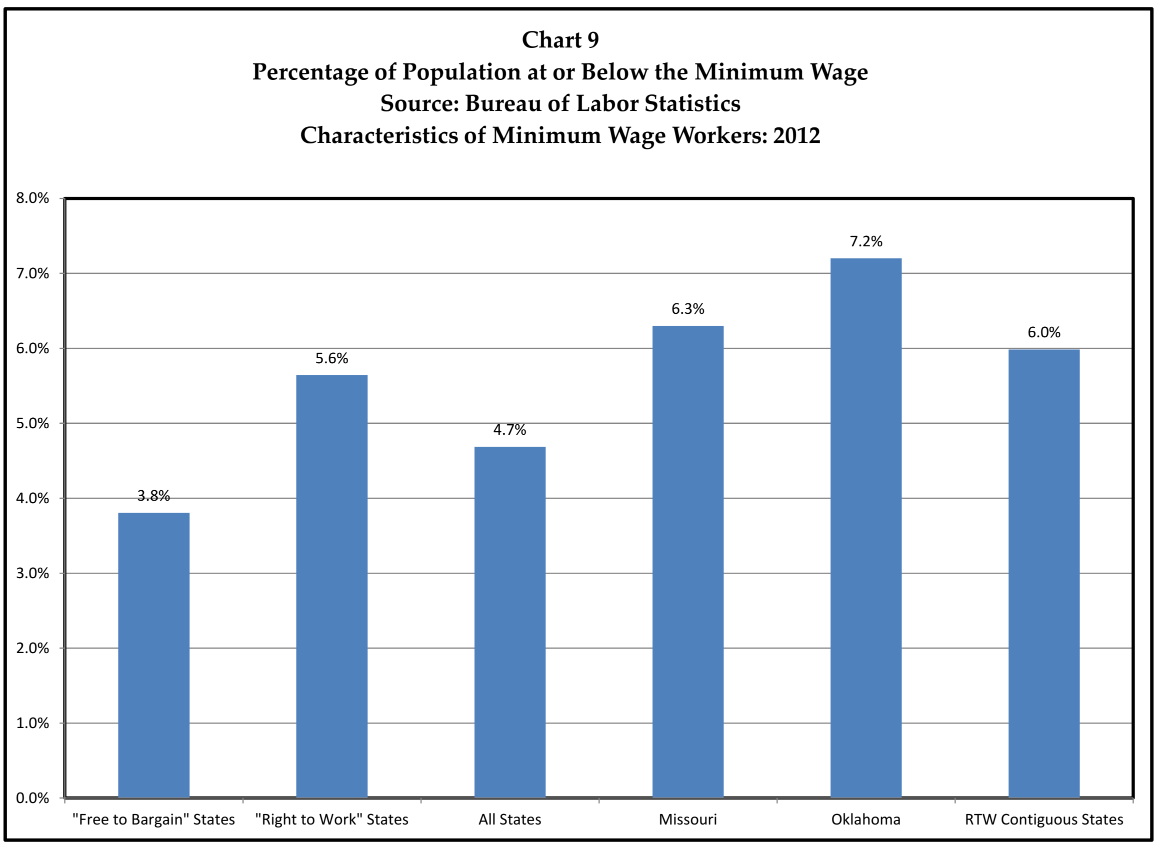


Chart 9
Percentage of Population at or Below the Minimum Wage
Source: Bureau of Labor Statistics
Characteristics of Minimum Wage Workers: 2012
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
3.8%
5.6%
4.7%
6.3%
7.2%
6.0%
"Free to Bargain" States
"Right to Work" States
All States
Missouri
Oklahoma
RTW Contiguous States

IV. Conclusions

- Based upon estimates of the direct and secondary effects of a right-to-work law in Missouri, I have estimated that the direct and secondary effects on Missouri households would be between $1,945 and $2,547 per household in annual income.
- The movement to a right-to-work state in Missouri is estimated to cost Missouri workers and their families between $4.58 billion to $6.0 billion annually in lost income.
- The movement to a right-to-work state in Missouri is estimated to cost Missouri workers and their families between $82.14 million to $107.56 million in lost sales tax collections annually at the state, county, and local level.
- The movement to right-to-work in Missouri would cost the state of Missouri between $137.38 million to $179.89 million annually in lost income tax revenue.
- The total economic impact of movement from a free-to-bargain state to a right-to-work state in Missouri would be a loss of income and revenue to Missouri, workers, families, and taxing agencies between $4.80 billion to $6.28 billion annually.

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