

**THE COST OF REPEALING MICHIGAN'S
PREVAILING WAGE POLICY:**
*Impacts on Total Construction
Costs and Economic Activity*

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EXECUTIVE SUMMARY

The State of Michigan's prevailing wage law covers construction workers employed on publicly-financed construction projects. This policy is enacted to protect local construction labor markets and economies from distortions caused by publicly-funded capital construction. Prevailing wage laws allow all contractors to compete evenly without distorting privately-established local wage rates. Opponents of prevailing wage laws claim that the policy is associated with increased public construction costs. This belief is not supported by the preponderance of research examining this issue. Opponents also ignore the negative economic impact of repealing or weakening prevailing wages. This report reviews the research on prevailing wage laws and construction costs and provides an estimate of the impact of repeal on the Michigan state economy.

Summary of Part I: Prevailing Wages and Total Construction Costs

The belief that reducing wages will reduce costs is based on an incomplete understanding of the construction industry. A fundamental problem with this assertion is that labor costs are a small share of total construction costs. For the types of projects covered by Michigan's prevailing wage law, labor costs and benefits are approximately 20 percent of total costs. It is simply not possible to obtain substantial savings from a cost component that is such a low percentage of the total. Economic research that is summarized in this report indicates that the use of skilled construction labor is very sensitive to wage rates. As wages decrease, less productive employees replace more skilled craft workers. Manual labor is also used instead of productivity-enhancing capital equipment. In a comparison of states with "weak" or no prevailing wage laws to states that have "average" or "strong" laws (like Michigan's), value added per construction worker is 11 percent higher in the states with effective wage policies. Also, material and fuel costs are about 3 percentage-points lower in these states. An elimination of prevailing wages is accompanied by a variety of undesirable changes that tend to offset, or cancel out, the intended savings associated with cutting wage rates. These findings are consistent with the overwhelming majority of research by economists indicating that the costs of building public structures such as schools, highways, and street and sewer projects are unaffected by the presence of municipal, state, or federal prevailing wage laws.

Summary of Part II: Economic Impacts of Repealing Michigan's Prevailing Wage Law

Prevailing wage laws are part of a set of interrelated institutional arrangements, including a stronger emphasis on apprenticeship training, greater workplace safety, higher rates of health insurance and retirement benefits, relatively higher unionization rates and wages that contribute to the "high road" in the construction industry. On the one hand, one system emphasizes high productivity rewarded by good middle-class wages to support working families; contrarily, the other approach seeks to use government spending to undercut privately-established wages in a community to achieve prosperity through lower worker income. On the former path, the construction industry provides the skills needed to build the structures and infrastructures for a growing, technologically sophisticated, and competitive Michigan economy.

There are two ways that repealing Michigan’s prevailing wage policy would affect economic activity. First, prevailing wage laws are associated with a greater use of in-state contractors. Without the law, Michigan’s public and private construction funds will leak out of the state’s economy as more out-of-state contractors win project bids. Second, changes in prevailing wages alter other forms of spending in the construction industry. These effects are incorporated in a dynamic market simulation using the IMPLAN economic impact analysis software. Data from the *Economic Census of Construction*, the *American Community Survey*, and the *National Health Expenditures Survey* are utilized in the model. The analysis reports that, with prevailing wage repeal, an estimated \$673 million in construction value would be completed by out-of-state contractors. This would result in a significant decrease in revenue for in-state businesses. Construction worker wages and benefits would fall by \$962 million but materials and fuels costs would rise by \$781 million. Proprietor (or contractor) income would increase by \$223 million.

Ultimately, these impacts would result in 11,320 jobs lost and a \$1.70 billion reduction in economic activity across Michigan, representing a 0.38 percent loss of state GDP if prevailing wage is repealed. Tax revenue would decrease with the reduction in economic activity. The total decrease in state and local tax revenue would exceed \$28 million in lost revenues per year. In addition, prevailing wage repeal would reduce Michigan’s combined federal income tax contributions by \$113.3 million.

Table A: Economic Impact of Repealing Michigan’s Prevailing Wage Law

Impact Category (2015 dollars)	Direct Effect	Multiplier	Total Economic Impact
Construction Industry Spending Change	-\$630.8 million	2.70	-\$1.70 billion
Employment	-3,788 jobs	2.99	-11,320 jobs
State and Local Taxes	–	–	-\$28.1 million

Source: IMPLAN.

The reduction in construction worker employment, income, and benefits would affect industries that are not related to construction. Health care and personal services would lose 3,400 jobs and \$375 million in revenues as construction worker health benefits fall. Decreases in worker income result in shrinking consumer demand, which is reflected in the employment change estimates for restaurants and bars (-665 jobs); wholesale trade (-252 jobs); arts, recreation and, accommodation services (-202 jobs); and retail trade (-192 jobs). Michigan’s real estate industry would also lose approximately \$105 million.

Conclusion

Ultimately, the prevailing wage for publicly-financed construction projects is a positive economic development tool providing substantial benefits to workers, contractors, families, and the overall economy. Weakening or repealing Michigan’s prevailing wage law will not reduce the cost of public construction and is not in the best interest of taxpayers. Instead, repeal would result in job losses and would reduce tax revenues in Michigan. Prevailing wage supports a dynamic, “high road” economy that promotes worker productivity and boosts economic activity.

INTRODUCTION

The State of Michigan's prevailing wage law covers construction workers employed on publicly-financed construction projects. The law requires that workers employed on public construction projects receive wages that are representative of the hourly compensation normally paid to workers on similar private and public projects in an area. As a public policy, prevailing wage is enacted to protect local construction labor markets and economies from distortions caused by publicly-funded capital construction. Large government projects may attract contractors from other areas where construction worker earnings are lower. As a result, these contractors may have a perceived advantage that creates an incentive for local contractors to cut costs. Since wages are the most controllable factor in the bidding process, public works construction puts local workers in the precarious position of having their wages reduced. This problem adds instability in the local construction industry – which is already a volatile market subject to the business cycle and seasonal weather patterns.

Laws requiring that a project be awarded to the lowest bidder preclude government agencies from directly addressing this problem by granting contracts to local contractors. Prevailing wage laws are an alternative solution that allows all contractors to compete evenly without distorting privately-established local wage rates. Under the wage policy, it is more likely that public projects will be completed by local contractors and construction workers. Higher business revenues and higher worker earnings by residents boost spending in the local economy. In turn, the spending of these parties benefits local industries that are not directly related to the construction industry – such as restaurants, bars, supermarkets, real estate agencies, healthcare providers, and financial and accounting firms.

During the 2015 session, the Michigan Legislature discussed repealing or otherwise changing the state's prevailing wage policy. These discussions are motivated by the belief that lowering construction worker wages would result in lower public construction costs (*MLive*, 2015). The purpose of this study is to address the implications of repealing or weakening prevailing wage rates. For example, the preponderance of research indicates that reducing construction worker wages is *not* associated with savings for taxpayers. This report illustrates how wage reductions set off an undesirable series of other changes that cancel out intended savings in wage rates. When wages decrease, for instance, less productive workers are employed. Lower worker productivity is associated with increased materials use and costs. Labor costs are also a low percent of total construction costs. For the types of projects covered by Michigan's prevailing wage standard, labor costs (wages and benefits) are approximately 20 percent of total costs (Census Bureau, 2015). Consequently, it is very difficult to obtain significant costs savings by reducing wage rates.

While Michigan legislators opposing prevailing wages focus on construction costs, there has been no empirical analysis of the impact of repealing the policy on the state's economy. Research indicates that a change in a state's prevailing wage law status alters spending in the construction industry in ways that ripple through the rest of the economy. For example, in states with "average" or "strong" prevailing wage laws, labor costs, worker productivity, and the percent of construction work completed by in-state contractors are all higher while material costs

and contractor profits are lower. Repealing Michigan's prevailing wage laws would not simply reduce wage rates. A policy change would be associated with the increased use of out-of-state contractors that would reduce economic activity as state tax funds would leak out of Michigan's economy. Lower construction worker wages are associated with decreased consumer spending. Consequently, repealing prevailing wages in the state would affect all industries in the Michigan economy, not just construction.

The remainder of this report is organized into two sections. Part I includes a review of the academic research on the effect that prevailing wages have, or do not have, on total construction costs. Part II of the report examines the economic impact of repealing Michigan's prevailing wage law. This section includes a description of economic impact analysis and software. It also includes a detailed description of the differences in cost components and in the use of in-state contractors between states with and without adequate prevailing wage laws. These data are the basis of the economic impact analysis and are used to show that economic activity is reduced when prevailing wage is repealed.

I. PREVAILING WAGES AND TOTAL CONSTRUCTION COSTS

General relationships between wages, costs, and labor productivity are important to consider before addressing the specifics of prevailing wages and the construction industry. For the U.S. economy as a whole, labor costs can be a good indicator of inflation because labor costs are, on average, two-thirds of all production costs (Banerji, 2005). This provides evidence for the intuitive understanding that production costs and prices increase as wages rise. However, increases in labor costs that are *also* accompanied by gains in labor productivity tend to stabilize production costs and prices. There are important similarities and differences between the construction industry and the overall economy that are helpful in understanding the effect of prevailing wages on construction costs.

While labor costs are a relatively high percent of total production costs for the overall economy, these costs comprise a much smaller share of total costs in the construction industry. The most reliable data on construction labor costs can be obtained from the U.S. Census Bureau's *Economic Census of Construction* (Census Bureau, 2015). These data are derived from a survey of construction contractors in every state conducted every five years. Data from the most recent Economic Census of Construction indicates that labor costs (wages and benefits) are approximately 13.8 percent of the net value of commercial and institutional building construction in Michigan.¹ This category includes many of the structures (institutional buildings) that are

¹ The *Economic Census of Construction* for 2012 does not report labor costs as a percent of total costs. This ratio must be calculated based on other data. Here, labor cost as a percent of total construction cost is derived by dividing total construction worker payroll, plus proportionally allocated total fringe benefits, by the net value of construction work. The net value of construction is based on the value of work completed by a contractor, less the value of work subcontracted to other contractors. The *Economic Census of Construction* defines construction worker payroll as the gross earnings paid in the reporting year to all construction workers on the payroll of construction establishments. It includes all forms of compensation such as salaries, wages, commissions, dismissal pay, bonuses, and vacation and sick leave pay, prior to deductions such as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The *Economic Census of Construction* defines the net value of

covered by the state's prevailing wage standard. Labor costs are also 22.2 percent of the total costs of highway, street, and bridge construction in Michigan – another category covering projects subject to prevailing wage requirements. These data are consistent with U.S. Census Bureau information from other states. For example, Philips (2014) reports that labor costs range between 17 percent and 20 percent for selected building types in Kentucky (Philips, 2014). Elsewhere, Duncan (2015a) has reported that labor costs are approximately 22 percent of the net value of construction for highway, street, and bridge construction in Colorado. Therefore, when wages change in the construction industry, a relatively smaller portion of overall costs is affected.

Labor costs are linked to construction efficiency and productivity. For example, Professors Blankenau and Cassou (2011) find that the use of skilled and unskilled construction labor is very sensitive to wage rates. As construction wage rates increase, skilled and more productive construction workers are used instead of unskilled workers. Professors Balistreri, McDaniel, and Wong (2003) also find that when wages increase, and more skilled construction workers are employed, more capital equipment and machinery is used in construction. Consequently, when construction wages increase, more productive workers are used along with more equipment. Since labor costs are a low percent of total construction costs, relatively small increases in labor productivity are needed to cancel out the impact of higher prevailing wage rates.

In an examination of the economic impact of California's prevailing wage policy, Duncan and Lantsberg (2015) have used data from the *Economic Census of Construction* to compare construction cost components between states with differing wage policies. Duncan and Lantsberg find that in states with weak or no prevailing wage requirements, construction worker labor costs and fringe benefits are lower compared to states with average or strong prevailing wage policies. Value added per construction worker is also lower in these states with weak or no prevailing wages. Finally, the combined costs of materials, fuels, and equipment rentals are higher in states without meaningful prevailing wage standards. These findings suggest that higher material and fuel expenses are a likely consequence of the increased use of less productive labor in those states with weak or no prevailing wage laws. Regardless, the data from the *Economic Census of Construction* indicates that states without effective prevailing wage laws do have lower labor costs, but also have lower labor productivity and higher costs for other production components. The California study, however, was based on data from 2007. In Part II of this study we report similar data based on data from the most recent 2012 *Economic Census of Construction*. The trend in construction cost components is very similar between the two periods, even though the data was obtained during different points in the business cycle.

construction as the receipts, billings, or sales for construction work done by contractors, less the value of construction work subcontracted to others. The net value of construction does not include contractor business receipts from retail and wholesale trade, rental of equipment without operator, manufacturing, transportation, legal services, insurance, finance, rental of property and other real estate operations, and other nonconstruction activities. Receipts for separately definable architectural and engineering work for others are also excluded. Nonoperating income such as interest, dividends, the sale of fixed assets, and receipts from other business operations in foreign countries are also excluded. See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: See Construction: Geographic Area Series: Detailed Statistics for Establishments: 2012. Accessed at: http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_23A1&prodType=table .

The Economic Research on Changes in Prevailing Wages and Construction Costs

The preponderance of economic research on prevailing wage laws indicates that wage standards are *not* associated with increased construction costs in any statistically significant way (Duncan, 2011a; Mahalia, 2008). The previously presented evidence provides an explanation of these findings. Proposals to repeal or weaken prevailing wage laws are motivated by the assumption that lower wages are associated with lower construction costs. This assumption is not supported by peer-reviewed research that is based on the examination of construction cost data and other publicly available information on the construction industry. On the contrary, as prevailing wage laws increase construction wage rates, the industry responds by utilizing more productive labor (and investing in worker training) and by using additional equipment. These changes improve efficiency, contributing to stable construction costs even as wages increase.

Duncan's current research on highway resurfacing projects examines the cost effect of a change in prevailing wages from union to "average" wage and benefit rates. For example, from at least the mid-1990s to April of 2002, prevailing wage and benefit rates for the detailed job classifications involved in highway resurfacing projects in Colorado were based on union rates. From April 2002 until the next prevailing wage survey in the fall of 2011, average wage and benefit rates prevailed. This change applied to 11 of the 13 detailed job classifications involved in highway resurfacing and represented an average 18 percent decrease in total hourly compensation for these jobs. Despite this substantial decrease in the overwhelming majority of the wages paid for highway resurfacing, there was no corresponding decrease in the cost of federally-funded resurfacing work relative to comparable state-funded projects (Duncan, 2015b).

Duncan's analysis of highway resurfacing projects in Colorado indicates that when contractors switch from federally-funded projects to state-funded construction, there is also no statistically significant difference in bid prices. All highway resurfacing projects in Colorado follow the same safety and quality standards, as well as anti-discrimination and disability policies, regardless of state or federal funding. Projects funded by the federal government also require adherence to Davis-Bacon and Disadvantaged Business Enterprise policies. When contractors switch from state to federally-funded projects, one additional difference is the payment of prevailing wages. However, this requirement is not associated with higher bid prices when projects of comparable size and complexity are compared. This finding illustrates that when contractors switch from projects that require prevailing wages to comparable projects that are not covered by the wage policy, there is no difference in bid prices (Duncan, 2015c).

Other researchers have also found that construction costs do not decrease when prevailing wage rates decrease, or when state-level prevailing wage laws are repealed. For example, Professor Wial (1999) examined the effect of a change in Pennsylvania's prevailing wage survey and wage determination. Before the survey change in the mid-1990s, union wage and benefit rates prevailed in most counties. After the change, union rates continued to prevail in some counties, but switched to lower rates in other counties. Wial's examination of these changes on school construction costs indicates that, while lower wage and benefit rates were intended to save taxpayers money, there was no measureable cost impact.

In an examination of construction costs in Kentucky, Michigan, and Ohio during periods in the 1990s when prevailing wage policies for school projects changed within these states, Professor Philips finds that there was no statistically significant difference in school construction costs associated with a change in prevailing wage policies. Professor Philips also reports that value added per construction worker, a measure of labor productivity, is 14 percent higher in states with prevailing wage laws. Construction job-related disabilities are 12 percent higher in states without prevailing wages and repeal of prevailing wages is associated with a substantial decrease in the kind of apprenticeships that are associated with future productivity growth (Philips, 2014).

Taken together, the studies examining the effect of decreases in or the elimination of, prevailing wages reveal that these changes are not associated with reduced construction costs. Why would this occur? As described previously, the research by Professors Blankenau and Cassou (2011) and Professors Balistreri, McDaniel, and Wong (2003) indicate that as construction wages decrease, so does the use of skilled construction workers as well as the use of equipment. Both of these changes tend to decrease construction worker productivity and increase the risk of worker injury. When prevailing wages are weakened or eliminated, construction worker productivity decreases in a way that increases construction costs— offsetting any intended savings.

Another approach to examine the effect of a change in construction wages within a jurisdiction is to take advantage of the “natural experiment” associated with the introduction of a prevailing wage policy. In the early 1990s, the Canadian Province of British Columbia introduced a prevailing wage standard that has been extensively examined. This policy was similar to many stronger state-level prevailing wage laws in the United States and also required apprenticeship training and supervision (Duncan et al., 2014). For example, Professors Bilginsoy and Philips compare the cost of building public schools before and after the introduction of the British Columbian wage policy and report that schools built under the wage regulations were no more expensive than schools that were not covered by the policy (Cihan & Philips, 2000).

Duncan, Philips, and Prus (2014) have examined the effect of the British Columbian policy on the cost and productivity of building schools. These researchers compared the cost of building public schools covered by the wage policy to the cost of building private schools that were not covered by the policy. Public schools were approximately 40 percent more expensive to build than comparable private schools both before and after the wage policy. One explanation of stable construction costs with the introduction of prevailing wages is that the productivity or efficiency of construction increases along with wage rates. These authors find evidence of this trend. For example, average efficiency for all public school construction in British Columbia was 95 percent during the early and mid-1990s. Construction efficiency on public schools covered by the first stage of the wage policy was 87 percent. Efficiency on projects covered by the expansion of the British Columbian wage policy, 17 months later, was 99.8 percent (Duncan et al., 2009). These results indicate that the introduction of this prevailing wage law was briefly associated with an interruption in the efficiency of construction. However, contractors adjusted and actually improved overall efficiency in a relatively short period of time after prevailing wage was introduced.

The results of these studies are consistent with a study by Philips and Kim (2009). In an examination of public works projects in five northern California cities (Palo Alto, Mountain

View, San Carlos, San Jose, and Sunnyvale) with different municipal prevailing wage laws, the authors find *no* evidence that wage policies affect the bid process or increase construction costs. The results do not support the notion that wage policies discourage competition from nonunion contractors or reduce the number of bidders on public projects. Additionally, these authors find no statistically significant differences between the winning bid and two measures of project costs (the engineer's estimate and the median bid). Their findings again indicate that prevailing wage laws are not associated with higher construction costs.

Not all studies report stable construction costs with the introduction of prevailing wages. Ms. Sarah Dunn and Professors Quigley and Rosenthal examine the extension of prevailing wages to the construction of subsidized low-income housing in California and report that construction costs increased from 9.5 percent up to 37 percent (Dunn et al., 2005). There are, however, several problems with the study. First, there is the issue of labor costs as a percent of total construction costs and the size of the estimated prevailing wage cost impact. The authors provide "rough" data specific to housing construction in selected California cities indicating that labor's share of construction costs range from 42 percent to 46 percent of total costs. Even if labor costs are 46 percent of total costs, it is unrealistic to assume that prevailing wages account for up to 37 percent of construction costs. The implication is that labor's share of total costs would fall from 46 percent to about 17 percent (0.46×0.37) if the wage law was repealed. This means worker incomes would be slashed by more than half, putting some construction worker near the minimum wage. Thus, this estimate for labor's share of total cost with repeal (17 percent) is unrealistically too low if the present figure is in fact 46 percent.

Second, the study is based on an examination of residential projects subsidized by the California Low Income Housing Tax Credit (LIHTC) and covered by the state prevailing wage law. The State of Minnesota's Office of the Legislative Auditor has criticized this report on the basis that the cost of the publicly-funded projects included in this study may have been influenced by prevailing wage laws and by other factors such as more exacting Housing and Urban Development (HUD) construction standards that also affect construction costs (Nobles, 2007). However, these additional factors are not considered separately from prevailing wage effects. The implication is that the cost effect is attributed to the prevailing wage policy when it is likely that the HUD standards and other characteristics contributed to increased costs.

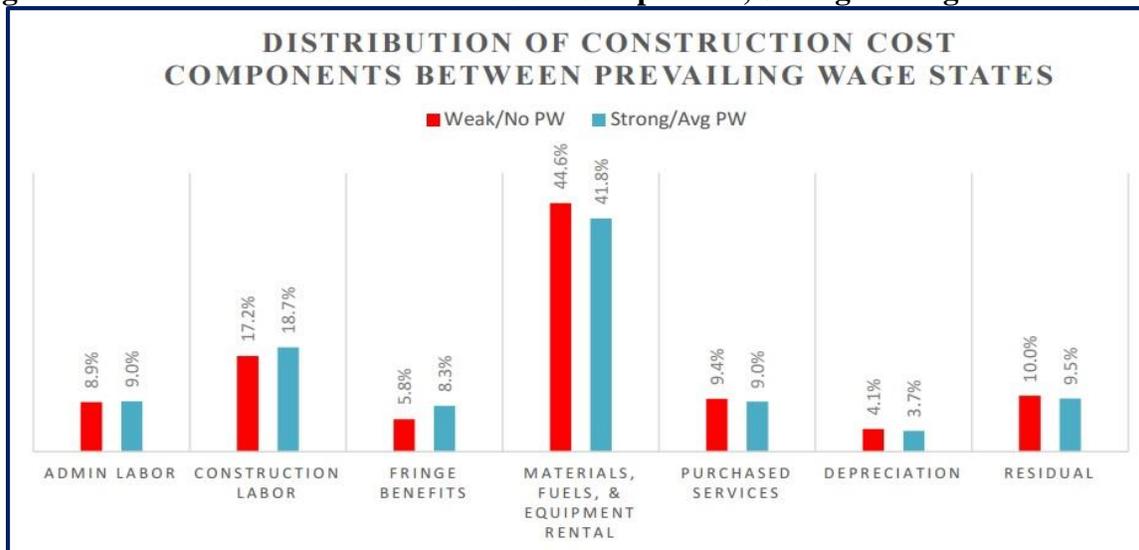
Third, the study is based on a sample of 205 residential projects, yet the authors can only identify if the prevailing wage law applies or does not apply to 175 of the projects. Yet the 30 unidentified projects are still included in the sample. An appropriate statistical test would be based on the sample of 175 projects because the inclusion of the unidentified projects may bias the cost estimate.

An additional study on Michigan's prevailing wage law by the Anderson Economic Group, LLC (AEG) claims that repeal could save the state \$225 million per year in school construction costs (Rosaen, 2013). In a critique of the report, however, Professor Philips has discredited the analysis. The AEG's report, commissioned by the Associated Builders and Contractors of Michigan, does not consider changes in worker productivity, materials costs or equipment used due to the presence of the prevailing wage law. Instead, it employs an outdated "wage differential" approach that again assumes there is no relationship between wages paid and work

Evidence suggests that Michigan’s current policy is “strong” compared to the policies of other states.² Armand Thieblot (1995) rated state-level prevailing wage laws based on factors including coverage thresholds, type of work excluded/included, and the determination of wage rates. Thieblot’s analysis graded Michigan’s prevailing wage policy as a “strong” law. Michigan’s law has remained “strong” since his paper because it continues to have no contract threshold requirements; apply to new construction, infrastructure alterations, and demolitions of public buildings and works; and cover mechanics, apprentices, teamsters, and laborers. In addition, 2014 data from the U.S. Department of Labor indicates that Michigan has the 13th highest rate of unionization in the private construction industry in the country (Hirsch & Macpherson, 2015). This lends further evidence that Michigan’s law can still be considered to be “strong.”

Relying on data from the *Economic Census of Construction*, it is possible to break the industry down into major cost components and examine differences between the two groups. Cost component differences between states with different prevailing wage laws are reported in Figure 2. The variance between the two groups of states is consistent with the differences economists expect when wages are higher or lower in an industry (or when prevailing wage laws apply and when they do not). The payment of prevailing wages is associated with both a higher labor cost and benefit share of total costs and a higher rate of in-state contracting. In the absence of prevailing wage laws, a contractor’s search for cheaper labor is more likely to result in the use of more out-of-area contractors that pay less than local market standards. Data from the *Economic Census of Construction* also indicates that value added per worker is 11 percent higher in states with strong or average prevailing wage laws. Data reported in Figure 2 suggest that when more productive workers are employed, the costs of materials and fuels are lower. The data also show that when construction worker wage and benefit costs are lower; contractor profits (reported as “residual income” in Figure 2) are higher.

Figure 2: Distribution of Construction Cost Components, Strong/Average vs. Weak/No



Source: *Economic Census of Construction, 2012*

² We define the strength of a law on the ability to protect local wages on public projects from the depressing influence of nonlocal contractors.

Clear differences between states with and without adequate prevailing wage laws are visible in Figure 2. The cost of construction labor comprises a smaller share of overall construction value in states with less-than-average prevailing wage laws (17.2 percent to 18.7 percent). This translates into lower earnings for construction workers in these states. Also, benefits payments are significantly lower in weak or no law states (5.8 percent to 8.3 percent). As Figure 2 elucidates, reductions in wages and earned benefits payments to these workers are offset by dramatic increases in the cost of materials use. Materials, fuels, and equipment rental costs are 44.6 percent of total costs in states with weak or no wage policy and are 41.8 percent in states with strong and average laws. Similarly, we see that states with less-than-average laws have slightly higher rates of depreciation. The balance of the differences in labor, materials, and services goes to firm owners as pre-tax residual earnings in states with weak or no laws (10.0 percent compared to 9.5 percent in states with average or strong laws). We found a similar distribution of cost components between the two groups of states based on data from 2007 *Economic Census of Construction* (Duncan & Lantsberg, 2015).

In addition to the differences reported in Figure 2, states with strong or average prevailing wage laws have more construction work completed by state-resident contractors. Data from the *Economic Census of Construction* indicates an approximate 2 percentage-point difference, in terms of the total value of construction, between the two groups of states. Near Michigan, this difference is even greater: a 7 percentage-point gap between the two groups of states in the Great Lakes and northern Plains region. In this analysis, the 2 percentage-point difference is utilized to generate a conservative impact, implying that an additional 2 percent of the total value of construction in Michigan would be performed by out-of-state contractors if prevailing wage is repealed (Census Bureau, 2015). This amounts to an approximate \$672.7 million dollar leakage out of the Michigan economy. This also illustrates that, with the current prevailing wage law, state tax dollars and other construction funds are used to employ Michigan businesses and workers in a manner that increases economic activity. By weakening or repealing the law, government can use its massive purchasing power to depress wages in a community and hire workers from other states, who would then take their earnings with them when they go back to their local economies.

States with strong and average prevailing wage laws also differ in many other policy areas compared to those with weak and nonexistent ones. Prevailing wage laws are part of a set of interrelated institutional arrangements, including a stronger emphasis on apprenticeship training, greater workplace safety, higher rates of health insurance and retirement benefits, relatively higher unionization rates and wages that contribute to the “high road” in the construction industry (Philips, 2014; Manzo & Bruno, 2014; Dickson Quesada et al., 2013). On the one hand, one system emphasizes high productivity rewarded by good middle-class wages to support working families; contrarily, the other approach seeks to use government spending to undercut privately-established wages in a community to achieve prosperity through lower worker income. On the former path, the construction industry provides the skills needed to build the structures and infrastructures for a growing, technologically sophisticated, and competitive Michigan economy. Prevailing wage laws establish the underlying legal framework for this type of construction industry and economic benefits.

In contrast, the construction “low road” does not have the same legal basis. In states with weak or no prevailing wage laws, there are lower levels of training and productivity and higher rates of job-related injury. Wages and benefits are lower with evidence suggesting that there is greater reliance on public assistance, particularly related to uncompensated health care costs (Waddoups, 2005; Manzo & Carroll, 2014).

Evidence reported in Figure 2 is illustrative of this problem. Without prevailing wages, worker benefits are lower and contractor profits are higher. With lower health benefits, the costs are more likely to be shifted to taxpayers when construction workers cannot pay for their healthcare. Without adequate prevailing wages and benefits, taxpayers are at risk and in fact *subsidize* the profits of contractors. In addition, under these conditions, the construction industry neither attracts nor produces the human capital skills necessary to contribute to a broadly competitive state economy. State and local governments are the single, largest purchasers of construction services in Michigan, accounting for 14.4 percent of the total value of construction in Michigan in 2012 (Census Bureau, 2015). By virtue of this position, public expenditures set the standard for the state’s construction industry. It is up to the people of Michigan and the Michigan Legislature to determine which road the state’s construction industry will follow.

The Economic Impacts of Prevailing Wages

The economic impact analysis is straightforward. First, prevailing wage laws are associated with a greater use of in-state contractors. With a weaker law, Michigan’s public and private construction funds will leak out of the state’s economy as more out-of-state contractors and construction workers are employed. This leakage will ripple throughout the economy, shrinking tax revenue and reducing employment in a wide array of industries (Duncan, 2011b; Prus, 1996; Manzo et al., 2014).

Second, changes in prevailing wages alter other forms of spending in the construction industry. As previously noted, states with strong or average prevailing wages have relatively higher labor costs and lower material costs (Duncan & Lantsberg, 2015). A weakening or repealing of prevailing wage laws is associated with shifting labor income and spending on benefits to industries supplying construction materials. The net effect of this spending shift depends on the magnitude of the impacts of each component.

The IMPLAN Economic Impact Software

The economic impact analysis is based on the IMPLAN software and data for the state of Michigan to estimate the ripple effect, or “multiplier,” of changes to the state’s prevailing wage standard. Specifically, this software is used to estimate the impact on state-level economic activity, employment, and tax revenue. IMPLAN (Impact analysis for PLANning) was originally developed by the U.S. Department of Agriculture to assist the Forest Service with land and resource management planning. The Minnesota IMPLAN Group (MIG, Inc.) started work on the data-driven model in the mid-1980s at the University of Minnesota. The software was privatized in 1993 and made available for public use. The software contains an input-output model with data available at the zip-code, county, state, and national levels.

Input-output analysis measures the inter-industry relationships within an economy. Specifically, input-output analysis is a means of measuring the market transactions between businesses and between businesses and consumers. This framework allows for the examination of how a change in one sector affects the entire economy. In this way, input-output analysis is able to analyze the economic effects of policy alternatives by measuring the multiplier, or ripple effect, as an initial change in one industry stimulates further changes in transactions between other businesses and households. The results reported in this study are based on industry figures from the 2012 *Economic Census of Construction*, income distributions in the 2011 5-year *American Community Survey*, and 2007-2009 health care industry spending proportions from the *National Health Expenditures Survey*. IMPLAN deflators are used to adjust for changes in prices over time. The results are reported in constant 2015 dollars.

Economic Impact Results

The following impact results are based on the differences in labor and materials costs, benefits, and contractor profits reported in Figure 2. With respect to the data reported in Figure 2, the impact is based on spending changes in Michigan's construction industry if the state were to switch from the characteristics of the typical state with a strong or average prevailing wage law to the average state with a weak or no prevailing wage policy. To match the spending categories reported in the *Economic Census of Construction* with the industry classifications used in IMPLAN, data from the *American Community Survey* and from the *National Health Expenditures Survey* are utilized. For example, a repeal of prevailing wages will affect the allocation of health and retirement benefits and the distribution of construction worker income. Data from the *American Community Survey* addresses this income issue (Census Bureau, 2012). We use several publicly-available sources to determine how changes in benefits affect healthcare and financial industries (Duncan & Lantsberg, 2015). As a consequence of the methods used in the analysis, this impact study is straightforward, objective, data-driven, and reproducible.

The data used in the economic impact analysis are reported in Table 1 and indicate that, with a weaker law, an estimated \$672.7 million in construction value would be completed by out-of-state contractors. Construction worker income and benefits would decrease by nearly one billion dollars. Worker productivity is 11 percent lower in states with weak or no prevailing wage laws. Employment of less skilled and productive workers is associated with increased materials and fuels expenditures. This inefficiency would, however, have a positive effect on economic activity, as spending on materials and fuels would increase by about \$781.3 million. Economic activity due to this type of inefficiency is undesirable socially and economically. It is included in the economic model because this spending is associated with a change in prevailing wage policy. Finally, proprietor (or contractor) profit income would increase by approximately \$222.5 million without a prevailing wage law. There would be "winners" and "losers" associated with a change in the state's prevailing wage law. While the combined effect of all of these spending changes is -\$630.8 million, the overall net effect of the spending changes on the entire Michigan economy depends on how closely-related each category is to other industries in the Michigan economy.³ In this study, the net effect is determined by the IMPLAN economic impact software.

³ We measure the change in construction industry spending (materials and out-of-state contractors) through an industry impact in IMPLAN. The changes in wage and profit income are addressed through labor and household

Table 1: Total Construction Industry Changes Associated with PWL Repeal in Michigan

Category	Spending Change
Use of Out-of-State Contractors	-\$672.7 million
Reduced Construction Worker Income, Health, and Retirement Benefits	-\$962.0 million
Increased Materials, Fuels, etc. Use	+\$781.3 million
Increase Proprietor (Contractor) Income	+\$222.5 million
Total	-\$630.8 million

Economic impact results are reported in Table 2. The net spending reduction of \$630.8 million in the categories reported in Table 1 would result in a \$1.70 billion reduction in economic activity in Michigan. This impact is 0.38 percent of state GDP in 2014 (BEA, 2014). The timing of this impact would depend on how long it would take the Michigan construction industry to transition to the characteristics of the typical state with a weak prevailing wage law. However, once this adjustment occurs, the reduction in economic activity would be experienced every year. A \$1.7 billion reduction in economic activity would be associated with the loss of over 11,000 jobs. This represents approximately 0.26 percent of current, nonfarm employment in Michigan (BLS, 2015).

Table 2: Total Economic Impacts of Repealing Michigan's Prevailing Wage Law

Impact Category (2015 dollars)	Direct Effect	Multiplier	Total Economic Impact
Construction Industry Spending Change	-\$630.8 million	2.70	-\$1.70 billion
Employment	-3,788 jobs	2.99	-11,320 jobs

Source: IMPLAN.

Tax revenue would decrease with the reduction in economic activity (Table 3). At the state and local government levels, sales tax revenue and property tax revenue would both decrease by over \$6 million. Income taxes collected by the state government would decrease by \$10.5 million. The total decrease in state and local tax revenue would exceed \$28 million, an effect that would occur yearly. In addition, prevailing wage repeal would reduce Michigan's combined federal income tax contributions by \$113.3 million.

income impacts. This type of impact captures the effect of differences in spending between higher and lower income categories. To capture the effect of changes in benefits spending, we use the institutional impact in IMPLAN.

Table 3: State and Local Tax Impacts of Repealing Michigan’s Prevailing Wage Law

Impact Category (2015 dollars)	State and Local Tax Impact	Federal Tax Impact
Sales or Excise Tax Revenue	-\$6.1 million	-\$1.0 million
Property Tax Revenue*	-\$6.2 million	N/A
Personal Income Tax Revenue	-\$10.5 million	-\$39.9 million
Social Insurance Tax Revenue	-\$0.4 million	-\$65.3 million
Other State and Local Tax Revenue**	-\$4.9 million	-\$7.1 million
Total Tax Revenue Change	-\$28.1 million	-\$113.3 million

*Source: IMPLAN. *Includes business and residential property taxes. **Includes taxes on motor vehicle registrations, fishing and hunting licenses, severance taxes, etc.*

The total economic impact is the sum of all industry-level impacts reported by IMPLAN. To illustrate the effect of repealing Michigan’s prevailing wage law on industries in the state, Table 4 reports impacts for all aggregated economic sectors. The impacts are sorted by employment loss and include corresponding decreases in business revenue, or industry GDP. With a weaker or nonexistent prevailing wage law, nearly all industries in Michigan would experience losses in output. Construction, the directly-impacted sector, would suffer approximately 4,000 jobs lost and Michigan contractors would see revenues decline by nearly \$730 million – predominately the result of more projects being awarded to out-of-state businesses.

The reduction in construction worker employment, income, and benefits would affect industries that are not related to construction, however. Health care and personal services would lose nearly 3,400 jobs and \$375 million in revenues as construction worker health benefits fall. Decreases in worker income result in shrinking consumer demand, which is reflected in the employment change estimates for restaurants and bars (-665 jobs); wholesale trade (-252 jobs); arts, recreation and, accommodation services (-202 jobs); and retail trade (-192 jobs). In addition, the reduction in economic activity associated with repealing the prevailing wage law would also depress housing values. Michigan’s real estate industry would lose approximately \$105 million, resulting in the layoff of 235 additional workers.

The only sector that would benefit from weakening or repealing the state’s prevailing wage law is manufacturing. With the use of less productive construction workers, materials and fuels costs are higher. Therefore, businesses that are involved in, or are related to, the production of construction materials would experience increased revenue. Manufacturing jobs would be expected to marginally increase as the industry’s revenues rise by about \$50 million. However, the employment and revenue gains of manufacturing are very small compared to the losses experienced by every other industry that is harmed by eliminating prevailing wage laws. Under the economic principle of “Pareto optimality,” this minor improvement in manufacturing at the expense of all other sectors is inefficient.

Table 4: Impact of Repealing Prevailing Wage on All Sectors of the Michigan Economy

Industry Category	Employment Change (Jobs)	Revenue Change (Millions)
Total Impact	-11,320	-\$1,701.4
Construction (direct, indirect, and induced)	-4,006	-\$729.4
Health care and personal services	-3,356	-\$375.3
Professional, business, and legal services	-805	-\$81.6
Restaurants and bars	-665	-\$36.0
Financial activities (excluding real estate)	-603	-\$126.9
Other services	-490	-\$31.4
Government	-366	-\$31.6
Wholesale trade	-252	-\$59.0
Real estate	-235	-\$104.9
Arts, recreation, and accommodation services	-202	-\$15.1
Retail trade	-192	-\$91.2
Educational services	-145	-\$8.9
Transportation and warehousing	-98	-\$22.2
Information and communications	-71	-\$27.2
Agricultural, fishing, and hunting	-50	-\$4.2
Mining, energy, and utilities	+1	-\$6.2
Manufacturing	+217	+\$49.9

Source: IMPLAN.

CONCLUSION

The economic impact results illustrate the benefits of Michigan’s prevailing wage law.

This policy is not solely of interest to the construction industry. Rather, it is directly related to the state’s business and economic development. For example, under Michigan’s current policy, more state tax funds are used to employ Michigan contractors and construction workers. The spending of these parties ripples through the economy generating additional economic activity in other industries and more tax revenue for Michigan residents.

The results of this report indicate that weakening or repealing Michigan’s prevailing wage law is not in the best interest of taxpayers. Repealing prevailing wage will not reduce the cost of public construction, but will reduce the level of economic activity and will result in tax revenue

declines. By having no effect on total construction costs but resulting in less available tax revenues, the constitutional requirement for a balanced budget means that the state will have to either reduce capital construction budgets or cut funding for other budget priorities.

Ultimately, the prevailing wage for publicly-financed construction projects is a positive economic development tool providing substantial benefits to workers, contractors, families, and the overall economy. Repeal would result in job losses and would reduce tax revenues in Michigan. Prevailing wage supports a dynamic, “high road” economy that promotes worker productivity and boosts economic activity.

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