The Facts About Prevailing Wage

Compiled by:

Ohio State Building and Construction Trades Council

A Race To The Bottom

AGC

BFCA

ASSOCIATED GENERAL CONTRACTORS OF OHIO · www.agcohio.com
1755 Northwest Blvd · Columbus, OH 43212 · Ph (614) 486-6446 · Fax (614) 486-6498

ABOUT AGC OF OHIO

The Associated General Contractors of Ohio is the largest statewide commercial building association in Ohio. The association's membership includes both union and open shop (nonunion) general contractors, as well as quality subcontractors and suppliers. AGC of Ohio is a full-service chapter of AGC of America, the nation's oldest and largest commercial construction association, and its Ohio structure include seven self-funded, self-governed divisions located in the major metropolitan markets throughout the state.

With its structure, AGC of Ohio and its divisions represent hundreds of commercial contractors that employ thousands of craft workers. AGC and its members strive to improve the industry by promoting fair practices, working with public and private owners to stimulate construction markets, assisting with labor relations, and providing education and training services… all while upholding the AGC principles of skill, responsibility and integrity.

THE REPEAL OF PREVAILING WAGE: A Race to the Bottom

Prevailing Wage & Public Construction Facts:

- Ohio Public Works awards are based upon lowest, responsive responsible bid.
- Virtually no qualification standards or responsibility standards exist for public building construction.
    - Passing Construction Reform would provide for Qualification standards for a public improvement projects.
    - Construction Reform also contains Responsible Contracting criteria to protect the public owner, the Ohio taxpayer, and construction employees
- Historically, the "Construction Employee" has been a significant employment classification.
- Ohio's Prevailing Wage Law was enacted in the 1930's – largely to provide stability in Ohio's construction workforce and to prevent traveling, out-of-state construction groups from undercutting Ohio's wages and construction workforce. (These same forces can be found today in the storm-chasing groups that invade Ohio after wind and storm damage to fix roofs, windows and such in the residential markets.)
- Ohio Prevailing Wages are established by reference to locally collective bargaining agreements between an employer group and the respective construction trade unions.
    - A rural area's prevailing wage is often determined by the collective bargaining agreement for the closest urban area when there is no local collective bargaining rate.
- The current threshold for the application of prevailing wage is $78,258 for new construction and $23,447 for renovation.

- Commercial and public construction contractors increasingly compete against firms that utilize questionable employee classification practices.
    - An increasing number of unscrupulous contractors are misclassifying employees as "Independent Contractors" on public works projects. The employee is often given a federal #1099 form to self-report wages for federal/state/local taxes and related employee/employer funds. These are rarely reported. All levels of government are denied precious monies, including the very expensive (for construction companies) Bureau of Workers Compensation and Unemployment compensation funds.
    - The number of "undocumented" (illegal) workers on public projects throughout the state of Ohio is growing. These workers are often paid in cash if they are not treated as Independent Contractors. The same abuse to our system occurs as in the preceding Independent Contractor issue.
    - Existing Ohio construction companies abiding by state and federal laws cannot compete against such contractors.
- Enforcement of the current law is spotty, arbitrary and frequently confusing. Minor violations result in superfluous and significant expense to employers through legal fees and inequitable settlements.
- What projects are covered by prevailing wage law has become very confusing over the past decade. The uncertainty often leads to conflict and unintentional violations.
- Both Union interests and Non-Union interests have sparked an escalating, expensive and cumbersome filing procedure for violations, alleged violations and minutia. Law firms are the only ones making out in these skirmishes.

Repeal of Ohio's Prevailing Wage would quickly lead to the following:

- There would be a "free-fall" to the bottom for construction workers wages and benefits. Employee benefits – specifically Health Insurance and Pension benefits will disappear first, followed quickly by a substantial decline in wages.
    - The state of Ohio and all levels of government will experience a tremendous loss of income tax revenue.
    - Ohio Unemployment and Workers' Compensation will also lose significant revenue due to decreased funding.
    - If contractors cannot afford to pay health care benefits, this will lead to increased health care costs for taxpayers if and when uninsured workers or their families need expensive health care assistance.
    - With a significant decrease in wages, construction employees will have much less disposable income. This would negatively affect Ohio's economy. State universities could also be affected as working class families will have a more difficult time assisting their children with tuition.
    - Many construction workers cannot work during the winter months due to Ohio's harsh weather. With less compensation, they will not be able to afford to work in Ohio due to the combination of low wages and seasonal aspect of the industry.
- "Independent Contractors" and "Undocumented Workers" will proliferate and dominate public construction projects.

- All legitimate Ohio construction employers will be negatively affected.
    - Ohio contractors will experience increased competition from out of state contractors – especially those utilizing questionable employment practices (independent contractors/undocumented workers). Ohio contractors will not be able to get "low enough, quick enough" to compete.
    - Because legitimate Open Shop (non-union) Employers will be caught in the "race-to-the-bottom," they will reduce wages and benefits to remain competitive and to counter the influx of out-of-state forces.
    - Union Employers will be faced with changing their management style and ridding themselves of union agreements.
    - Legitimate construction companies will ultimately pay more into Employer funds as the independent contractor and undocumented worker proliferates, thus making them even more non-competitive with unscrupulous employers.
    - Many Ohio Union and Open Shop Employers will go out of business.
- Quality Construction Employees will leave Ohio in search of adequate compensation for their skilled trade experience and knowledge.
    - The best mechanics (construction journeymen) living within 60 miles of the state border will be gone within a year as they will work in our surrounding competing states – the remaining workers will follow over a 5-10 year period.
- Construction Training (Apprenticeship) Programs will disappear as there will be no funding mechanism to train or demand for skilled workers.
    - Apprenticeship programs ensure craft workers are well trained utilizing both classroom and hands-on training. They provide a means for knowledge and skills to be passed down from generation to generation. Without apprenticeship programs, Ohio will lose its skilled workforce – and it will be extremely difficult to get it back over time.
    - Safety is directly tied to training. Safe practices on jobsites will diminish as the trained workforce disappears.
- Public Owners will enjoy a short term reduction in their project costs, but the availability of local skilled labor will suffer. As the locally trained workforce diminishes, public owners will ultimately pay more.
    - Quality standards on public construction projects will experience a steep downward spiral.
    - Project life cycle costs will increase due to poor construction. Costs for maintenance of public buildings will increase as the overall quality has decreased. Likewise, the life-time of the public building will decrease.
    - As private construction regains momentum public works will be a market that responsible contractors – both Union and Non-Union will avoid.
    - Employee safety standards will also deteriorate on public works projects leading to increased injuries and additional burden on the Ohio Workers Compensation program.
- Private Owners will also apply downward pressure on wages and benefits while trying to balance a high quality project with lower overall labor costs.
- The Public Owner and the Ohio Taxpayer will suffer the greatest.
- In short, everyone will eventually be a loser – particularly the Ohio taxpayer.

THE REPEAL OF PREVAILING WAGE:
A Race To The Bottom

I. About the organized construction industry:

A. Employers employing 90,000 construction workers in fifteen crafts.

B. Labor organizations representing these workers, as well as 40,000 retirees.

C. These employers and labor organizations negotiate agreements that keep people off of government assistance.[1]

1. Health Insurance. Because of transitory nature of construction work, merit shop construction workers lose employer-provided health care insurance when they are laid off or change employers. Organized construction employees have negotiated health care plans that ensures coverage during periods of unemployment and when workers switch employers.

2. Pension Plans. Organized construction employees have pension plans that are "portable" in the sense that they follow workers from employer to employer. That helps ensure that these workers become vested despite having many employers, each for perhaps very short periods of time.

D. These employers and labor organizations fund apprenticeship training.

1. In the organized construction industry, apprenticeship training is borne by signatory contractors employees through an hourly contribution to a training fund used to pay for training facilities, tools and equipment, instructors and a training coordinator. Open shop apprentices typically pay a higher share of the training costs through tuition payments and lower wages.[2]

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[1]Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 4 ("In addition, with repeal [of the prevailing wage law], fewer construction workers are likely to receive paid health insurance. This could cause publicly-financed health care costs to rise, increasing the burden on state budgets."). See also Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 102 ("It has been reported that benefit payments to union construction workers are substantially higher than to non-union workers (Petersen, 2000). Petersen reported that in 1992, health, welfare and pension plans in the construction industry paid $13.2 billion in benefits to active construction workers and retirees, of which the vast majority was paid to union members. Peterson further reports that the benefits paid per worker for union construction was $12,798, while the benefits paid per worker for nonunion construction was $434. * * * [U]nionized benefit programs account for 88 percent of all benefits in the industry. It is clear that union membership is a primary determinant of the probability of receiving benefits in the construction sector.") (citing Petersen, *Health Care and Pension Benefits for Construction Workers: The Role of Prevailing Wage Laws,* 39 Industrial Relations 246 (2000).

[2]Philips and Bilginsoy, *Apprentice Training in Ohio* at 3. See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 10 ("Prevailing wage statutes provide incentives to maintain an effective apprenticeship training system in construction; these apprenticeship programs guarantee that construction employees have the needed skills and technical capacity to earn family supporting wages.").

2. The organized construction industry trains three out of every four apprentices.[3]

3. In Ohio, the latest data available indicates that jointly-trusteed programs, *i.e.,* union apprenticeship programs, trained 3866 of the 4600 apprentices (83.9%) who had graduated, as of 2003, from apprenticeship classes that commenced between 1996 and 1998. Nearly 60% of the apprentices who begin apprenticeship training in jointly-trusteed programs graduate, while less than 40% in non-jointly trusteed programs do.[4]

4. Jointly-trusteed programs graduate more apprentices than non-union programs in every construction occupation. Non union programs provided only 6% of all graduating pipefitter apprentices, 8% of all graduating carpenter apprentices, 7% of all graduating sheet metal apprentices, only 6% of graduating painter apprentices, and 17% of all graduating bricklayer apprentices. No operating engineers or iron workers graduated from the non-union entering classes of 1989, 1990 and 1991 in Ohio.[5]

II. Prevailing Wage Law Does Not Increase Cost.

A. "The problem for groups who urge wage law repeal to save taxpayers money is that they fail to offer any *credible* study that backs up their savings claims."[6]

B. Claims of huge savings—usually between 20% and 30%, but sometimes as high as 40%—are simply not credible. In Ohio, according to the U.S. Census of Construction Industries, wages and benefits account for only 27% of total construction project costs.[7]

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[3]Philips, *Kentucky's Prevailing Wage Law: Its History, Purpose and Effect* at 70 (October, 1999). See also Bilginsoy, *Apprenticeship Training in the U.S. Construction Industry* at 22 (Sept., 1998) ("[T]here is a wide discrepancy between the performances of the apprentices enrolled in the two types of programs. The majority of apprentices are in the joint programs, and an overwhelming number of the apprentices who reach journey-level status are trained in the joint programs. * * * The life span of non-joint programs is also much shorter than that of the joint programs."); Loomans & Seaman, *Apprenticeship Utilization in Washington State* at 9 (based on statistics from 1996-2001, 96% of apprentices achieving journey-level status in Washington were from union apprenticeship programs).

[4]See attached table.

[5]Philips & Bilginsoy, *Apprenticeship Training in Ohio* at 11.

[6]*Why Wage Law Repeal Will Not Save $$,* Cockshaw's Construction Labor News & Opinion at 2.

[7]Philips, *Wages and Benefits as a Percent of Net Total Costs in the Construction Industry: Evidence from the U.S. Census of the Construction Industry with a Focus on Ohio* at 20. See also Philips, *Kentucky's Prevailing Wage Laws* (1999) at 51 ("For all construction in Kentucky, labor costs—including wages, benefits and payroll taxes—run around 26% of total construction costs."); Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 14

C. "An overwhelming preponderance of the literature shows that prevailing wage regulations have no effect one way or the other on the cost to government of contracted public works projects. And as studies of the question become more and more sophisticated, this finding becomes stronger, and is reinforced with evidence that prevailing wage laws also help to reduce occupational injuries and fatalities, increase the pool of skilled construction workers, and actually enhance state tax revenues."[8]

D. The 2002 LSC Report is flawed.[9]

1. Weisberg, *Analysis of Regression and Surveys in Ohio LSC Report on S.B. 102 on Claimed Cost Savings from Exempting School Construction from Prevailing Wage Requirements* (2002) at 11. In a February 12, 2005 Executive Summary of his report, Professor Weisberg stated: "the effect of prevailing wage on costs is NOT statistically significant in any of the LSC Report's equations. In other words, the best statistical evidence from the LSC's own analysis is that prevailing wage has NO effect on school construction costs." Weisberg, *Executive Summary* (Feb. 12, 2005) at 1.

2. LSC acknowledged the flaws in its report. James Burley, the Legislative Services Commission Director, told reporters that he

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("According to the Census of Construction, labor costs, including benefits, on all construction were 26.2% of total costs in 1987 and decreased to 21.2% by 1997.").

[8]Mahalia, *Prevailing Wages and Government Contracting Costs: A Review of the Research*, EPI Briefing Paper #215 at 9 (July 8, 2008). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 12 ("[R]esearchers have produced evidence that the use of low-wage labor in construction does not generate corresponding savings because low-wage workers are typically less skilled and require more supervision.") (citation and endnote omitted); Azari-Rad, Philips, & Prus, *Making Hay When It Rains: The Effect Prevailing Wage Regulations, Scale Economies, Seasonal, Cyclical and Local Business Patterns Have On School Construction Costs,* 27 J. of Educ. Fin. 997, 1012 (2002) ("[T]here is no measurable difference, controlling for other factors, in public schools built with and without prevailing wage regulations."); Prus, *The Effect of State Prevailing Wage Laws on Total Construction Costs* (1996) at 11; National Alliance for Fair Contracting, *Wages, Productivity, and Highway Construction Costs* (1995) at 3 ("[T]here is no measurable cost difference between similar structures as a result of prevailing wage requirements."); Construction Labor Research Council, *The Impact of Wages on Highway Construction Costs: Updated Analysis* (2004) at 2-3; Philips, *Square Foot Construction Costs for Newly Constructed State and Local Schools, Offices and Warehouses in Nine Southwestern and Intermountain States 1992-1994* (1996) at 21-22; Philips, *Kentucky's Prevailing Wage Law: Its History, Purpose and Effect* (1999) at 66; Bilginsoy & Philips, *Prevailing Wage Regulations and School Construction Costs: Evidence from British Columbia,* 24 J. of Educ. Fin. 415; Philips, *Kansas and Prevailing Wage Legislation* (1998) at 18-19, 21; Prus, *Prevailing Wage Laws and School Construction Costs: An analysis of Public School Construction in Maryland and the Mid Atlantic States* (1999) at 13-14; Philips, *A Comparison of Public School Construction Costs In Three Midwestern States that Have Changed Their Prevailing Wage Laws in the 1990s* (2001) at 12; Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 40 ("The results of this analysis indicate that there is no statistically significant difference in total construction costs between similar structures as a result of a state having a prevailing wage statute. Therefore, the repeal or modification of prevailing wage laws will not result in substantial costs savings as alleged by proponents of repeal or modification of prevailing wage law.").

[9]*S.B. 102 Report: The Effects of the Exemption of School Construction Projects from Ohio's Prevailing Wage Law* (Legislative Serv. Comm'n, May 20, 2002) (LSC's "statistical regression analysis" showed that the prevailing wage exemption for school construction saved 10.7% on all school construction, but only 1.2% on new construction, which was far less than proponents of the exemption had claimed).

N Victor Goodman
Mark D. Tucker
BENESCH
Friedlander Coplan & Aronoff LLP
Attorneys at Law

"did not dispute Weisberg's analysis." Candisky, *Union studies dispute prevailing-wage claim,* Columbus Dispatch (July 21, 2002).

3. Professor Weisberg's conclusions have been confirmed by researchers at the University of Missouri. Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 20 ("In short, the results of this [LSC] study are empirically meaningless.").

III. Repeal of the Prevailing Wage Law Would Have An Adverse Impact.

A. Wages will be reduced—not just on public works, but on all construction.[10]

B. Health care and pension benefits will be reduced across the construction industry.[11]

C. Apprenticeship training will be reduced.[12]

D. On-the-job injuries and fatalities will likely increase.[13]

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[10]Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 2 ("In states which repealed prevailing wage laws, average earnings dropped for all construction workers—union, non-union, those working on public projects, and those working on private projects. Repeal itself caused an average decline of $1,350 in earnings (5.1% of construction income)."). See also Philips, Kansas and Prevailing Wage Legislation (1998) at 5 (After Kansas repealed its prevailing wage law in 1987, "[w]age incomes in Kansas construction fell by 10% not just on public works but across all construction."); Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 104.

[11]U.S. Bureau of Labor Statistics, *National Compensation Survey: Fee-for-Service Plans,* Program Perspectives Vol. 2, Issue 5 at 2 (Oct. 2010) (union workers are more likely to have access to employer-provided health care benefits than non-union workers and to have lower deductibles). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 4 ("[W]ith repeal [of the prevailing wage law], fewer construction workers are likely to receive paid health insurance. This could cause publicly-financed health care costs to rise, increasing the burden on state budgets."); Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 106. See also Philips, *Kansas and Prevailing Wage Legislation* (1998) at 5; Philips, *Kentucky's Prevailing Wage Law: Its History, Purpose and Effect* (1999) at 92; Petersen, *Health Care and Pension Benefits for Construction Workers: The Role of Prevailing Wage Laws,* 39 Industrial Relations 246, 261 (2000).

[12]Philips, *Kansas and Prevailing Wage Legislation* (1998) at 5 (After Kansas repealed its prevailing wage law in 1987, "[a]pprenticeship training in Kansas construction fell by 38% after repeal. Minority apprenticeship training in Kansas fell by 54%."). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 4 ("Current proposals to eliminate prevailing wage statutes threaten the stability of the apprenticeship training system. This system ensures a skilled labor force and provides minorities with increased access to construction jobs. * * * [M]inority access to construction training in repeal states dropped 22%."); Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 112; Bilginsoy, *Wage Regulation and Training: The Impact of State Prevailing Wage Laws on Apprenticeship* (2003); Philips, *Square Foot Construction Costs for Newly Constructed State and Local Schools, Offices and Warehouses in Nine Southwestern and Intermountain States 1992-1994* (1996) at 8; Philips, *Kentucky's Prevailing Wage Law: Its History, Purpose and Effect* (1999) at 82.

[13]Philips, *Kansas and Prevailing Wage Legislation* (1998) at 45 (After Kansas repealed its prevailing wage law, on-the-job injuries in the construction sector increased 19% and serious injuries increased 21.5%). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 3 ("In states that have repealed prevailing wage laws, occupational injuries have increased. This results in higher workers' compensation costs. Serious construction injuries increased in the states where prevailing wage laws were repealed. * * * This increase in injuries is due to a combination of factors—the use of inexperienced workers, a decline in training and cut-throat competition."); Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 120; Philips, *Kentucky's*

N Victor Goodman
Mark D. Tucker
BENESCH
Friedlander Coplan & Aronoff LLP
Attorneys at Law

E. Productivity in the construction industry will be reduced and the quality of construction will go down.[14]

F. The State and local governments will lose income and sales tax revenue[15] and face increased demands on public services,[16] resulting in an overall adverse impact on the state budget.[17]

Prevailing Wage Law: Its History, Purpose and Effect (1999) at 86; Waitzman, *Worker Beware: The Relationship Between the Strength of State Prevailing Wage Laws and Injuries in Construction, 1976-1991* (1996).

[14]Kelsay, Wray, & Pinkham, *The Adverse Economic Impact from Repeal of the Prevailing Wage Law in Missouri* (2004) at 124 ("[W]e conclude that at least for the time period 1980-93, any savings due to lower wages that might have been achieved in the absence of prevailing wage legislation were more than offset by lower productivity that accompanies payment of lower wages."). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 4 ("Elimination of prevailing wage statutes leads to increased costs associated with the use of low-wage workers. Lower construction wages in repeal states have led to reduced levels of worker skill and efficiency, higher maintenance costs and a dramatic increase in project cost overruns.").

[15]Philips, Mangum, Waitzman, & Yeagle, *Losing Ground: Lessons from the Repeal of Nine "Little Davis-Bacon" Acts* (1995) at 17 ("The tax revenue losses that result from lower construction wage levels are surprisingly large. Whatever the source of this earnings decline among construction workers, states with income taxes have lost tax revenues as a result of this decline in taxable income among construction workers. And, because this lost income means lost purchasing power, states that have repealed their prevailing wage laws have also lost some sales tax revenues. * * * Adding these two losses and bringing them to 1995 values using the consumer price index yields an estimated loss of $8.2 million in state taxes in Utah in 1991 evaluated in 1995 dollars."). See also Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 2 ("The decrease in wages to construction workers due to repeal of wage standards results in a major loss of tax revenue to state governments. In Wisconsin, repeal of the federal wage statute, the Davis-Bacon Act, would lead to a $11.6 million annual loss in tax revenues. Repeal of the state statutes in addition to the federal law would lead to an overall loss of $23 million.").

[16]Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 9 ("[R]epeal of prevailing wage laws raises costs to taxpayers in other ways beyond the simple loss of state tax revenue. Use of low-wage labor on construction projects also imposes costs for medical care and other services needed by employees without benefits. States without prevailing wage laws experience escalated demands on public services, as low-wage workers lacking health care coverage and other benefits increasingly depend on publicly provided services. ").

[17]Belman & Voos, *Prevailing Wage Laws in Construction: The Costs of Repeal in Wisconsin*, Institute for Wisconsin's Future (Oct. 1995) at 3 ("Repeal of the prevailing wage laws would hurt, not help, the Wisconsin state budget. This study shows that the decline in state income and sales tax revenues would exceed the minimal savings in construction costs to the state derived from decreasing worker wages. ").

Distribution of New Apprentices Registered in Ohio Apprenticeship Programs between 1996 and 2003

	No. of Apprentices	%
Joint Programs	20350	78.0
Non-joint Progran	5730	22.0
All Programs	26080	100.0

New Apprentices Registered in Ohio Apprenticeship Programs between 1996 and 2003 (by gender)

	No. of Apprentices	Male	%Male	Female	%Female
Joint Programs	20350	19574	96.2	776	3.8
Non-joint Progran	5730	5603	97.8	127	2.2
All Programs	26080	25177	96.5	903	3.5

New Apprentices Registered in Ohio Apprenticeship Programs between 1996 and 2003 (by race)

	No. of Apprentices	White	%White	Black	%Black	Other	%Other
Joint Programs	20350	18539	91.1	1650	8.1	161	0.8
Non-joint Progran	5730	5271	92.0	397	6.9	62	1.1
All Programs	26080	23810	91.3	2047	7.8	223	0.9

Note: "Other" includes Asian American, Native American, and Races not elsewhere classified

Status of New Apprentices who Started Training between 1996 and 1998 as of the end of 2003

	No. of Apprentices	No. Cancelled	%Cancelled	No. Completed	%Completed	Still Active	%Still Active	No. Other	%Other
Joint Programs	6604	2523	38.2	3866	58.5	208	3.1	7	0.1
Non-joint Progran	2042	1211	59.3	734	35.9	90	4.4	7	0.3
All Programs	8646	3734	43.2	4600	53.2	298	3.4	14	0.2

Note: "Other" includes suspended and reinstated apprentices.

Statistics compiled and research by:
Cihan Bilginsoy, Ph.D., Associate Professor
University of Utah Department of Economics
1645 Central Campus Drive, Room 308
Salt Lake City, Utah 84112-9300

Legal Analysis/ Support

2008 EPI Briefing

2

EPI BRIEFING PAPER
ECONOMIC POLICY INSTITUTE • JULY 8, 2008 • BRIEFING PAPER #215

PREVAILING WAGES AND GOVERNMENT CONTRACTING COSTS

A review of the research

BY NOOSHIN MAHALIA

Executive summary

For over a hundred years, many state and local governments have required that companies that want to contract for public works must pay their workers a wage that reflects wages commonly received in the area. The federal government adopted its own prevailing wage requirement with the Davis-Bacon Act of 1931. At the heart of these laws is the conviction that government, as a major buyer in the construction sector, should not act to drive down wages. Indeed, the civic-minded reformers who initially pushed for prevailing wage laws believed that the government ought to use its buying power to enhance the welfare of workers and their families.

Critics of prevailing wage laws argue that they inflate government contract costs. But a growing body of economic studies finds that prevailing wage regulations do not increase government contracting costs. Some of these studies use a cross-sectional approach, which compares costs of contracts subject to a prevailing wage with costs of contracts that are not during a common time period, and others use a time-series approach, which examine whether contract costs have changed with the adoption or repeal of a prevailing wage requirement. These studies also show that prevailing wage laws provide social benefits from higher wages

TABLE OF CONTENTS

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and better workplace safety, increase government revenues, and elevate worker skills in the construction industry.

The issue, however, remains contentious. The current research counters the findings of a set of (mostly earlier) studies that relied on hypothetical models. The model works like this: the authors calculate a wage increase attributable to the prevailing wage regulation and then, assuming that the entire wage increase is passed through to the government in higher contract costs, calculate the higher contract costs. The wage increase calculation in these studies is typically flawed, but the most notable problem is the unquestioned assumption that higher wages lead to higher contract costs. Obviously, a study that presumes, without examination, that higher wages lead to higher contract costs tells us little about whether that is in fact the case. There are many reasons why higher wages do not necessarily lead to higher contract costs, and the findings of current research suggest that other factors erase much or all of the hypothetical additional costs the earlier models assume.

Although a few recent studies have adopted this "wage differential approach," most modern literature has favored econometric approaches to compare situations where prevailing wages are applied and where they are not. These studies, more sophisticated in analytical terms, have found no statistical relationship between prevailing wage laws and contract costs, with only two exceptions. The first exception was a national study by Fraundorf et al. (1984) of construction costs in rural areas. The authors found sizable cost differences between government contracts that were subject to federal prevailing wage rules and private contracts that were not. As the first of the econometric studies, Fraundorf continues to be among the most commonly cited in the literature. But subsequent studies discovered that the authors left out a key variable—differences between public and private building design specifications—that would have controlled for the difference in public versus private construction costs. Once these differences are accounted for, later studies do not replicate the Fraundorf conclusion and find no impact of prevailing wages on contract costs.

The second exception in the modern econometric literature is a study of low-income housing construction in California. The study found that affordable housing construction projects subject to prevailing wage laws were substantially more expensive for the government than projects that were not. Because this study is relatively new, scholars have not yet explored the reasons why the findings contradict the rest of the econometric literature. If labor-intensiveness, skill, and material-saving technologies are sufficiently different in the construction of subsidized housing than in the construction of public buildings or highways, then it is possible that prevailing wage regulations would affect this sector differently. However, the study's findings seem implausible, since the cost estimates of the preferred model exceed possible savings in labor costs. Because scholars have not yet replicated the study, it is unclear if the findings relate to idiosyncrasies in the data and methodology, or to the peculiarities of subsidized housing construction.

With these exceptions, the modern econometric literature finds no cost impact on public construction associated with the implementation of prevailing wage regulations. The literature suggests a number of possible reasons for the absence of a link between prevailing wage laws and overall contract costs.

- Prevailing wage regulations do not, in all cases, increase wages. Public contractors may pay at prevailing wage rates without the regulation.
- Average labor costs, including benefits and payroll taxes, are roughly one-quarter of construction costs. Thus, even if a prevailing wage regulation raised wages by 10%, the impact on contract costs would be less than 2.5%. Thus, even if there is an increase in contract costs it is likely to be small—to the point of being undetectable.
- Improved productivity can offset higher wages. Better-skilled workers attracted by the higher wage might complete the job in less time, or firms looking to reduce their higher labor costs might utilize labor-saving technologies.
- Higher wage costs might be offset through "factor substitution," i.e., the substitution of more expensive labor with, say, less-expensive materials. As a practical matter, this point assumes that workers are roughly of the same skill level. But it shows that worker wages

are only one of the avenues contractors can use to win project bids.

- Contractors might absorb the higher wage costs and pay for them out of their profits rather than pass them on to the government.

Some recent studies have expanded the analysis of prevailing wage regulations to determine whether they have indirect costs or benefits for the economy and society. These studies have found that prevailing wage laws can enhance state tax revenues, industry income, and non-wage benefits for workers; lower future maintenance and repair costs; reduce occupational injuries and fatalities; and increase the pool of skilled construction workers—to the benefit of both the public and the construction industry.

At this point in the evolution of the literature on the effect of prevailing wage regulations on government contract costs, the weight of the evidence is strongly on the side that there is no adverse impact. Almost all of the studies that have found otherwise use hypothetical models that fail to empirically address the question at hand. Moreover, the studies that have incorporated the full benefits of higher wages in public construction suggest that there are, in fact, substantial, calculable, positive benefits of prevailing wage laws.

Introduction

Prevailing wage laws require that contractors on public works projects pay their workers at least the locally prevailing wages and fringe benefits paid on similar projects in the area. Kansas was the first state to adopt a prevailing wage law, in 1891, as part of a broad-based effort by the Republican legislature to confront the social costs of 10-12 hour workdays, child labor, and downward wage pressure (Phillips 1998). New York followed suit in 1894, Oklahoma in 1909, Idaho in 1911, Massachusetts in 1914, and New Jersey in 1923. The first and most significant of the federal laws establishing the prevailing wage rule was the 1931 Davis-Bacon Act,[1] which requires payment of wages "prevailing" in a local area to workers on federally financed construction projects worth at least $2,000.[2] Davis-Bacon gained bipartisan support during the Great Depression, when unscrupulous contractors won bids based on low pay for workers (Gujarati 1967) and then delivered shoddy workmanship. It is named for its two Republican co-sponsors and was signed by President Herbert Hoover.

Under Davis-Bacon, the prevailing rate is the rate paid to at least 50% of workers in a construction occupation for a local area. If there is no single rate for at least 50% of workers in that occupation, then the prevailing wage is the average rate paid in the area for that occupation. States, counties, and cities have adopted their own prevailing wage legislation, and policies vary widely. Prevailing wages in states and localities might be set as the local union wage rate, the average wage for construction occupations in the area, or a combination of the two.

Thirty-two states and the District of Columbia currently have prevailing wage laws. Nine states had laws but repealed them, starting with Florida (1979) and Alabama (1980) (Kelsay et al. 2004; Philips et al. 1995).[3] Repeals have relied on arguments that prevailing wage rates increase costs on public construction contracts (Philips 1998), and assertions that repeal will save 15-25% on construction costs are commonly echoed in the news media. These claims, however, do not stand up to serious examination of the relationship between prevailing wage laws and government contract costs.

A growing body of economic analysis finds that prevailing wage regulations do not inflate the costs of government construction contracts. A simple premise underlies the hypothesis that prevailing wages raise costs: the laws result in higher wage costs for contractors, and contractors pass these costs on to the government. Although this seems like a plausible outcome, there are many reasons why the costs to the government might be the same regardless of the wage differences. For example:

- Contractors might pay the wages required under prevailing wage laws even if the law does not require it.
- Labor costs are not the dominant costs in government construction contracts. Even including benefits and payroll taxes, labor costs are roughly 20-30% of construction contracts, according to the Census of Construction (Phillips 1998).[4] Thus, for example, if labor costs are 25% of total costs and prevailing wage rules

raise wages by 10%, the impact on contract costs would be no more than 2.5%. Thus, even if there is an increase in contract costs, it is likely to be small—to the point of being undetectable in some instances and/or by some studies.

- Higher wages might be offset by a rise in productivity. Prevailing wages can attract better-skilled, more productive workers, or firms may rely on higher managerial productivity or invest in labor-saving technologies to offset higher labor costs (Philips 1996).
- Higher wage costs might also be offset through "factor substitution," i.e., substituting more expensive labor with, say, cheaper materials.[5]
- Contractors not subject to prevailing wage laws might retain the money they save in wages as higher profits rather than passing the savings on to the government. Alternatively, contractors paying prevailing wages might absorb the higher wage costs, paying for them out of their profits rather than passing them on.[6]

As with any economic analysis examining the impact of a policy on an economic outcome, the challenge is to isolate the impact of the policy from all of the other factors that might influence the outcome. Take, for example, a study that compares the costs of two sets of construction contracts, one set subject to prevailing wage rules and one set not. The difference in the costs of these contracts is influenced by many factors other than the prevailing wage. If, for example, more of the contracts subject to the prevailing wage happen to be for taller buildings, or are completed during a building boom when construction costs are higher, or use more expensive building materials, those contracts might be more expensive for reasons unrelated to prevailing wage regulations. The studies described below take a variety of approaches to this challenge—ranging from ignoring it to using sophisticated econometric techniques to control for the differences. As scholars have engaged in this work over the years they have learned from their predecessors and refined their techniques for identifying the factors that influence contract costs and improving ways to account for them.

The approaches researchers have taken to study this question fall into three main categories:

- The wage differential approach. Compare wage levels in contracts subject to prevailing wage laws with wage levels in contracts not subject to the laws, and assume that all additional wage costs are passed through to the government by contractors.[7]
- Cross-sectional analysis. Compare contracts subject to the prevailing wage and contracts not subject to the prevailing wage in the same time period. Typically these studies compare the costs of government contracts in states and other jurisdictions with prevailing wage laws with contracts in places without prevailing wage laws. Some studies, however, compare public and private contracts. In addition, in some jurisdictions, some public contracts are subject to prevailing wage laws and some aren't. For example, a local school construction contract might be subject to prevailing wage requirements if the state funds over half the cost but not subject to the requirement if the state pays less than half. Some studies have used these situations to compare the costs of public contracts within the same jurisdiction.
- Time series analysis. Compare government contract costs in time periods with a prevailing wage requirement and costs in time periods without one.

The wage differential approach to evaluating the impact of prevailing wage laws

The wage differential approach consists essentially of two steps. First, researchers examine the relationship between prevailing wage regulation and wage rates. Are wages higher on contracts subject to prevailing wage rules? Second, the higher wages that are calculated are then presumed to be passed through to the government in higher contract costs.

In 1979 the General Accounting Office (today the Government Accountability Office, or GAO) used the wage differential approach in studying a sample of 30 federal projects subject to Davis-Bacon, estimated to value about $25.9 million (GAO 1979). The GAO concluded that,

due to incorrect procedures used by the Department of Labor, wages paid were actually higher than prevailing wage levels in 12 of the projects. Wages on the other 18 projects were lower than the prevailing rate. For the 12 projects set at higher rates, wages were about 36.8% above the prevailing wage rate.[8] The higher prevailing wage rate was presumed to have been passed through in higher contract costs, driving up total construction costs by an average of 3.4% and raising federal construction costs by $228 million to $513 million annually.

The Mackinac Center for Public Policy (Vedder 1999) employed a wage differential approach to calculate costs of prevailing wages on Michigan government construction. The author used a sample of wages paid in the Detroit area suburbs to calculate a 40% difference between market and prevailing rates, a premium that would, hypothetically, drive up construction costs in Michigan by 10%.[9] Applying this 10% to state construction costs and non-construction capital outlays resulted in an estimate of $275 million in additional costs due to state prevailing wages.

Keller and Hartman (2001) attributed a 17% wage difference between public and private construction contracts to the state prevailing wage law. The authors compared a mean hourly rate of $17 for school construction projects that paid prevailing wages and $14.13 for private sector projects.[10] The authors calculated a 2.25% increase in construction costs by applying the wage and benefit differences to the sample of total project costs, and then used simple accounting to conclude that prevailing wages cost the state an additional $66.8 million over a six-year period.

A study by the Beacon Hill Institute found that the Department of Labor's Wage and Hour Division (WHD) incorrectly set hourly wages too high for nine major construction occupations. The authors compared average wages paid under the Davis-Bacon Act with wages for those occupations reported in the Bureau of Labor Statistics Occupational Employment Survey. The WHD set hourly wages an average of $4.43, or 22%, above BLS average wages.[11] If these wage differences were applied to federal construction, government costs would increase by 9.9%. The authors estimate these differences to raise government construction costs by $8.6 billion per year (Glassman et al. 2008).[12]

The Center for Government Research (CGR) estimated that prevailing wage laws increase total construction contract costs by 36% in New York State's metropolitan regions.[13] CGR arrived at this estimate by comparing prevailing wage rates with the market rates of construction occupations. Prevailing wage data collected from the Department of Labor were compared with median wages of construction occupations in seven metropolitan areas in New York and outside the state.[14] The authors then compared labor costs to total construction using a prototype project, or an imaginary model of average construction costs, and applied the markup rates to total construction costs.[15] They concluded that prevailing wages raise total costs of a typical construction project in the New York metropolitan areas by about 36% (CGR 2008).

Wage differential studies are prone to two primary areas of criticism. The first is the way in which some of them calculate the additional wages resulting from prevailing wage regulations. The GAO and Beacon Hill studies' results are based on contracts in which, the authors assert, prevailing wages were miscalculated. But miscalculation of wages under prevailing wage laws is an implementation problem that does not reflect the merits of the laws themselves. Further, with regard to the GAO study, the Department of Labor and other critics argued in congressional testimony that the GAO's methodology was fraught with poor scholarship. Why did the agency exclude the 18 projects for which prevailing wages were set too low? The inclusion of these projects might have offered an entirely different picture of the net impact of the Davis-Bacon law. GAO also acknowledged that its sample of projects was too small for its calculations to have statistical validity. Mackinac (Vedder 1999) assumed that a wage differential in the Detroit suburbs would be the same in the rest of the state, but did not test this assumption.

The second and more fundamental criticism of these studies is how they allocate the higher wages they estimate to contract costs. These studies assume, rather than empirically examine, the relationship between higher wages and construction costs. In contrast to the other methodological approaches discussed in this review, the wage differential studies do not rely on natural experiments to compare costs of contracts subject to and not subject to

prevailing wage regulations. As a result, they are unable to control for other factors that influence construction costs. As outlined above, there are several reasons why higher wages might not be passed through and, thus, assuming that they are is not a safe assumption. The flawed assumptions of the wage differential approach, and the inability to control for other cost influences, limit its ability to determine with much validity whether prevailing wage laws raise government contracting costs.

Cross-sectional analysis

The existence of prevailing wage laws in some jurisdictions but not others and the fact that in some jurisdictions some public contracts are subject to the regulations but others are not create an opportunity for a natural experiment to study the impact of prevailing wage legislation on government construction costs. The cross-sectional approach used in the studies described here use econometric techniques to compare costs of construction when it is subject to prevailing wage rules with the costs when it is not. This method reduces the need to control for time effects and seasonality concerns within the construction industry, although it is necessary to control for regional differences.

In the first econometric cross-sectional study of prevailing wage laws and government construction costs, Fraundorf et al. (1984) collected a sample of construction data from rural counties across the country.[16] They employed a multivariate regression model to compare costs of public construction contracts subject to federal prevailing wage regulation with costs of private construction contracts that were not. The model included controls for a range of factors: regional variation, project size, and building type. The results showed that public construction was an average of 26.1% more expensive than private construction. The authors acknowledged that this estimate seemed high. It was unlikely that prevailing wage laws would generate such a dramatic increase in contract costs, since labor costs at the time averaged 30% of total construction costs. However, they were unable to explain the discrepancy.

Prus (1996) replicated the Fraundorf model but was better able to isolate the effects of prevailing wages from other influences on construction costs. Rather than compare federal projects with private construction, he compared costs of public and private projects in states where prevailing wage laws existed and places where they did not. He found that, even in non-prevailing wage states, government construction was 32% more expensive than private. This finding suggested that the earlier Fraundorf study had measured price differences between public and private construction attributable to causes other than prevailing wages. Controlling for construction cost differences between states, Prus did not find a statistically significant difference in construction costs in states with prevailing wage laws and those without.

In a study of construction costs in the Intermountain and Southwest regions, Phillips (1996) compared construction cost data in five states with prevailing wage laws with four states without prevailing wage laws.[17] He found that costs were lower in the states with prevailing wage laws than in the states in the sample without them. The author attributed this finding to higher productivity among workers in states with prevailing wage laws.

Phillips (1998) conducted a study of school construction costs in the Great Plains states. New school construction data by school type showed that costs were not statistically different in states with prevailing wage laws than in states without them.

Prus (1999) examined both public and private school construction across the mid-Atlantic states with and without prevailing wage laws and across counties in Maryland with and without the laws. The study found that public schools cost more than private, irrespective of prevailing wage laws. In addition to this distinction, Prus identified region, the distinction between new and renovated buildings, building type, building material, and building size as important predictors of construction cost differences, but he found no evidence of an impact of prevailing wage laws.

Azari-Rad et al. (2002; 2003) used a national sample of school construction data to test whether public schools built under prevailing wages cost more than public schools that were not. The studies found that building type, project size, seasonal start times, and whether the school was a private or public building had a significant impact on contract costs. Azari-Rad et al. (2002) found that high schools cost 4.6% more than elementary and

middle schools. Azari-Rad et al. (2003) noted that public contract costs were 15.5% higher than private contracts in its sample of new school construction between 1991 and 1999. But controlling for construction costs among states, this study found that construction costs were not statistically different in states with or without prevailing wage regulations.

After Fraundorf, only one cross-sectional study has found prevailing wage regulations to be associated with higher government contract costs. A study by Dunn et al. (2005) concluded that prevailing wage rates in California raised public costs of low-income residential projects anywhere between 9% and 37%.[18] In California, some public housing construction is exempt from the prevailing wage statute, so the researchers were able to compare construction costs between projects that were subject to prevailing wage regulation and projects that were not. The researchers used two different models. One model reported prevailing wages leading to an increase in contract costs of 9-11%. The results of the researchers' preferred model, which used voter data, salary data, and union information as instrumental variables across the California region, found that prevailing wage laws raised construction contract costs by as much as 19-37%.

Phillips (2006) found that states with prevailing wage laws had higher productivity, with about 13% to 15% more value-added per worker. The 31 states with prevailing wage laws had higher rates of construction training programs, and trainees were more likely to complete their programs compared to states without prevailing wage laws. This study suggested that productivity was a key reason why other studies could not find higher contract costs from prevailing wage laws.

The weight of the evidence from the cross-sectional studies is that prevailing wage regulations do not impact construction costs. All but two studies found that prevailing wages do not raise costs of government construction and, of those two, the findings from Fraundorf were not replicated when the model was improved, most notably by controlling for differences between public and private construction (other than prevailing wages). Researchers have speculated that the factors causing higher public costs include different building design specifications (Fraundorf 1984; Prus 1996); Azari-Rad et al. (2002) suggested higher public costs might arise from spikes in demand created by government decisions to develop multiple projects. These spikes, referred to as "cost storms," were an example of government's power to affect market conditions in the construction industry through large capital investments.

Dunn et al. (2005) is the only study other than Fraundorf to employ modern econometric techniques that show cost effects of prevailing wage laws. Why this one study contradicts the general econometric literature is not yet known.[19] It is possible that low-income subsidized housing construction might require less skill, lower costs of materials, and a larger share of labor in total cost compared to overall government construction. Labor-intensiveness, skill, and material-saving technologies involved in affordable housing construction might be sufficiently different from those used in other public building and road construction that the operation of prevailing wage regulations works differently in this sector. If this is the case, then prevailing wage regulations might operate differently in the affordable housing sector, which is a small share of government construction relative to construction on highways, schools, and infrastructure. However, the biggest weakness of the study is that a 19-37% difference in prevailing wage and non-prevailing wage contracts is implausible. Assuming that labor comprises a 25% share of total construction costs, a savings of that magnitude would seem highly unlikely. The Dunn study's unique findings might also be due to idiosyncrasies in the data used or methodology employed that may emerge as scholars attempt to replicate this result.

If these results are replicated, then the Dunn study may raise questions about prevailing wages in subsidized housing construction. However, it does not represent the rest of the current literature, which has shown that prevailing wage laws have no effect on contract costs.

Time series analysis

Another approach is to compare construction costs before and after the passage or repeal of a prevailing wage law. These studies generally account for time trends in the construction industry.

Thieblot (1986) used the opportunity of President Nixon's suspension of the Davis-Bacon Act in March

1971 to conduct such a before-and-after comparison. He examined federal construction projects that were re-bid during the 34-day suspension and compared the new bids to those originally submitted. Thieblot initially estimated the re-bids to have resulted in savings on federal construction costs of less than 1% but, once controls for inflation were factored in, the differences in the re-bids suggested a savings of 4.74%. Thieblot acknowledged the possibility of biased results because full disclosures of the original bids were made publicly available before the re-bid process; thus, bidders may just as likely have been responding to what they saw in their competitors' bids as to the rescission of the prevailing wage rule.[20] It was unclear if Thieblot's analysis measured the contractors' ability to use information to their advantage, or if the experiment captured the effects of the suspension of the Davis-Bacon Act.[21] In effect, this study could not overcome the problem of controlling for the knowledge bidders had about their competitors' prior bids on the outcome of contract costs.

In a study of new school construction in British Columbia, researchers looked at six years of contract costs before and after the adoption of a prevailing wage law in 1992. Bilginsoy and Philips (2000) found that, without introducing any controls, prevailing wages correlated with 16% higher construction costs. Once the authors controlled for the business cycle, type of building, the number and size of the contractors, regional differences, and time trends, they found no statistically significant increase in construction costs. This indicated that the cost differences were explained by numerous factors other than the prevailing wage legislation.

Phillips (2001a) used a sample of 391 new school construction projects for a pooled cross-sectional time series approach to examine cost effects of prevailing wages in Kentucky, Michigan, and Ohio.[22] He noted that urban schools cost 10.5% more than rural schools in the three-state region and that breaking ground in the fall added 10% to the total cost compared to projects started in the spring; such a (perhaps unexpected) finding highlights the importance of proper controls in these analyses. The study found no statistically significant increase in construction costs associated with prevailing wage laws.

In summary, with the exception of the 1986 Thieblot study, which faced a critical methodological challenge, time-series studies generally find that prevailing wage laws do not increase construction costs.

Do prevailing wage laws have societal costs or benefits?

Recent case studies of prevailing wage legislation have analyzed not just costs to government, but also the wider costs or benefits to society. Some of these studies have shown that prevailing wage laws protect a state's economy, and that claims of government savings from the repeal of the legislation would pale in comparison to losses in revenues and income. These studies demonstrate implicit threats to the overall state economy, since income losses could lead to reduced consumer spending. Other studies show that prevailing wage laws discourage unscrupulous contractors who compete by hiring low-skilled labor, cheating on payroll taxes, or risking safety concerns at construction sites.

Belman and Voos (1995) concluded that the losses in income and state revenues from repeal of Wisconsin's prevailing wage law would far outweigh potential cost savings from lower wages. The study found that the proposed repeal resulted in $123 million of income loss in construction and a net fiscal loss to the government of $6.8 million after accounting for decreased contract costs and declines in tax revenue. Kelsay et al. (2004) calculated potential economic losses of between $318 million and $384 million with the repeal of the prevailing wage law in Missouri. This estimate included $294 million to $356 million in lost income, $5.7 million to $6.9 million in lost sales taxes, and $17 million to $21 million in lost income taxes. The authors calculated these figures based on low- to high-range annual earnings losses of $1,010 and $1,218 per construction worker.

Prevailing wage laws have been shown to have generally positive effects on the construction industry by expanding the pool of construction workers trained through apprenticeship programs. Studies have shown that apprenticeship training programs are fewer in states without prevailing wage laws. In Utah, state apprenticeships plummeted 40% following the 1981 repeal of prevailing wage laws (Philips et al. 1995). In Kansas, apprenticeships dropped 38% after the 1987 repeal. As part of the Kansas study, Philips (1998) conducted a cross-state examination

of construction apprenticeships in prevailing wage and non-prevailing wage states. Apprentices were in decline nationwide, but the number of apprenticeships in states with prevailing wages declined 27%, compared to 53% in non-prevailing wage states.

Researchers have also examined occupational injuries and prevailing wage legislation. One study showed that construction-related fatality rates were 25% lower among workers in states with prevailing wage laws. Fatality rates were even lower in states where prevailing wages were strongly enforced (Philips 2006). Azari-Rad et al. (2005) found that, between 1976 and 1999, states with prevailing wage laws experienced lower injury rates.[23] This was consistent with the hypothesis that injury rates are lower in states regulated by prevailing wage laws because the regulation encourages training and retention of experienced workers.

Prevailing wage laws have also been shown to protect the bottom line of a state's construction budget. In the decade following the 1981 repeal of prevailing wages in Utah, cost overruns tripled, and Phillips et al. (1995) attributed the trend in part to a rise in change orders reflecting a shift to a low-skilled workforce and lower productivity. Data limitations have hindered further study of the question of cost overruns; most studies of contract costs use data from F.W. Dodge on the accepted bid prices,[24] but these data do not capture change orders associated with cost-overruns (Azari-Rad et al. 2002).

The absence of prevailing-wage-certified payrolls also appears to attract bidders who are tempted to evade their obligations to make payments for worker's compensation, Social Security, and unemployment insurance (Philips 2006).

Conclusion

An overwhelming preponderance of the literature shows that prevailing wage regulations have no effect one way or the other on the cost to government of contracted public works projects. And as studies of the question become more and more sophisticated, this finding becomes stronger, and is reinforced with evidence that prevailing wage laws also help to reduce occupational injuries and fatalities, increase the pool of skilled construction workers, and actually enhance state tax revenues.

Endnotes

1. The two other major federal laws are the Walsh-Healey Government Contracts Act of 1936, which covered employers that manufacture or supply materials to the federal government, and the Service Contract Act of 1965, which affects suppliers of personal and business services.
2. Congress extended the definition of "prevailing wage" in 1964 to include fringe benefits.
3. The others are Arizona, Colorado, Idaho, Kansas, Louisiana, New Hampshire, and Utah. Oklahoma's law was invalidated by the courts in 1995.
4. Note that the total cost of construction contracts in this calculation excludes land acquisition, architectural design, or management fees.
5. Factor substitution assumes a homogenous labor pool, or similar skill sets among workers.
6. Belman and Voos cite an unpublished 1990 study for the Arizona District Council of Carpenters. The authors of the report found that, of the $271,000 to $350,000 saved in wages and benefits, only $100,000 was passed on to the contracting agency.
7. Armand Thieblot discussed the wage differential approach in the book, *Prevailing Wage Legislation: The Davis-Bacon Act, State "Little Davis-Bacon Acts," the Walsh Healey Act and the Service Contract Act*, University of Pennsylvania, Wharton School, 1986, p. 94.
8. Wage levels on the 12 projects ranged from 5% to 123% higher than the prevailing rate.
9. Labor costs were assumed to be about 25% of total construction.
10. Benefits under prevailing wages paid $6.28 compared to $4.67 in the private sector.
11. Wages were weighted according to the number of workers in the occupation and by metropolitan area.
12. This calculation assumes that labor comprises 50% of total construction costs. This determination was made following conversations with construction contractors. The authors do not state whether this estimate excludes profits or other items for contractors.
13. Prepared for the New York Economic Development Council.
14. Median wages were provided by the Bureau of Labor Statistics Occupational Employment Survey.
15. The authors state that productivity, cost of materials, and the labor share of construction costs would remain constant for purposes of the analysis.
16. The authors collected construction cost data from in-person interviews with contractors across the country, and selected a representative sample of 215 private and public nonresidential construction projects started in 1977 and 1978.
17. The states included in the study were New Mexico, Utah, Texas, Oklahoma, Wyoming, Nevada, Arizona, Colorado, and Idaho.
18. This range included results from variations on two different econometric models. The ordinary least squares model included two variations of the dependent variable, one with a restricted definition of construction costs that included only site preparation and building construction, and one that included all costs, such as site preparation, architect and design fees, and engineering management fees. These same dependent variables were tested in the instrumental variables model.
19. The authors have not yet made their data available.
20. As Thieblot wrote: "A disclaimer to this estimate is necessary, however, because the bid-rebid process was not pure. In addition to the time difference problem, all of the original bids were disclosed before rebids were made, which points to the high probability that some gamesmanship was at work in the process, independent of the prevailing wage rate elimination" (p. 105). Steve Allen (1983) noted Thieblot's results were not an accurate measure of federal contract cost savings (pp. 716-7).
21. Steve Allen (1983) noted Thieblot's results were not an accurate measure of federal contract cost savings (pp.716-17).
22. All three states had prevailing wage laws for school construction during some portions of the 1991-2000 study period.
23. Injury data were obtained from the Bureau of Labor Statistics, Survey of Occupational Injuries and Illnesses, 1976-99.
24. F.W. Dodge bid price data exclude management costs, architectural fees, and land acquisition.

Annotated bibliography

Allen, Steve. 1983. "Much Ado About Davis-Bacon: A Critical Review and New Evidence." Journal of Law and Economics. Vol. 26, No. 3, pp. 707-36.

Allen argues the Wage and Hour Division's wage determinations under the Davis-Bacon Act could affect construction costs, although the costs associated with errors in wage determinations may be lower than previously reported. Enforcement of prevailing wage laws could also affect total costs. Total construction costs would also be affected by factor substitution, although it's difficult to know the precise pattern as wages change.

Azari-Rad, Hamid, Peter Philips, and Mark Prus. 2002. "Making Hay When It Rains: The Effect Prevailing Wage Regulations, Scale Economies, Seasonal, Cyclical and Local Business Patterns Have on School Construction Costs." Journal of Education Finance. Vol. 23, pp. 997-1012.

In response to anecdotal evidence that school construction costs grew more rapidly than costs in the overall construction market, the authors examine the role of prevailing wage laws and inflationary pressures in school construction. In the model, dummy variables were used to identify public and private schools and the presence of prevailing wage laws. The results showed no significant cost differences in school construction projects related to prevailing wage laws. However, the decision by school districts to build numbers of schools at once creates "cost storms," overwhelming the local construction market by stimulating demand. The implications show that construction costs are strongly related to school district decisions on the size of the school, since economies of scale exist, but at some point the benefits will be offset by the market-crowding conditions associated with the demand for a large-scale project. Other findings showed significant cost effects for the business cycle and economies of scale. For example, the economies of scale statistic showed a 91% increase in cost every time the size of the school doubles.

Azari-Rad, Hamid, Peter Philips, and Mark Prus. 2003. "State Prevailing Wage Laws and School Construction Costs." *I*ndustrial Relations. Vol. 42, No. 3, pp. 445-47.

This 50-state study of school construction from 1991 to 1999 shows that prevailing wage laws have no significant effect on school construction costs. The models included controls for business cycle, building size, school type, the season in which the project broke ground, and public vs. private funding. Controlling for other effects on construction costs, there was no statistically significant increase associated with prevailing wage regulations. The findings showed economies of scale, and that doubling the size of a school raised costs by 93%. New high schools were 5-8% more expensive, possibly because of the increased complexity of science labs, language centers, and recreational specifications. Public schools cost 15.5% more than private schools, independent of prevailing wage regulations. The results counter claims that taxpayers could build additional schools at less cost by repealing prevailing wage laws.

Azari-Rad, Hamid, Peter Philips, and Mark Prus. 2005. *T*he Economics of Prevailing Wage Laws. Burlington, Vt.: Ashgate Publishers.

This book presents empirical evidence on the effects of prevailing wage laws on government costs and examines whether the laws have broader social costs or benefits. Experts on prevailing wages in the construction industry contributed chapters on construction costs, retention of a skilled workforce, occupational safety in the construction industry, pensions and benefits, and the impact of the repeal of prevailing wage laws on demand for public assistance.

Belman, Dale, and Paula Voos. 1995. Prevailing Wage Laws in Construction: The Costs of Repeal to Wisconsin. Milwaukee: Institute for Wisconsin's Future.

Belman and Voos found that the direct costs of repealing prevailing wage regulations outweighed the presumed savings in Wisconsin. The state would be faced with a net revenue loss of $6.8 million annually. The calculation includes a loss of $11.6 million in sales and income tax revenues and a full transfer to the state of the presumed savings of $4.8 million. The authors question whether the savings would fully transfer to the government, however, citing evidence that contractors would pocket more than two-thirds of the savings. The authors note that net effects

didn't include projected costs to society and harm to the construction industry, such as reduced productivity, the transition to a low-skilled workforce, a rise in occupational injuries, and cutbacks in consumer spending. An estimated 100,000 construction workers and their families would also be expected to lose about $123 million in income across the state.

Bilginsoy, Cihan, and Peter Philips. 2000. "Prevailing Wage Regulations and School Construction Costs: Evidence From British Columbia." Journal of Education Finance. Vol. 24, pp. 415-32.

Bilginsoy and Philips conducted a six-year analysis of the British Columbia prevailing wage law, established March 30, 1992. Half of the sample of 54 new public school construction projects commenced before the law went into effect, and half began afterward. When all controls were excluded from the model, prevailing wages appeared to raise construction costs by 16%. However, the results show no statistically significant increase in costs once business cycle, type of building, the number and size of the contractors, regional dummy variables, and time trends are factored in.

Center for Government Research. 2008. Prevailing Wage in New York State: The Impact on Project Cost and Competitiveness. Prepared for the New York State Economic Development Council. Rochester, N.Y.: Center for Government Research.

The Center for Government Research (CGR) estimated that prevailing wage laws raised construction costs by 36% in New York's metro regions. However, the study did not empirically test whether the increase was related to prevailing wage regulations. CGR assumes that the wage differences fully transfer in government costs. The model compared prevailing wage rates with the market rates of construction occupations in several metropolitan areas in New York and several others across the country. The study then compared labor costs to total construction costs using a prototype project, or a model created to mimic typical construction costs. It then applied the markup rates to total construction costs. The calculation assumed that productivity, material costs, and the labor share of construction remained constant.

Department of Fiscal Services. 1989. Maryland's Prevailing Wage Law: A Study of Costs and Effects. Annapolis, Md.: Department of Fiscal Services.

Maryland's prevailing wage laws were estimated to raise costs of state building construction 5-15% in metropolitan areas. At the time, public school construction projects were subject to state prevailing wage laws if the state funded at least 75% of the costs. The sample included 20 new and renovated school construction projects in 1987 and 1988, 14 of which were built under prevailing wage laws. Using a multiple regression model, DFS estimated prevailing wages increased costs by $11 per square foot, or about 15%. But this first statewide study of prevailing wage laws and construction costs in Maryland was later found to have methodological problems regarding a small sample size and the lack of controls for new and renovated projects (see Prus 1999).

Dunn, Sarah, John Quigley, and Larry Rosenthal. 2005. "The Effects of Prevailing Wage Requirements on the Cost of Low-Income Housing." *I*ndustrial & Labor Relations Review. Vol. 59, No. 1, pp. 141-57.

In a study of prevailing wage laws and construction costs in the low-income housing sector, the authors used econometric approaches to measure the effect of prevailing wage laws on final project costs across California. The sample of 205 subsidized housing projects undertaken from 1997 to 2002 included a control group of 30 projects that were not subject to prevailing wage laws. Construction data were collected on projects approved and completed over a five-year period through May 1, 2002. Prevailing wage rates were paid on 175 of the 205 new public housing projects, although there was no attempt made to specify whether projects paid federal, state, or local prevailing wages. In California, some public housing construction was exempt from the statute, so prevailing wages were not paid on 30 of the projects. In the model preferred by the authors, instrumental variables (IV) were used to control for endogenous factors that affected prevailing wage laws across regions. The information for this variable was extracted from voter registration information, union membership, homeownership, age, and income data. The authors reasoned that political influences and economic conditions were likely to affect

whether a region adopted prevailing wage legislation. The IV model showed that prevailing wage laws raised costs of low-income residential projects 19-37%. The ordinary least squares model showed that prevailing wages raised contract costs 9-11%. The conclusion reports the range of results, rather than a confidence interval on the preferred model.

Fraundorf, Martha, and Mason Farell. 1984. "The Effect of Davis-Bacon Act on Construction in Rural Areas." *R*eview of Economics and Statistics. Vol. 142, No. 6.

In the first econometric study of prevailing wages and federal construction costs, the authors used construction data they had collected in 1977 and 1978 from in-person interviews with contractors working on 215 new nonresidential buildings in rural areas across the country. About half (113) of the projects were federally funded and built under the Davis-Bacon Act, and the remainder (102) were private construction projects. The results showed that public projects—all of which were subject to the Davis-Bacon Act—were generally 26.1% more expensive than private construction. At the time, labor costs (including wages, benefits, and payroll taxes) comprised no more than 30% of total costs. The authors acknowledged that the estimate of 26.1% was high. Subsequent research (Prus 1996) determined that the authors had inadvertently excluded a key variable controlling for public versus private projects. Consequently, they had captured the differences between public and private costs, but were not able to isolate the effects of prevailing wage laws.

General Accounting Office. 1979. *T*he Davis-Bacon Act Should Be Repealed. Washington, D.C.: GAO.

This study has been widely cited as evidence against prevailing wage laws, despite later criticisms over its methodology. The GAO argued that the Davis-Bacon Act should be repealed because it was inefficient and unnecessary and raised federal government costs by several hundred million dollars a year. In a sample of surveys collected on 30 federal projects, wages paid were higher than the prevailing rates in 12 of the projects, and lower in others. The GAO targeted the projects with higher wage rates to show a 3.4% increase in total construction costs, which would raise federal construction costs by $228 million to $513 million annually. The study based its findings on simple accounting to show hypothetical savings from the repeal of the Davis-Bacon Act, but it was not able to establish a causal link between prevailing wage laws and government costs. The GAO acknowledged that the sample size was insufficient to calculate construction costs with any statistical validity. However, it stated that the random nature of the sample was representative of federal construction.

Glassman, Sarah, Michael Head, David Tuerck, and Pal Backman. 2008. The Federal Davis-Bacon Act: The Prevailing Mismeasure of Wages. Boston, Mass.: Beacon Hill Institute for Public Policy Research, Suffolk University.

This paper argues that the Davis-Bacon Act should be repealed on grounds that the wage determinations set by the Department of Labor (DOL) do not reflect the true wage prevailing in a local area. Prevailing wage rates set by the DOL were on average 13% higher than market rates, i.e., the average wages reported for construction occupations by the Bureau of Labor Statistics Occupational Employment Survey. This difference was then applied to the federal budget to estimate a 9.91% cost increase, or $8.6 billion annually. The authors attributed the wage differences to unrepresentative surveys and measurements that resulted in an upward bias in wage estimates.

Gujarati, D.N. 1967. "The Economics of the Davis-Bacon Act." Journal of Business. Vol. 40, No. 3, pp. 303-16.

Gujarati's examination of prevailing wages across metropolitan and non-metropolitan counties found that prevailing wages are often set as the union wage for occupations in the construction industry. The author based this finding on 372 wage determinations from 300 counties from 1960 to 1961. The implication of the findings was that the Davis-Bacon Act inflates total contract costs because it favors union contractors who pay higher wages to workers. This study does not reflect the current decision-making process at the Department of Labor, nor does it reflect the present composition of unions in the construction industry.

Keller, Edward, and William Hartman. 2001. "Prevailing Wage Rates: Effects on School Construction Costs, Levels of Taxation and State Reimbursements. Journal of Education Finance. **Vol. 27, pp. 713-28.**

The authors showed that prevailing wage rates were an average of 17% higher in the public sector compared to wages in the private sector in Pennsylvania, and suggested that higher wages would result in sizeable cost burdens to the state. The average wage difference of $2.87, and the difference in benefits of $1.62, or 21.5% combined, would result in a total cost increase of $75 million in school construction. The study uses a sample of school construction projects from 1992 to 1997 in which school districts covered 89% of the cost and the state covered the rest. This study examines the differences between wages paid on public and private construction contracts. It does not empirically observe how these costs would be passed through, but it assumes that lower wage costs would mean lower government costs.

Kelsay, Michael, Randall Wray, and Kelly Pinkham, 2004. The Adverse Economic Impact From the Repeal of the Prevailing Wage Law in Missouri. **Working Paper, Department of Economics, University of Missouri.**

An input-output analysis using RIMS II multipliers estimated total economic losses of between $318 million and $384 million annually from proposed repeals of prevailing wage laws. The breakdown included $294-356 million in lost income, $5.7-6.9 million in lost sales tax collections, and $17.7-21.4 million in lost income taxes. The low and high numbers were based on estimated annual income losses of $1,010-$1,218 per construction worker. Additionally, the authors calculated societal impacts of better pay and benefit packages for workers under prevailing wage laws. The impacts for states without prevailing wage laws include the entry of smaller, less-experienced construction firms into the construction market; higher rates of employee turnover raised the risk that firms might hire unskilled workers more prone to injuries.

Kersey, Paul. 2007. The Effects of Michigan's Prevailing Wage Law. **Midland, Mich.: Mackinac Center for Public Policy.**

This report updates the previous Mackinac study but did not address the various criticisms over methodology. The author takes the BLS median and adjusted wages for construction occupations and estimates that 10% of Michigan's construction funding could have been saved if the state's prevailing wage law were repealed.

Kessler, Daniel, and Lawrence Katz. 2001. "Prevailing Wage Laws and Construction Markets." Industrial and Labor Review. **Vol. 54, No. 2, pp. 259-74.**

The authors examine the time trends of the repeal of state prevailing wage laws on union and race characteristics in construction labor markets. Kessler and Katz use Census and Current Population Survey data and a fixed-effects econometric approach to analyze wages and unionization rates over time. The model compares relative wages for blue-collar construction and non-construction workers in repeal and non-repeal states over a 24-year period. The overall effect of prevailing wage laws on construction labor costs is small (2-4%), although this varies widely across groups. This calculation was based on a 10% estimated decline in union worker incomes. Because union members account for one-quarter of all construction workers, the total impact on labor costs was 2-4%. The results suggest the repeal of prevailing wage laws negatively affects union and white workers, while it may benefit black construction workers. This study is limited to an analysis of wages and does not include total construction costs in the empirical model.

Philips, Peter, Garth Magnum, Norm Waitzman, and Anne Yeagle. 1995. "Losing Ground: Lessons From the Repeal of Nine Little Davis-Bacon Acts." Working Paper, Department of Economics, University of Utah.

The repeal of prevailing wage laws was found to reduce worker earnings, cut worker training programs, increase occupational injuries, and increase cost overruns. These findings were based on an examination of the effects of prevailing wage laws in nine states that had repealed the legislation, nine other states that never had the legislation, and 32 states with prevailing wage laws. In the nine states that had repealed prevailing wage laws, worker earnings declined $1,477 a year, a drop that would result in substantial losses in income and sales tax revenues to the state. Controlling for downward trends in construction training, state employment rates, and regional differences in training

availability, states that repealed prevailing wage laws reduced construction training by 40%. In the case of Utah, declines in training produced a substantial shift to low-skilled workers, declining productivity, and a tripling in cost overruns compared to the previous decade. Occupational injuries rose 15% in states that had repealed the legislation. Worker injuries were responsible for lost workdays and higher government costs for worker's compensation.

Philips, Peter. 1996. Square Foot Construction Costs for Newly Constructed State and Local Schools, Offices, and Warehouses in Nine Southwestern and Intermountain States: 1992-1994. Prepared for the Legislative Education Study Committee of the New Mexico State Legislature.

This study demonstrated that square foot construction could be less expensive in prevailing wage states compared to states without prevailing wage laws. The study took a cross-section of government construction projects across the Intermountain and Southwestern states, five of which had prevailing wage laws and four of which did not. The states were New Mexico, Utah, Texas, Oklahoma, Wyoming, Nevada, Arizona, Colorado, and Idaho. The data were disaggregated based on building type: offices, warehouses, elementary schools, middle schools, and high schools. Once the data were disaggregated by building type, the average square foot construction costs were shown to be $6 less in the sample of states with prevailing wages laws. The results show that productivity may have played a major role in construction cost outcomes and that it can offset potential wage increases. Philips noted a 1979 BLS study of aggregated school construction costs that showed total labor costs were the same in the South and Northeast, although hourly wages were 50% higher in the Northeast. Productivity could explain why a higher hourly wage on school construction in the Northeast did not result in higher total labor costs. However, total labor costs were the same in the South and Northeast, despite the hourly wage differences.

Philips, Peter. 1998. Kansas and Prevailing Wage Legislation. Report prepared for the Kansas Senate Labor Relations Committee.

In this case study, school construction costs, worker wages, and other societal costs were examined before and after the 1987 repeal of prevailing wage laws in Kansas and compared with other Great Plains states. Philips used statistical methods to compare mean and median costs of new schools in Kansas and surrounding states from July 1991 to June 1997. Of 365 new elementary schools in the Great Plains states with prevailing wage laws, construction costs were not statistically different from zero controlling for other cost factors. Average construction earnings fell faster in Kansas and other surrounding states without prevailing wage laws after the 1987 repeal. After the repeal, real worker earnings fell 11% in Kansas and in surrounding states without prevailing wage laws, compared to a 2% decline in states with prevailing wage laws. The loss of earnings would have resulted in lost tax revenues to the state.

Collective bargaining in construction declined after the state's repeal, and this decline affected worker training, pay and benefits, occupational injuries, and lost time from work. Apprenticeship training programs declined in Kansas and surrounding states without prevailing wage laws from 1973 to 1990. In Kansas, apprenticeships slid 38%, from an annual average of 861 in the 1970s to an average of 530 in the first four years after the law was repealed. In the sample of states with prevailing wage laws, apprenticeships declined an average of 27% during the period, compared to a decline of 53% in states without prevailing wages.

Occupational injuries rose 19% in Kansas after the repeal of prevailing wage laws, or from 11 to 13 injuries per 100 construction workers. Philips compared the number of injury cases per worker from 1976 to 1991 using the Bureau of Labor Statistics industry survey of occupational injury and illness. Total injuries rose 26%, from 11 to 14 per 100 construction workers, and serious injuries rose 14%, from 4.7 to 5.3 injuries per 100 construction workers in states without prevailing wage laws. Annual average employer contributions toward pensions and health insurance in Kansas fell 17% after the repeal of prevailing wage laws, according to data obtained from the U.S. Department of Labor for the years 1982-86 and 1987-92. Philips attributes this drop to the shift away from collective bargaining following the repeal in Kansas.

Philips, Peter. 1999. Kentucky's Prevailing Wage Law: Its History, Purpose, and Effect. **Working Paper, Economics Department, University of Utah.**

Prevailing wage laws in Kentucky provided a unique sample because some projects were exempt from the law until it was reinstated in 1996. Kentucky did not repeal its law, but it exempted school construction from the statute. In 1982, schools and some city projects were exempt from the 1940 prevailing wage statute. It also exempted city, county, and regional governments from construction projects paid for with less than 50% of state funds. In 1996, it expanded its law to include public schools and most local and county construction projects. The study was in response to charges that prevailing wages discriminate against minority workers and arguments that the legislation reduced the number of entry-level jobs. Philips used statistical methods to analyze the relationship between prevailing wage laws and the racial composition of the construction industry. The results showed no measurable relationship between unemployment rates by race in construction and state prevailing wage laws.

Philips, Peter. 2001a. A Comparison of Public School Construction Costs in Three Midwestern States That Have Changed Their Prevailing Wage Laws in the 1990s: Kentucky, Ohio, and Michigan. **Working Paper, Economics Department, University of Utah.**

This study takes advantage of a natural experiment with the judicial suspension of the prevailing wage law in Michigan (1995-97), the adoption of prevailing wages for school construction in Kentucky (1996), and the repeal of prevailing wages for school construction in Ohio (1997). About half of the 391 new schools in the sample were built under prevailing wage legislation in those three states from 1991 to 2000. The study accounted for the problem of building costs climbing faster than inflation during the 1990s, and included controls for rising construction costs for new public schools in all three states from 1991 to 2000. The results showed that prevailing wage regulations did not raise construction costs with any statistical significance.

Other findings showed that urban schools cost 10.5% more than rural schools, controlling for other factors such as building size. Ohio schools cost 12.6% less than schools in Michigan; Kentucky schools cost 14.6% less. The decision over when to break ground was shown to affect total cost: projects started in the fall added 10% to total costs compared to projects that broke ground in the spring.

Philips, Peter. 2001b. Four Biases and a Funeral: Dr. Vedder's Faulty Experiment Linking Michigan's Prevailing Wage Law to Construction Employment. **Economics Department, University of Utah.**

Examining a study by the Mackinac Center for Public Policy, Philips discovered that the data and structure of the methodology led to internal and external validity problems. Four primary biases were produced by the Mackinac research design, including the fact that results did not hold in other states. The biases were listed as the selection of 30-month-long time periods, a seasonal adjustment that did not reflect construction industry patterns, employment adjustments based on unseasonably warm weather on the end points of the data, and the inability to replicate the results in other states. Mackinac's hypothesis that employment increases after the repeal of prevailing wage laws and declines after their adoption was upheld in the case of Michigan, but Philips attributes this to pure luck. Contrary to Mackinac's findings, looking beyond Michigan employment actually declined in states that repealed prevailing wages. It also declined in Oklahoma, where the law was judicially annulled, and in Ohio, where school construction was exempt from prevailing wages. The states that repealed prevailing wage laws were Louisiana, Kansas, Colorado, New Hampshire, and Idaho. In Kentucky, where the law was applied to schools in July 1996, employment increased.

Philips, Peter. 2006. Construction: The Effect of Prevailing Wage Regulations on the Construction Industry in Iowa. **Working Paper, Economics Department, University of Utah.**

Productivity was found to play a major role in explaining why less expensive labor does not always result in lower government construction costs in the absence of prevailing wage laws. Using 2002 Census of Construction data, Philips compared average annual incomes of construction workers and the value-added per construction worker by state. Workers in states with prevailing wage laws earned more income, but they also had higher productivity. In prevailing wage states, construction workers earned an average of 15% more in wages and about 25% more in

Social Security, unemployment insurance, and worker's compensation. States with prevailing wage laws showed 13-15% more value-added per worker compared to states without the legislation. The result showed that prevailing wage laws raised productivity, possibly by inducing better management of projects, higher training standards, and more capital investment.

Prevailing wage laws also promoted collective bargaining activities that encouraged apprenticeship programs necessary to improve workmanship and expand the pool of skilled workers. On the other hand, states without prevailing wage laws faced higher costs of maintenance and repair and had transitioned to a low-wage, low-skill workforce. Non-prevailing wage states created an environment where contractors would cut corners on safety, training, and payroll regulations in an attempt to offer lower bids. In Iowa, an estimated 2,500 workers were misclassified as independent subcontractors in order to save on payrolls. The misclassification of workers deprives the state of worker compensation and unemployment insurance payments, and allows the contractor to dodge health insurance, pension, and Social Security contributions.

Prus, Mark. 1996. The Effect of State Prevailing Wage Laws on Total Construction Costs. **Working Paper, Southern University of New York, Cortland.**

Prus replicated the Fraundorf model and discovered that the study did not control for cost differences between public and private construction. Prus used multivariate analysis to compare construction costs in states with prevailing wage laws, rather than compare federal-level construction projects that were subject to the Davis-Bacon Act with private construction contracts. The data were obtained on offices, hospitals, schools, garages, and warehouses. Controls were included for building material, building type, and building height, and a dummy variable was used to mark new or renovated construction. The results showed that public construction was 32% more expensive than private construction in states without prevailing wage laws. Controlling for differences between public and private construction, there were no statistically significant cost effects related to prevailing wage laws. This study demonstrated that the Fraundorf study had captured the cost difference of public-private construction rather than the effects of prevailing wages. Prus attributes the cost differences to government specifications and building design.

Prus, Mark. 1999. Prevailing Wage Laws and School Construction Costs: An Analysis of Public School Construction in Maryland and the Mid-Atlantic States. **Prepared for the Prince George's County Council, Maryland.**

Most of the schools built during the 1990s in Maryland were not subject to the state's prevailing wage laws, in effect since 1969. While the legislation covered most state-funded public school construction in the 1980s, changes in the formula and allocation of prevailing wage determinations in 1989 excluded most school construction from the prevailing wage requirements. The statute required the payment of prevailing wages for public construction projects that received 50% or more funding from the state, and for public school construction that received at least 75% from the state. The law was later changed to reduce the threshold for school construction to at least 50% funding from the state. In Maryland, Allegany County and Baltimore City had enacted prevailing wage laws for school construction and public works. The presence of prevailing wage laws in some places in Maryland and the region, but not others, allowed Prus to empirically examine the effects on government construction costs.

First, Prus replicated the methodology of a Maryland Department of Fiscal Services study and discovered that the authors had excluded controls to differentiate between new and renovated projects (see Department of Fiscal Services 1989). If this control were included, then the results did not show statistically significant increases in costs. The DFS model had overestimated costs because it included site preparation in the definition of cost and did not control for regional differences. The author noted that the most expensive school in the sample was built without prevailing wages.

In a separate experiment, Prus examined contract costs of schools built in Maryland with and without prevailing wage laws. The results showed no statistically significant effect on costs. The model included controls for building materials, types of school, a marker for new or renovated project, a marker for public or private school, and the

height of the building. Public schools were 40.6% more expensive than private schools regardless of prevailing wages, and economies of scale were evident. High schools were 33% more expensive than elementary schools. The results also show a doubling in the building size would raise costs by 68%.

A cross-state experiment compared square foot construction costs in Maryland and other mid-Atlantic states. Although construction costs appeared to be higher in prevailing wage states based on descriptive data, a linear regression model showed that the differences were related to regional factors. Prus concludes these considerable cost differences exist because school construction in the South was less expensive than in the northern states of the mid-Atlantic region. In addition to regional differences, building type and specifications also impacted total construction costs. Schools in the sample of prevailing wage states appeared to be 25% more expensive, until the data were disaggregated by school type. Elementary schools were cheaper while middle and high schools were more expensive in prevailing wage states. Costs of construction of public schools in states without prevailing wage laws were 11.3% higher per square foot than costs for private schools. Prus compared square foot construction costs by school type in prevailing wage and non-prevailing wage states. Using linear regression, he compared construction costs controlling for building type, size, and private vs. public schools. Controlling for other factors, prevailing wage laws were shown to have no statistically significant effect on costs.

Thieblot, Armand. 1986. The Davis-Bacon Act, State "Little Davis-Bacon" Acts, the Walsh-Healey Act, and the Service Contract Act. **Philadelphia: Wharton School, University of Pennsylvania.**

Thieblot conducted a time-series analysis of contract costs before and after President Nixon's temporary suspension of the Davis-Bacon Act. The author examined new bids submitted by contractors during the 34-day suspension in February and March 1971. The construction contracts that were re-bid were not yet awarded. The re-bids were estimated to save less than 1%, or about $240 million a year on all federal construction contracts, compared to bids that were originally submitted. The inflation-adjusted estimate showed a 4.74%, or about $1.1 billion, difference in the original and new bids. Thieblot acknowledged that results might be biased because full disclosures of the bids were given before the re-bid process and he was unable to control for contractors altering their bids in an attempt to game the system: "A disclaimer to this estimate is necessary, however, because the bid-rebid process was not pure. In addition to the time difference problem, all of the original bids were disclosed before rebids were made, which points to the high probability that some gamesmanship was at work in the process, independent of the prevailing wage rate elimination." It was unclear if Thieblot's analysis measured the contractors' ability to use information to their advantage, or if the experiment captured the effects of the suspension of the Davis-Bacon Act.

Vedder, Richard. 1999. Michigan's Prevailing Wage Law and Its Effects on Government Spending and Construction Employment. **Midland, Mich.: Mackinac Center for Public Policy.**

This study assumes prevailing wage laws impose additional costs on the state and lower construction employment in Michigan. The study's methodology relied on simple descriptive statistics and was criticized for numerous shortcomings. The results showed construction jobs grew by 11,000, or 13%, after the prevailing wage law was repealed, but critics cited methodological issues to refute this claim (see Philips 2001b). Using a series of hypothetical calculations and a finding that showed prevailing wage rates were 10% higher in the Detroit area, the study also estimated that prevailing wage laws raised construction costs by $275 million: "If labor costs were 25 percent of the total value of a construction contract, and if average labor costs per hour were increased 40 percent by prevailing wage laws, this would drive up total construction by 10 percent….Assuming a 10-percent differential…the state of Michigan could have saved about $251 million by eliminating prevailing wage provisions." The study did not provide evidence that the wage difference in the Detroit area was representative of the rest of the state. It also did not provide any empirical support to show differences in wage rates would be passed through as government costs. Rather, it allocated wage differences to government costs without controlling for any other factors.

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Acknowledgements

I would like to thank Michael Ettlinger, Ross Eisenbrey, Peter Philips and Dale Belman for their feedback and assistance with this report.

About Author

Nooshin Mahalia joined the Economic Policy Institute in 2007. Prior to joining the Economic Analysis and Research Network at EPI, she worked at the Economic Development Institute and previously for news organizations in the metropolitan Atlanta area. Her areas of interest include regional economic development and technology policy.


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2002 Report
2004 Summary
2005 Summary

Analysis of Regression and Surveys in Ohio LSC Report on S.B. 102 on Claimed Cost Savings from Exempting School Construction from Prevailing Wage Requirements

Herbert F. Weisberg

Professor, Ohio State University

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1. Summary and Overview

On May 20, 2002 the Ohio Legislative Service Commission (LSC) issued Staff Research Report #149 claiming $489 million of cost savings since S.B. 102 took effect in August 1997 exempting school construction from the state's prevailing wage requirements. They used data from F.W. Dodge, a company that collects information on construction projects, including their bid prices. This cost-savings estimate is based on a statistical procedure known as regression analysis, but examination of the statistical analysis in the LSC Report shows that estimate is not valid.

The main statistical problem is that the LSC Report's regression equations explain a miniscule portion of the differences in costs between projects. Regression estimates would be meaningful only if the equations account for 70+% of the differences between projects, but these account for only a trivial 1% to 3% of the cost differences. The regression equations do not fit the data, so the cost-savings estimates are statistical fiction.

Additionally, the LSC equations find prevailing wage to be statistically insignificant, meaning that there is no statistical reason to believe that prevailing wage affects costs. A small cost savings might not be found significant, but it is not reasonable to claim that an effect leading to nearly $500 million in cost savings would not be found significant if it were real. In fact, every preceding analysis of Dodge construction data for Ohio and other states has found that prevailing wage does not significantly increase costs, and the LSC Report actually confirms that finding.

Finally, the Dodge data that the LSC analyzed show only the construction costs at the start of projects. They do not show the final construction costs, which can be considerably higher if the company lacks the expertise to keep the costs within the level of the bid. Therefore, the estimated cost savings are not relevant to actual project costs.

All in all, LSC's claimed cost savings obtained by exempting school construction projects from Ohio's prevailing wage law are based on flawed interpretations of statistical analysis.

This analysis will focus on the regression of the Dodge construction data. Regression analysis is briefly explained in Section 2. Section 3 examines the analysis of new construction and additions in Appendix 2. The alterations analysis in Appendix 2 is described separately in Section 4, because it builds on the regression analysis of new construction and additions. Section 5 briefly considers the discussion of omitted variables in Appendix 5. The several surveys in the LSC Report are examined in Section 6. Finally, some conclusions are presented in Section 7.

2. Regression Analysis

Regression analysis is a completely standard statistical technique for ascertaining whether possible explanatory variables account for a variable of interest. It has been used to look at the effect of Prevailing Wage legislation since an analysis by Fraundorf (1983) of the Davis-Bacon Act. It has been used on the Dodge construction data in several past studies, including Prus (1996, 1999), Philips (2001), and Wial (1999).

To understand regression, imagine a graph with a lot of points in it and think about trying to draw in the straight line that best fits those points. That's what regression does. Say hypothetically that construction costs were $150 a square foot one year, $155 the next year, $160 the next year, and $165 the next year. If we graphed that, we'd find a very simple straight line relationship: costs = $150 + $5 more per year. That's a regression equation. The $150 is what the regression tables in the LSC Report call an "intercept" and the $5 would appear as the "coefficient" for year.

Real data, of course, are always more messy. Say instead that construction costs were $150 a square foot one year, $154 the next year, $161 the next, and $165 the next year. The best-fitting line to these values would still probably be the one found above: costs = $150 + $5 more per year. That line would still provide a good fit to the data, but there would be some "error" because that line no longer fits the data perfectly. The R-Square values in the regression tables show how good the fit is: 1.00 means that the fit is perfect, as in the previous paragraph, and the example in this paragraph would still give a very high R-Square, but it could go down as low as zero if the data do not fit a straight line at all.

Regression analysis is called "linear" because it is looking for a straight-line pattern, as in the above paragraphs. If the construction costs first climbed regularly but then declined regularly, it would not find any particular relationship because there is no longer a straight line pattern to the data.

Next, imagine adding some other considerations to the equation. Say we are explaining costs pretty well with a year variable, but maybe adding in unemployment rates as an additional explanatory variable would help account for the part of costs that the year wasn't accounting for. We can keep adding in explanatory variables to try to account for the differences in costs between projects better and better. And the R-Square value tracks for us how well we are doing in the explanation. (The adjusted R-Square is actually the best statistic to use since it adjusts for the statistical effect that adding more explanatory variables should improve the explanation.)

Going back to our equation above, we could plug the year number into the equation to get an estimated cost value for that year. For example, the estimated cost for the second year would be $155, and the R-square shows how good that estimate is. When the R-square is high, near 1.00, that will be a good estimate. However, the estimated cost would be a poor estimate if the R-square were only .01, since that means the data do not fit the regression line. The cost-savings estimates in the LSC Report are based on plugging in values into regression equations in this manner. However, the adjusted R-squares are only in the order of .01 to .03, so the estimates of cost savings will not be accurate.

3. Dodge Construction Data for New Construction and Additions

Dodge construction data for new school construction and additions are analyzed in Appendix 2 of the LSC Report using regression analysis. **Prevailing wage legislation is**

found to be statistically insignificant in this analysis, meaning that it did NOT increase project costs. Also, the analysis does not succeed in accounting for the differences between projects in their costs.

3.1 Data. The F.W. Dodge construction data seems to be the gold standard in the field, being used in several past regression analyses on prevailing wage effects (e.g. Prus 1996, 1999; Philips 2001; Wial 1999). The Ohio data used here are for 1992-2001, covering years before and after the passage of S.B. 102.

The LSC Report uses regression analysis to look at the factors that affect "inflation-adjusted cost per square foot" ($SQFT), which is the "dependent variable" in this analysis. In regression analysis, the analyst checks which of several potential explanatory factors ("independent variables") affect that dependent variable. In the 3 regression analyses in Tables 20, 21, and 22, the LSC Report uses 4 sets of explanatory variables: 1) whether the project was undertaken before September 1997 when school construction was subject to prevailing wage requirements (PW), 2) whether the school was in a rural county (Rural), 3) the type of school (Primary School, Junior High, Secondary High, or Vocational), and 4) a time counter for when the construction occurred (Trend). Additionally, it uses an "interaction term" (PW-Rural) to test whether the prevailing wage law had a different effect in urban and rural counties. (The Appendix refers to some of these as "dummy variables" -- all that means is that they are two category variables, such as the county either being rural or not being rural.) (The tables have rows only for Junior High, Senior High, and Vocational School, not for Primary School -- that is appropriate; it just means that Primary School is being used as the baseline to find out how much more (or less) expensive it is to build the other types of schools.) (The time counter is a variable that is set at 1 for the first month in the data, January 1992, 2 for the next month, February 1992, and so on up to 120 for December 2001. It does NOT take into consideration the possibility of seasonal differences.)

It is important to emphasize that the Dodge data refer only to accepted bids for projects. They do not show the actual cost of the construction. Obviously the actual cost can be much higher than the original bid, especially if the low bidder is inexperienced in keeping costs within the level of the bid. Therefore, the Dodge data can never be used to show actual cost saving.

3.2 Explanatory Strength of the Regression. Tables 20-22 contain an important summary statistic showing the statistical quality of the regressions: the R-Square value (or, better yet, the Adjusted R-Square). This shows how well the regression accounts statistically for the differences in costs between different projects (known as the "proportion of variance that is explained"). This statistic can range from 0.00 (for a regression that is so useless that it does not account for any of the differences) to 1.00 (for a regression that totally accounts for the differences). (The adjusted R-square just takes into account that adding more explanatory variables inevitably increases the chances for accounting for differences.)

These statistics show that the regressions in Tables 20-22 account for only 1-3% of the differences in project costs. **This is an exceedingly low level of statistical explanation.** When the regressions are this useless in accounting for the observed differences, it is appropriate to wonder what went wrong -- if the wrong model was used or if relevant explanatory variables were omitted.

The low level of the R-square shows that there is little tendency for this straight-line model to fit the data. Instead, it is likely that there remains considerable differences in cost-

per-square-foot within each combination of categories on the explanatory variables. **The regression equation does not satisfactorily fit the data.**

These R-square statistics show the regression analyses for new construction and additions were useless. **Prevailing wage legislation does not account for the differences found in costs for new construction or additions.** The LSC Report argument on page 60 against using statistical significance tests does not address this problem at all. **The regression equations show that 97-99% of the differences in costs for new construction and additions remain unexplained.**

The LSC Report claims cost savings of $487.9 million in the post-exemption period, of which $408.0 million (84% of the claimed cost savings) are from additions projects. However, the adjusted R-square for the additions regression is only .01, meaning that 99% of the differences between additions projects are not being accounted for by the regression. **As a result, there is no statistically valid basis for estimating cost savings.**

3.3 Statistical Significance. The three right-hand columns of Tables 20-22 include material designed to show whether each of the explanatory variables has a "significant" effect. The usual convention is to require the right-hand column value (the "P-value" for "probability value") to be less than .05 for the result to be considered meaningful. A value less than .05 would mean that there is less than a 5% chance of getting the obtained regression effect by chance alone, and most scientific fields consider that an appropriate standard. (Some fields would instead require a more stringent .01 level, while exploratory work sometimes allows a more lenient .10 level.) **Prevailing wage does not have a statistically significant effect in Table 20, 21, and 22**, nor is its interaction with rural significant in any of those tables.

Recall Gertrude Stein's wonderful line about Oakland: "there's no there there." Statistical significance tests are designed to test whether there is any there there -- and there isn't any there here! **The statistical test shows that concluding that prevailing wage has an effect on cost is incorrect.**

Significance tests are standard in the scientific literature. As one example, they are used in the medical field to decide whether a claimed effect of a new disease treatment is greater than would have been expected by chance. A new treatment would not be accepted if its effect were found not to be statistically significant. As another example, I would not be able to publish a result in a journal in my field if the result was not statistically significant. **The regression results do NOT show that prevailing wage increased cost for new construction or additions.**

Significance tests are designed to test whether small effects could have occurred by chance alone. Some of the claimed effects shown here for prevailing wage are large, particularly the effects on additions. **It would be unreasonable to claim that a large effect leading to a $408 million would not be found significant.**

The LSC Report adds two more tables, Tables 24 and 25, to Appendix 2 to summarize the probabilities of the results for each explanatory variable in Tables 20, 21, and 22. The last column of Table 24 then shows the minimum of the probabilities. The implication is that it is appropriate to look at the best statistical result across several separate regression equations. **This is totally invalid**. I have never seen such a use of a minimum of probabilities. And it is totally misguided. If one were using the .05 level, the chance of at least one of three regression equation finding an effect of a variable at the .05 level is .1526 (using a standard "binomial" logic). **Thus, there is a .15 chance that at least one of those three regressions would have found a significant prevailing wage effect, so it is even more telling that it was NOT significant in any of the 3 regressions.**

The LSC Report gets around the significance issue with an argument on page 60 that the data should be considered full data for a population instead of data based on a sample of school construction projects. That is one possible argument that is sometimes given for not using significance tests. However, if the LSC Report did not consider significance calculations appropriate, there would have been no reason to include the right-most three columns in Tables 20-23. Additionally, the standard argument in the statistical literature for using significance tests even in this situation is that the construction projects that were undertaken can be considered to be a sample of those that could have been conducted. **To repeat, regardless of the implication of the LSC Report, prevailing wage did not have a statistically discernable effect on school construction costs for new construction or additions.**

That the effects of the Prevailing Wage are not significant in regression analysis should not be surprising since other regression analysis of Dodge data by Prus (1996), Prus (1999), Philips (1999), Bilginsoy and Philips (2002), and Philips (2001), reviewed on pages 14-15 of the LSC Report, all find the same thing -- prevailing wage does NOT have a statistically significant effect on school construction costs.

Finding an insignificant effect with a small sample is sometimes excused when the probability is .06 rather than .05, with the effect being described as "marginally significant." Here, however, the probability levels are all .52, .23, and .34, far above .05. Furthermore, the number of projects for Tables 20-22 are not small -- an effect that is estimated to be in the order of many millions of dollars should be detectable when dealing with regressions of 256, 194, and 676 projects. **Finding INsignificant results here shows that Prevailing Wage simply does not matter.**

3.4 Regression Coefficients. Regression analysis permits the writing of an equation estimating the dependent variable on the basis of the explanatory variables. The regression "coefficients" are used to construct the regression equation. The coefficients for Tables 20-23 are summarized in the table below, with significant effects marked by asterisks.

	New Construction -- Large Projects	New Construction -- Small Projects	Additions
Trend	.14	-.14	1.54*
Rural	.98	-14.49	10.42
Junior High	6.78	.96	80.37*
Senior High	1.52	-2.00	10.06
Vocational School	15.17	9.18	-43.18
Prevailing Wage	3.99	-11.45	46.47
Prevailing Wage for Rural Counties	-5.54	5.50	8.73

First, there are few significant explanatory variables. Only 2 of the 21 numbers in the table are statistically significant. At the .05 significance level, one would expect 1 of 20 values to be significant by chance alone, so the results are basically at chance levels. Second, the coefficients in most rows bounce around considerably. Trend has a large effect for additions, a trivial positive effect for large new constructions and a trivial negative effect for

small new constructions. Rural has a large negative effect for small new construction, a large positive effect for additions, and a small positive effect for large new construction; senior high has the same pattern. Junior high has a very large effect for additions, but small effects for new construction; prevailing wage has the same pattern. Vocational schools has a large negative effect for additions, but small positive effects for new construction. It is possible that these differences reflect differences between the different types of projects, but no rationale is given in the LSC Report for viewing the instability of these coefficients as plausible. However, **inconsistent patterns like those in this table are usually an indication of the effects not being real.** Random effects would be expected to bounce around in the same manner that these do. **The effects of the variables appear to be random, so basing cost-savings estimates on them is risky at best.**

3.5 Cost-Savings Estimates. The estimated savings from S.B. 102 claimed in the LSC Report are based on the regression analysis. The equations in the coefficient columns of Tables 20 and 21 are used for new construction and the coefficient column of Table 22 for additions. The equations are estimated under Prevailing Wage and without Prevailing Wage, and the difference is taken as the estimated savings.

Using regression analysis to estimate values is standard **if the regression equation has a good fit to the data. However, the R-Squares show that these equations do NOT fit the data, so estimated values based on them are worthless. The actual estimates are based on regressions accounting for only 1-3% of the differences in observed cost-per-square-foot, which is not a reasonable level for valid estimates of the cost savings.**

As an example of how this works, the equation for large new construction projects from Table 20 (using the "coefficients" column) estimates that the cost-per-square-foot for additions (in inflation-corrected dollars) as:

86.64 + (.14*time indicator) + (.98 if the county was rural) + (6.78 for a junior high, 1.52 for a senior high, and 15.17 for a vocational school) + (3.99 when prevailing wage was in effect) + (-5.54 in rural counties when prevailing wage legislation was in effect).

Evaluating this equation for large new construction projects, the estimated cost-per-square foot (inflated to Dec 2001 dollars) for primary schools in Sept 1997 (the month when S.B. 102 took effect) would be:

	With Prevailing Wage	Without Prevailing Wage	Claimed Effect of Prevailing Wage
Urban	$100.29	$96.73	$3.99
Rural	$95.73	$97.28	-$1.55

Each of those cost figures would be $6.78 higher for a junior high, $1.52 higher for a senior high, and $15.17 higher for a vocational school. Each of those estimates would have been 14 cents lower the previous month and 14 cents higher the next month. To repeat what has been said earlier, the prevailing wage effect in this equation is NOT statistically significant, and the regression on which these estimates are based accounts for only 3 percent of the differences in costs between these projects, which shows that these estimates are not statistically valid. And, of course, these are costs according to accepted bids, not the final project costs, which could run higher.

The LSC analysis would have plugged in the characteristics of each of the 256 large new construction projects into this equation, and estimated the cost with and without the prevailing wage, and then summed that over all the projects to get a cost-savings estimate.

Similarly, from Table 21, the estimated cost-per-square foot (in Dec. 2001 dollars) for primary schools in September 1997 for small new construction projects would be:

	With Prevailing Wage	Without Prevailing Wage	Claimed Effect of Prevailing Wage
Urban	$85.39	$96.84	$11.45
Rural	$76.40	$82.35	$5.95

These figures would be $.96 higher for junior high schools, $2.00 lower for senior highs, and $9.18 more for vocational schools. These estimates would be 14 cents higher the previous month and 14 cents lower the next month. The prevailing wage actually reduces project costs according to this equation, which the LSC Report does not point out. Again, this regression accounts for only 1 percent of the differences in costs between these projects, so these estimates are not statistically valid.

The total of $24.6 million for new construction cost savings is based on the figures above: $3.99 saving per square foot for urban large projects, -$1.55 (negative) for rural large projects, $11.45 for urban small projects, and $5.95 for rural small projects, each multiplied by the total number of square feet of projects of those types.

From Table 22, the estimated cost-per-square-foot (stated in Dec. 2001 dollars) for additions projects for September 1997 would be:

	With Prevailing Wage	Without Prevailing Wage	Claimed Effect of Prevailing Wage
Urban	$181.61	$135.14	$46.47
Rural	$200.76	$145.56	$55.20

These figures would be $80.37 higher for junior highs, $10.06 more for senior highs, and $43.18 less for vocational schools. The estimated costs would be $1.54 less each for August 1997 and $1.54 more each for October 1997. Again, the Prevailing Wage term is not statistically significant in this equation, and the equation accounts for only 1 percent of the differences in project bids, so that these estimates are not statistically valid.

The total of $408 million in cost savings claimed in the LSC Report for the 676 additions are based on these figures: multiplying the total square footage of urban projects by $46.47 and the total square footage of rural projects by $55.20 and then summing those values. However, this estimate is totally based on an invalid equation with an adjusted R-square of only .01. Again, these are not actual costs, as they are based on the accepted bids rather than the final project costs.

4. Dodge Construction Data for Alterations

Table 23 in the LSC Report is used to generate the cost-savings figures for alterations projects. However, it does not actually analyze alterations projects! This

analysis differs from the rest because, as clearly stated in Appendix 2 to the LSC Report, the nonavailability of square-footage for alterations projects made it impossible to analyze the cost-per-square-foot as in the analysis for new construction and additions. Instead, regardless of how it is labelled, **Table 23 is NOT a regression analysis of alterations as it is labeled**. Instead, Table 23 reanalyzes the new construction and additions project to obtain an equation that the LSC Report uses to estimate cost savings for alterations.

The regression analysis of alterations in Table 23 is based on just combining the new construction and additions data. Page 58 explains this: "the alteration subset was analyzed using the estimated percentage saving by project *for the new and additions data subsets. The two subsets were combined, and a regression was run with estimated percentage savings as the dependent variable*" (emphasis added). [This can be substantiated by noticing that the number of projects in Table 23 (1126 observations) exactly equals the sum of the numbers for Tables 20 (256), 21 (194), and 22 (676).] Thus, Table 23 is a regression analyzing new construction and additions that is used to estimate the savings for alterations.

The regression analysis in Table 23 is intended to examine differences between projects in their "estimated percentage savings due to the absence of a prevailing wage," with that estimated percentage being based on the previous regressions. The cost per square foot for each project without the prevailing wage is estimated from the applicable regression in Tables 20, 21, or 22, based on when the project occurred ("Trend"), if it was in a Rural county, and the type of school (primary, junior high, senior high, or vocational). Next, an estimate is obtained for the cost with the prevailing wage by adding the PW coefficient in the corresponding table (for example, 3.99 for new construction-large projects in urban areas). Then these two estimated cost figures are compared to determine estimated cost savings. Hypothetically, if the cost per square foot without the prevailing wage for a project were estimated to be $135 and the cost with the prevailing wage estimated at $150, the "estimated percentage savings due to the absence of a prevailing wage" examined as the dependent variable in Table 23 for that project should be ($135-$150)/$150 = 10% savings. And if instead the cost without the prevailing wage were estimated to be $165 and the cost with the prevailing wage were estimated to be $150, the value for that project that is used in Table 23 should be ($165-$150)/$150 = 10% decreased savings.

This dependent variable for Table 23 is very shaky. It is based on regression equations in Tables 20-22 that account for only 1-3 of the differences in costs-per-square-foot and in which the prevailing wage is always statistically insignificant. The analysis in Table 23 is only as good as the regression estimates on which the dependent variable is based, and they are terribly poor estimates.

The explanatory variables used in the regression in Table 23 are 1) whether the school was in a rural county (Rural), 2) the type of school (Primary School, Junior High, Secondary High, or Vocational), 3) a time counter for when the construction occurred (Trend), and 4) the inflation-adjusted General Contract Value using Dodge data on General Contract Value and *Engineering News Record* data on inflation for construction cost and building cost ("ENR Value").

Table 23 reports that this regression accounts for 13% of the differences in the dependent variable (the adjusted R-Square value). How could it do even this well when it is based on regressions that are trivial? The use of General Contract Value as a predictor could be partly responsible. Also, because it combines new construction large projects, new construction small projects, and additions, this analysis is getting its explanatory power from the differences between those three different types of projects. Prevailing Wage has more of an effect on cost for additions in Table 22 than for new construction in Tables 20-21, so the regression pattern in Table 23 could be obtained if there were more additions for senior highs and vocational schools and fewer for junior highs as well as fewer additions

for rural counties than urban counties. (The data presentation in Appendix 2 does not permit a check as to whether that supposition is correct.) **Table 23 reflects the differences between different types of schools in additions versus new construction, NOT any observed differences in actual costs.**

Since the square-footage of additions projects is not in the Dodge data that the LSC Report analyzed, they could not conduct a regression analysis of alterations in the same manner that Table 23 was generated. **Specifically, Tables 20-22 could not be used to estimate project savings with Prevailing Wage as was done for the dependent variable in Table 23. Instead, the LSC used the equation in Table 23, based on new construction and additions, to estimate the project savings for alterations.** The coefficient column in Table 23 gives an equation:

Estimated Project Savings = -.251916 + (.000004 * General contract value, inflation adjusted) + (.001496 * time indicator) + (.005441 if the project is in a rural county) + (.026332 if it is a junior high school) - (.067186 if it is a senior high school) - (.089969 if it is a vocational school).

For each alterations project, the general contract value, the month of the bidding, whether it was in a rural county, and the type of school are plugged into this equation, to obtain an estimated projected savings. **This means that the estimated project savings for alterations projects are estimated on the basis of the savings found in the preceding analysis for new construction and additions, WHERE THE EFFECTS OF PREVAILING WAGES WERE ALWAYS NOT STATISTICALLY SIGNIFICANT.** Thus, the analysis in Table 23 is as sturdy and reliable as would be constructing a school building out of balsa wood on quicksand! **Since the regressions in Tables 20-22 accounted for only a trivial 1-3% of the differences in project values and since prevailing wage was never statistically significant in those equations, the dependent variable in Table 23 is invalid and using that regression to estimate effects for alterations is doubly invalid.**

To understand this equation in terms comparable to those used in section 3 above, for an urban primary school alterations project in September 1997, it estimates a cost savings in percentage terms of: -14.8692% + .0004*the General Contract Value (ENR in thousands of dollars) of the project. Table 38 shows that the General Contract Value for all urban alterations projects for 1997 was $38.9 million, for an average of $437,079 per project, so let's say a typical project is about $400,000. For a $400,000 project, this equation would estimate a savings of 14.71%. The savings would be .54% less for a rural primary project: 14.17%. The savings would be 2.63% less for an urban junior high project: 12.07%. The savings would be 6.72% more for an urban senior high project: 21.43%. And the highest savings would be an urban vocational school project: 23.71%. **But, the trend variable means that these savings would go away over time!** For example, by December 2001, the estimated savings for the urban primary school would be down to 7.08%. If this trend line were projected forward, by December 2008, for example, the urban primary school would be 1.90% more expensive because of the removal of prevailing wage legislation. Indeed, urban and rural primary and junior high $400,000 alterations projects would all be expected to cost more because of the removal of prevailing wage legislation well before December 2008.

The illustrations in the above paragraph are meant to demonstrate how the formula for alterations projects works. **However, the basic point is still that the formula is not statistically valid.** All the alterations estimates are based on regression equations for new construction and additions from Tables 20-22 in which prevailing wage was not statistically significant and in which only a trivial 1-3% of differences in project costs were being accounted for statistically.

5. The Discussion of Omitted Variables

Appendix 5 in the LSC Report provides a brief example of how an omitted variable can alter the results of a regression analysis. This seems to imply that the cost savings from Prevailing Wage are higher than estimated in Appendix 2, since taking into account whether the project received funding from the School Facilities Commission (SFC) would increase the effect found for the Prevailing Wage on cost-per-square foot of new construction-large projects. (The School Facilities Commission funding variable was not included in the main analysis in Appendix 2 because it is not coded with full accuracy -- they tried to match the SFC funding to the projects in the Dodge data, but a perfect match could not be made.)

However, the technical details of the new regression in Table 45 are not reported in an appropriate manner that permits an assessment of whether this regression provides statistically valid information. Even so, Table 45 does not report the new regression fully enough to tell if the inclusion of the formerly omitted variable makes a difference. The statistical significance of the explanatory variables is not reported in Table 45. It is not clear whether SFC is significant, nor is it clear whether the higher value found for Prevailing Wage is significant. And the R-squared is not reported, so the overall explanatory power of the new regression cannot be assessed.

6. Surveys Analyzed in the LSC Report

While the main focus of my report is on the regression analysis in the LSC Report, the surveys included in the Report also raise serious concerns.

6.1 Surveys of School Districts. On page 27, the Report measures quality of construction by asking districts about the quality of school construction before and after the exemption. However, several of the responses reprinted in the Report clearly tell more about the respondents' preconceived opinions on the prevailing wage than about the actual quality of the work. The LSC Report justifies this by referring to a Building Research Board report that indicated that quality depends on "one's point of view" and emphasized the importance of "conformance to adequately developed requirements" and "satisfaction of user's needs." However, measuring quality validly, even under this definition, would therefore require separate questions that directly ask about more specific parts of the process in a manner that would obtain objective replies. Additionally, quality cannot be fully assessed over a short period of time, since the goal for the construction is to be of high enough quality to be useful for a long term.

I am also concerned about the low response rates to the surveys. The January 1999 survey of district superintendents received replies from only 31 percent of the 611 districts and the August 2000 survey received answers from only 58 percent of the districts. The lack of response can bias the survey results. I am surprised that the LSC Report does not indicate the distribution of the responding districts around the state or even what proportion of the districts with funding from the School Facilities Commission responded to the survey.

6.2 Surveys of Contractors. The contractor surveys ask contractors to state what their bid prices would have been under prevailing wages. Not only is it difficult for people to answer hypothetical questions, but, as the LSC Report admits on page 18, non-union contractors have an incentive to overstate the prevailing wage price.

Additionally, there is no indication given of the response rate to this survey. Having a total of 774 responses to 3 waves of this survey (Table 2, page 19) strikes me as very low given the large number of districts and the likelihood of several contractors per district. The LSC Report acknowledges on page 18 that "many school districts and companies instead chose to not participate in our exploratory survey" but justifies the analysis of them because these surveys were intended "to narrow the range of the possible savings that may result from the exemption." However, it is not clear to me how reports from an unrepresentative set of respondents can narrow the range of savings.

6.3 Surveys on Construction Wages. Appendix 4 of the LSC Report analyzes Current Population survey data on wages. As the LSC Report admits on page 68, this survey is meant to represent the national population, so "the data obtained is not a representative sample of Ohio construction workers." The data from large-scale surveys of this type are usually not broken down into as small categories as here. Table 44 on page 74, for example, shows that several of the wage statistics in the preceding tables were based on just 1 or 2 respondents. The largest claimed gain in hourly pay rates in Table 40 is for glaziers, increasing 156.5%, but Table 44 shows that is based on comparing the wages for one non-union glazier before the exemption to one union glazier after the exemption. Sample surveys are designed to permit generalizations to larger populations, but certainly not from data for a single person. Averages are generally not computed in statistical reports when they are based on less than 10 or 20 instances, because they are susceptible to being thrown off by atypical cases. Furthermore, **statistical significance tests are usually performed to make sure that observed differences between categories are greater than would be expected given the differences observed within categories, but no significance tests are reported here.**

7. Summary and Conclusions

The estimated savings from S.B. 102 are based on the regression analysis. The equations in the coefficient columns of Tables 20 and 21 are used for new construction and the coefficient column of Table 22 for additions. The equations are estimated under Prevailing Wage and without Prevailing Wage, and the difference is taken as the estimated savings. Table 23 is used to estimate savings for alterations.

Using regression analysis in to estimate values is standard **if the regression equation has a good fit to the data. However, the R-Square shows that these equations do NOT fit the data, so estimated values based on them are worthless.** The actual estimates are based on regressions accounting for only 1-3% of the differences in observed cost-per-square-foot, which is not a reasonable level for valid estimates of the cost savings. Furthermore, the Prevailing Wage effects are NOT statistically significant in any of the reported tables. All estimates of "cost savings" are thus based on faulty use of statistical procedures. The alterations analysis is even more shaky, as it assumes the same process underlies cost savings on those projects as on other types of construction projects.

Herbert F. Weisberg

Herbert F. Weisberg

7/8/02

Date

References

Bilginsoy, Cihan, and Peter Philips. 2000. "Prevailing Wage Regulations and School Construction Costs: Evidence from British Columbia," *Journal of Education Finance*, 24: 415-32.

Fraundorf, Martha Norby, John Farrell, and Robert Mason. 1983. "The Effects of the Davis-Bacon Act on Construction Costs in Rural Areas," *The Review of Economics and Statistics*, 66:142-46.

Philips, Peter, Garth Mangum, Norm Waitzman, and Anne Yeagle. 1995. "Losing Ground: Lessons from the Repeal of Nine 'Little Davis-Bacon' Acts." University of Utah.

Philips, Peter. 1999. "Kentucky's Prevailing Wage Law: Its History, Purpose, and Effect."

Philips, Peter. 2001. "A Comparison on Public School Construction Costs: In Three Midwestern States that Have Changed Their Prevailing Wage Laws in the 1990s." University of Utah.

Prus, Mark. 1996. "The Effect of State Prevailing Wage Laws on Total Construction Costs."

Prus, Mark. 1999. "Prevailing Wage Laws and School Construction Costs: An Analysis of Public School Construction in Maryland and the Mid Atlantic States."

Wial, Howard. 1999. "Do Lower Prevailing Wages Reduce Public Construction Costs?" Harrisburg, PA: Keystone Research Center.

June 2002

CURRICULUM VITAE

HERBERT F. WEISBERG

Department of Political Science
2140 Derby Hall; 154 N. Oval Mall
The Ohio State University
Columbus, Ohio 43210-1373

Phone: (614) 292-6572
Fax: (614) 292-1146
Home: (614) 431-9545
E-mail: Weisberg.1@osu.edu

Marital Status: Married

Education:
B.A., Political Science (summa cum laude) & Mathematics, University of Minnesota, 1963
Ph.D., Political Science, University of Michigan, 1968

Fields of Specialization:
Political Behavior: Electoral behavior; Legislative behavior
Methodology: Survey research; Statistics and data analysis; Scaling; Roll call analysis

Academic Appointments:
Ohio State University: Professor of Political Science, 1977-
Associate Professor of Political Science, 1974-77

University of Michigan:
Associate Professor of Political Science, 1973-74
Assistant Professor of Political Science, 1969-73
Lecturer in Political Science, 1967-69
Predoctoral Instructor in Political Science, 1966-67

Visiting Appointments:
University of Rochester, Visiting Assistant Professor of Political Science, 1972
California Institute of Technology, Sherman Fairchild Distinguished Scholar, 1975-76
University of California, Irvine, Visiting Professor of Social Sciences, 1978
University of Essex, Colchester, England, Social Science Research Council Data Archive, Visiting Fellow, 1983
Rice University, Visiting Professor (Visiting Researcher), 1992

Summer Institutes:
Inter-University Consortium for Political and Social Research Summer Program at University of Michigan, Lecturer, 1966-67, 1970-73, 1975, 1977
International Social Science Council Summer Program at University of Amsterdam, Senior-Lecturer, 1974
Norwegian Social Science Data Services Training Course at University of Bergen, Lecturer, 1978
Summer Faculty Workshop on Undergraduate Instruction in Data Analysis at Ohio State University, microcomputer module, 1992

Editorial Activities

Co-editor: *American Journal of Political Science*, 1979-82
Special Issue Editor: *Electoral Studies*, September 1998

Editorial Board:
American Journal of Political Science, 1975-78, 1983-85
American Journal of Sociology, 1977-78
Political Analysis, 1988-91
Social Science Computer Review, 1984-95
American Politics Quarterly, 1987-
Sage Quantitative Applications in the Social Science series, 1988-
Electoral Studies, 1996-
Journal of Politics, 2000-

Book Reviews: *American Political Science Review*
Netherlands Journal of Sociology
Public Opinion Quarterly

Software Reviews: *Social Science Computer Review*

Professional Activities

Officer: President, Midwest Political Science Association, 2001-02; President-Elect, 2000-01; Vice-President, 1983-85

Section President: Elections, Public Opinion, and Voting Behavior Organized Section, American Political Science Association, Founding President 1993-96

Delegation Member: American Political Science Association Delegate to Japanese Political Science Association meetings, Sapporo, Japan, 1996

Council Member:
Inter-University Consortium for Political and Social Research, 1984-87
American Political Science Association, ex-officio, 1982-83
Midwest Political Science Association, ex-officio, 1979-82

Panel Member: National Science Foundation, Political Science Review Panel, 1985-86

Committee Service:
Chair, Summer Training Program Advisory Committee Inter-university Consortium for Political and Social Research, 1984-87
American Journal of Political Science editor selection committee, 1980, 1983
Best paper committee, Legislative Studies Section of American Political Science Association, 1985-86
Franklin Burdette Pi Sigma Alpha Award Committee for best paper at American Political Science Association annual meeting, 1988-89

Heinz Eulau Award Committee for best article published in the 1996 *American Political Science Review*, 1997
Chair, Emerging Scholar Award Committee for Elections, Public Opinion, and Voting Behavior section of the American Political Science Association, 2001
Inter-university Consortium for Political and Social Research, nominating committee, 2001

Conference Activities

Program Chair: American Political Science Association Annual Meeting, Chicago, 1983

Conference Organizer:
Mathematical Social Science Board sponsored conference on Mathematical Models of Congress, Aspen, Colorado, 1974
National Science Foundation sponsored conference on Voter Turnout (with Richard A. Brody and Bernard N. Grofman), San Diego, California, 1979
Sessions on using statistical computer programs at American Political Science Association annual meeting, 1993
Summer meetings of Political Methodology section of American Political Science Association (with Janet Box-Steffensmeier), Columbus, 1997
Panels in honor of Donald E. Stokes, American Political Science Association annual meeting, Washington, D.C., 1997
Presidential Parties Panel in honor of John H. Kessel, Midwest Political Science Association annual meeting, Chicago, 1999
Legislative Panels in honor of Samuel C. Patterson, American Political Science Association annual meeting, Washington, D.C., 2000
Mershon Center sponsored conference on Assessing the Vitality of Electoral Democracy in the United States: The 2000 Election, Columbus, 2001

Section Head:
Public Opinion, Elections, and Voting Behavior for the Midwest Political Science Association Annual Meetings, Milwaukee, 1982
Analytical Political Theory and Methodology for the Midwest Political Science Association Annual Meetings, Chicago, Illinois, 1988

Awards

Recognitions: *Who's Who in America*, 44th ed., 1986-87 - onward

Honorary Societies: Phi Beta Kappa, 1962; Pi Sigma Alpha, 1967; Phi Kappa Phi, 1967

Fellowships:
Woodrow Wilson Fellowship (Honorary), 1963
NDEA Title IV Fellowship in Political Behavior, 1963-66
Rackham Post-Doctoral Fellowship, 1969-70
Rackham Grants, University of Michigan, 1971, 1974

Research Grants:
National Science Foundation, "Partisanship and Voting," 1983-85
Dirksen Center for Congressional Studies, "Senate Voting on Confirmation of Supreme Court Justices," 1987-88
National Science Foundation, Summer Workshop for Data Analysis for Undergraduate Faculty, 1993 (supplement), co-principal investigator (with A. Clausen)
National Science Foundation, Interdisciplinary Social Sciences Research Facility, 1997-99, co-principal investigator (with Robert Kaufman)
Dissertation Grant: Dissertation supervisor on National Science Foundation dissertation research grant for Barry Burden, 1997-98. This dissertation won the Council of Graduate Schools Annual Award for the Best Dissertation in the Social Sciences.

Internal Ohio State University Grants:
Curriculum Development grant for an undergraduate data analysis course, 1992-93
Grants for departmental Microcomputer Laboratory, 1994, 1997
Funding of The Ohio Political Survey (TOPS) post-election survey, 1994, 1998
Honors program grant for new honors course on data analysis, 1997
Survey Research Unit Fellowship, 1998
Faculty Innovator Grant for WebCT distance learning dimensional class at Ohio State University and the Universities of Illinois, Minnesota, and Wisconsin, 2000

Major Ohio State University Service

University:
Provost's Excellence Advisory Committee (evaluated proposals for selective excellence funding), 1985-86
Provost's Special Arts and Sciences Curriculum Committee (revamped undergraduate curriculum), 1987-90
Chair, Statistical Software Advisory Committee, 1993-95
Research Computing Advisory Committee, 1995-98
Graduate School PEGS Scholarship Allocation Committee, 1998

Center for Survey Research:
Senior Faculty Associate, 2000-

College:
Promotion and Tenure Advisory Committee for Social and Behavioral Sciences College, 1984-86
Center for Human Relations Research Advisory Committee, 1994-95
Survey Research Advisory/Oversight Committee, 1994-96, 1997-

Department:
Faculty Recruitment Search Committee, 1984-89
Political Psychology Search Committee, 1994-95

Chair, American Politics Search Committee, 1995-97
American Politics Search Committee, 1998-99
Political Theory Search Committee, 2000-01

Coordinator, Theory and Methods Field, 1995-97, 2000-01
Coordinator, American Politics Field, 1997-99, 2001-02

Department Executive Committee, 1995-99, 2000-01
Graduate Studies Committee, 1997-98

Director, Political Research Laboratory (formerly "Polimetrics"), 1993-99 (including such activities as purchasing computers, planning an electronic classroom, and coordinating surveys)
Chair, Equipment Committee, 1987-88
Chair, Research Support Committee, 1992-93
Lab Committee, 2000-02
Official Representative to Inter-university Consortium for Political and Social Research, 1993-99

PUBLICATIONS

Ph.D. Dissertation:

"Dimensional Analysis of Legislative Roll Calls," University of Michigan, 1968.

Books:

Niemi and Weisberg, *Controversies in Voting Behavior*, 4th ed., Washington, D.C.: Congressional Quarterly Press, 2001 (3rd ed., CQ Press, 1992; 2nd ed., CQ Press, 1984; 1st ed., *Controversies in American Voting Behavior*, San Francisco: W.H. Freeman, 1976).

Weisberg and Box-Steffensmeier, *Reelection 1996: How Americans Voted*, Chatham, NJ: Chatham House, 1999.

Weisberg, Heberlig, and Campoli, *Classics in Congressional Politics*, Longman, 1999.

Weisberg and Patterson, *Great Theatre: The American Congress in the 1990s*, Cambridge: Cambridge University Press, 1998.

Weisberg, Krosnick, and Bowen, *Introduction to Survey Research, Polling, and Data Analysis*, 3rd ed., Newbury Park, Cal.: Sage, 1996 (2nd ed., *Introduction to Survey Research and Data Analysis*, Glenview, Ill.: Scott, Foresman, 1989; 1st ed., Weisberg and Bowen, San Francisco: W.H. Freeman, 1977).

Weisberg, *Democracy's Feast: Elections in America*, Chatham, NJ: Chatham House, 1995.

Weisberg, *Central Tendency and Variation*, monograph for the Sage series on Quantitative Applications in the Social Sciences, Newbury Park, Cal.: Sage, 1992. Reprinted as Part I of Michael S. Lewis-Beck, ed., *Basic Statistics*, Singapore: Toppan Publishing, 1993.

Niemi and Weisberg, *Classics in Voting Behavior*, Washington, D.C.: Congressional Quarterly Press, 1992.

Weisberg, *Political Science: The Science of Politics*, New York: Agathon Press, 1986.

Asher, Weisberg, Kessel, and Shively, *Theory Building and Data Analysis in the Social Sciences*, Knoxville, Tennessee: University of Tennessee Press, 1984.

Richardson, Asher, and Weisberg, *Comparative Political Participation*, (a computer-related teaching package), Campus Verlag, 1984.

Bowen and Weisberg, *Introduction to Data Analysis*, San Francisco: W.H. Freeman, 1980.

Niemi and Weisberg, *Probability Models of Collective Decision Making*, Columbus, Ohio: Charles E. Merrill, 1972.

Recent Conference Papers:

Weisberg, "Reelection and Succession in U.S. Presidential Elections," paper presented at the annual meeting of the Midwest Political Science Association, April 2002.

Weisberg, "Partisanship and Incumbency in Presidential Elections," paper presented at a conference on Parties, Partisanship, and Partisan Change, Vanderbilt University, October 2001, under review for a special issue of *Political Behavior*.

Weisberg and Hill, "The Succession Presidential Election of 2000: The Battle of the Legacies," paper presented at the annual meeting of the American Political Science Association, August 2001.

Weisberg, "The Structure and Determinants of Moral Values and Cultural Issues in Contemporary American Politics," revise-and-resubmit at a major journal, revised version of paper originally presented at the annual meeting of the Midwest Political Science Association.

Tanaka and Weisberg, "Political Independence and the Loss of Faith," paper presented at August 2000 meeting of the Losing Faith in Democracy work group in Quebec City.

Weisberg, "Distance Learning in Advanced Methods Training," presented at the annual meeting of the Midwest Political Science Association, 2001.

Weisberg "Another Look at the Structure of Attitudes toward Presidential Candidates," presented at the annual meeting of the Midwest Political Science Association, 2000.

Articles and Selected Chapters:

Weisberg, "The Party in the Electorate as a Basis for More Responsible Parties," in John Green and Paul Herrnson, *Responsible Partisanship? The Evolution of American Political Parties Since 1950*, University Press of Kansas, 2003, in production

Weisberg and Greene, "The Political Psychology of Party Identification," in MacKuen and Rabinowitz, *Electoral Democracy*, University of Michigan Press, 2002, in production.

Weisberg and Tanaka, "Change in the Spatial Dimensions of Party Conflict: The Case of Japan in the 1990s," *Political Behavior*, March, 2001, 75-101.

Weisberg, "Political Partisanship," in Robinson, Shaver, and Wrightsman, *Measures of Political Attitudes* (revised edition), Academic Press, 1999, pp. 681-736.

Weisberg, "Nonlinear Models of Electoral Change: The Implications of Political Time and Chaos Theory for the Study of Mass Political Behavior," *Electoral Studies*, September, 1998: 369-82.

Weisberg, Heberlig, and Campoli, "The Study of Congress: Methodologies and the Pursuit of Theory," in Weisberg, Heberlig, and Campoli, *Classics in Congressional Politics*, 1999, pp. 2-18.

Weisberg and Box-Steffensmeier, "Reelection: The 1996 U.S. Election" in Weisberg and Box-Steffensmeier, *Reelection 1996: How Americans Voted*, 1999, pp. 1-20.

Weisberg and Mockabee, "Attitudinal Correlates of the 1996 Presidential Vote," in Weisberg and Box-Steffensmeier, *Reelection 1996: How Americans Voted*, 1999, pp. 45-69.

Kessel and Weisberg, "Comparing Models of the Vote: The Answers Depend on the Questions," in Weisberg and Box-Steffensmeier, *Reelection 1996: How Americans Voted*, 1999, pp. 88-98.

Weisberg and Patterson, "Theatre in the Round: Congress in Action," in Weisberg and Patterson, *Great Theatre*, Cambridge: Cambridge University Press, 1998, pp. 3-30.

Patterson and Weisberg, "'The Play's the Thing': Congress and the Future," in Weisberg and Patterson, *Great Theatre*, Cambridge: Cambridge University Press, 1998, pp. 271-89.

Arnold and Weisberg, "Parenthood, Family Values, and the 1992 Presidential Election," *American Politics Quarterly*, April, 1996: 194-220.

Weisberg, "Democracy's Feast: The 1992 U.S. Elections," in Weisberg, *Democracy's Feast*, 1995, pp. 1-26.

Weisberg and Kimball, "Attitudinal Correlates of the 1992 Presidential Vote: Party Identification and Beyond," in Weisberg, *Democracy's Feast*, 1995, pp. 72-111.

Weisberg, Haynes, and Krosnick, "Social Group Polarization in 1992," in Weisberg, *Democracy's Feast*, 1995, pp. 241-59.

Mattei and Weisberg, "Presidential Succession Effects in Voting," *British Journal of Political Science*, 1994:269-90.

Weisberg, "The Motor-Voter Bill Is Desirable," in Rose, *Controversial Issues in Presidential Selection*, 2nd ed., Albany, NY: State University of New York Press, 1994, pp. 224-33.

Mock and Weisberg, "Political Innumeracy: Encounters with Coincidence, Improbability, and Chance," *American Journal of Political Science*, November, 1992: 1023-46.

Weisberg and Smith, "The Influence of the Economy on Party Identification in the Reagan Years," *Journal of Politics*, November, 1991: 1077-92.

Niemi, Reed, and Weisberg, "Partisan Commitment," *Political Behavior*, September, 1991: 213-20.

Felice and Weisberg, "The Changing Importance of Ideology, Party, and Region in Confirmation of Supreme Court Nominees, 1953-1988," *Kentucky Law Journal*, 1989: 509-30.

Weisberg, "Progress in Social Science Research Methodology," in Eulau, *Social Science at the Crossroads*, Agathon, 1989, pp. 38-50.

Allsop and Weisberg, "Measuring Change in Party Identification in an Election Campaign," *American Journal of Political Science*, November, 1988: 996-1017.

Weisberg, "The Demographics of a New Voting Gap: Marital Differences in American Voting," *Public Opinion Quarterly*, Fall, 1987: 335-43.

Weisberg, "Cabinet Transfers and Departmental Prestige," *American Politics Quarterly*, April, 1987: 238-53.

Goodman, Gross, Boyd, and Weisberg, "Constituency Service as a Legislative Goal," *Polity*, Summer, 1986: 707-19.

Weisberg, "The Science of Politics and Political Change," in Weisberg, *Political Science: The Science of Politics*, 1985, pp. 3-10.

Weisberg, "Model Choice in Political Science: The Case of Voting Behavior Research," in Weisberg, *Political Science: The Science of Politics*, 1985, pp. 284-300.

Weisberg, "The Fundamentals of Data Analysis," in Asher, Weisberg, Kessel, and Shively, *Theory-Building and Data Analysis in the Social Sciences*, 1984, pp. 151-85. Reprinted in Walter F. Abbott, *Surrogate Juries*, Philadelphia: American Law Institute, 1990.

Weisberg, "Scaling Objectives and Procedures," in Asher, Weisberg, Kessel, and Shively, *Theory-Building and Data Analysis in the Social Sciences*, 1984, pp. 329-55.

Weisberg, "Alternative Baseline Models and their Implications for Understanding Coalition Behavior in Congress," *Journal of Politics*, August, 1983: 657-71.

Weisberg, "A New Scale of Partisanship," *Political Behavior*, 1983: 363-76.

Weisberg and Grofman, "Candidate Evaluations and Turnout," *American Politics Quarterly*, April, 1981: 197-219.

Friedman and Weisberg, "Interpreting the First Eigenvalue of a Correlation Matrix," *Educational and Psychological Measurement*, Spring, 1981: 11-21.

Weisberg, "A Multidimensional Conceptualization of Party Identification," *Political Behavior*, 1980: 33-60. Reprinted in Niemi and Weisberg, *Controversies in Voting Behavior*, Washington, D.C.: Congressional Quarterly Press, 1984; *Classics in Voting Behavior*, Washington, D.C.: Congressional Quarterly Press, 1992.

Weisberg and Fiorina, "Candidate Preference Under Uncertainty," in Pierce and Sullivan, *The Electorate Reconsidered*, Sage Publications, 1980.

Weisberg, "Evaluating Theories of Congressional Roll Call Voting," *American Journal of Political Science*, August, 1978: 554-77.

Asher and Weisberg, "Voting Change in Congress," *American Journal of Political Science*, May, 1978: 391-425. Reprinted in Glenn R. Parker, *Studies of Congress*, Washington, D.C.: Congressional Quarterly Press, 1985; Weisberg, Heberlig, and Campoli, *Classics in Congressional Politics*, Longman 1999.

Ferejohn, Fiorina, and Weisberg, "Toward a Theory of Legislative Decision," in Ordeshook and McKelvey, *Game Theory and Political Science*, New York University Press, 1978.

Niemi and Weisberg, "Single-peakedness and Guttman Scales," *Public Choice*, Winter, 1974: 33-45.

Weisberg, "Models of Statistical Relationship," *American Political Science Review*, December, 1974: 1638-55.

Weisberg, "Dimensionland: An Excursion into Spaces," *American Journal of Political Science*, November, 1974: 743-76. Reprinted in Asher, Weisberg, Kessel, and Shively, *Theory Building and Data Analysis in the Social Sciences*, Knoxville, Tennessee: University of Tennessee Press, 1984.

Weisberg and Niemi, "A Pairwise Probability Approach to the Likelihood of the Paradox of Voting," *Behavioral Science*, March, 1973: 109-17.

Rusk and Weisberg, "Perceptions of Presidential Candidates: Implications for Electoral Change," *Midwest Journal of Political Science*, August, 1972: 388-410. Reprinted in Niemi and Weisberg, *Controversies in American Voting Behavior*, San Francisco: W. H. Freeman, 1976.

Weisberg, "Scaling Models for Legislative Roll-Call Analysis," *American Political Science Review*, December, 1972: 1306-15.

Niemi and Weisberg, "Substantive Applications of Collective Decision-Making Models," in Niemi and Weisberg, *Probability Models of Collective Decision Making*, 1972, pp. 1-20.

Niemi and Weisberg, "The Effects of Group Size on Collective Decision Making," in Niemi and Weisberg, *Probability Models of Collective Decision Making*, 1972, pp. 125-48.

Weisberg and Niemi, "Probability Calculations for Cyclical Majorities in Congressional Voting," in Niemi and Weisberg, *Probability Models of Collective Decision Making*, 1972, pp. 204-31.

Niemi and Weisberg, "A Critique of Probability Modeling," in Niemi and Weisberg, *Probability Models of Collective Decision Making*, 1972, pp. 378-95.

Weisberg, "L'étude comparative des scrutins législatifs," *Revue Française de Sociologie*, April-June, 1971: 151-76.

Weisberg and Rusk, "Dimensions of Candidate Evaluation," *American Political Science Review*, December, 1970: 1167-85. Reprinted in Samuel A. Kirkpatrick, *Quantitative Analysis of Political Data*, Columbus, Ohio: Charles E. Merrill, 1974.

Niemi and Weisberg, "A Mathematical Solution for the Probability of the Paradox of Voting," *Behavioral Science*, July, 1968: 317-23.

Other Articles:

Weisberg, "Remembrance of Warren E. Miller," *Votes and Opinions*, June/July 2000: 12-13, 31-32.

Weisberg, Macdonald, and Rabinowitz, "Essays in Honor of Donald E. Stokes," *Electoral Studies*, September, 1998: 275-80.

Weisberg, "The 1996 Election: Independents on the Decline," *Votes and Opinions*, March/April 1998: 14-15.

Weisberg and Wilcox, "APSA/JPSA Exchange: A Continuing Tradition," *P.S.: Political Science and Politics*, June, 1997: 245.

Weisberg, "The 1994 Midterm Elections: A Possible Reappraisal," *Votes and Opinions*, Oct/Nov. 1995: 10-11, 31.

Weisberg, "The Silver Summer: The ICPSR Summer Training Program's 25th Anniversary," *P.S.: Political Science and Politics*, Spring, 1987: 67-71.

Weisberg "Philip E. Converse: An Intellectual History of the APSA President," *P.S.: Political Science and Politics*, Fall, 1983: 717-22.

Computer Articles:

Kimball and Weisberg, "Data Analysis Programs for the Undergraduate Classroom," *Social Science Computer Review*, Fall, 1995: 381-88.

Weisberg and Smith, "The Advent of Dynamic Graphics Statistical Computing," *P.S.: Political Science and Politics*, Summer, 1993: 228-32.

Weisberg, "Social Science Data Distribution on CD-ROMs," *Social Science Computer Review*, 1993: 99-103.

Weisberg and Hennessy, "Teaching Data Analysis in an Interactive Graphics Environment," *P.S.: Political Science and Politics*, Fall, 1991: 505-10.

Weisberg, "Measures of Association," *Political Science Micro Review*, 1983, issue 3.

Weisberg, "Microcomputers in Political Science," *News for Teachers of Political Science*, Summer, 1983.

Schneider and Weisberg, "An Interactive Graphics Approach to Dimensional Analysis," *Behavioral Research Methods and Instrumentation*, March, 1974: 185-94.

2011 Wage and Benefits of Ohio Trades

OSBCTC

Ohio's Construction Industry

CEA

Ohio State Building and Construction Trades Council

Money Spent on Health Insurance, Pension, Annuity and Apprenticeship For 2010

Trade	Locals Reporting	Health Insurance	Pension	Annuity	Apprenticeship
Asbestos Workers	7 out of 7 Reporting	$ 9,974,118.96	$ 9,262,149.10	$ 896,377.80	$ 695,356.08
Boilermakers	3 out of 4 Reporting	$ 13,183,143.48	$ 20,003,410.85	$ -	$ 1,295,258.57
Bricklayers	For all of Ohio	$ 20,138,706.10	$ 19,441,898.40	$ -	$ 603,313.06
Carpenters	For all of Ohio	$ 78,585,000.00	$ 91,295,000.00	$ -	$ 7,285,000.00
Elevator Constructors	For all of Ohio	$ 2,483,000.00	for all categories	$ -	$ -
IBEW	14 out of 21 Reporting	$ 97,050,951.84	$ 76,618,468.21	$ 18,761,487.33	$ 8,491,832.73
Iron Workers	For all of Ohio	$ 54,874,313.00	$ 59,276,120.00	$ -	$ 10,400,000.00
Laborers	For all of Ohio	$ 74,099,062.00	$ 37,852,187.00	$ -	$ 4,941,392.00
Operating Engineers	For all of Ohio	$ 66,547,120.00	$ 88,640,763.00	$ -	$ 7,852,560.00
Painters	For all of Ohio	$ 16,329,801.32	$ 16,576,937.32	$ -	$ 634,000.00
Plasterers & CM	5 out of 14 Reporting	$ 11,865,000.00	$ 11,739,000.00	$ -	$ 840,000.00
Roofers	2 out of 6 Reporting	$ 1,670,157.72	$ 1,383,803.23	$ -	$ 107,171.40
Sheet Metal Workers	1 out of 2 Reporting	$ 2,872,158.00	$ 3,907,554.00	$ -	$ 253,238.00
Teamsters	0 out of 1 Reporting	$ 6,951,095.00	$ 5,862,428.00	$ -	$ 126,666.00
UA	For all of Ohio	$ 75,156,710.16	$ 102,322,195.61	$ -	$ 6,190,250.65
Grand Total - All Trades		$ 531,780,337.58	$ 544,181,914.72	$ 19,657,865.13	$ 49,716,038.49

OHIO'S CONSTRUCTION INDUSTRY PULLS ITS OWN WEIGHT

Ohio's Prevailing Wages for Heavy, Highway, Bridge and Utility Construction are currently reflective of the wages and benefits collectively bargained by and between the Heavy, Highway, Bridge and Utility Construction Industry and the unions that perform this type of work (Carpenters, Cement Masons, Laborers, Operating Engineers, and Teamsters). Included in the prevailing wages are provisions for payments into pension, health insurance and education, training and apprenticeship funds. Though these funds are strictly regulated by state and federal laws, they are devoid of any public funding. Construction employers and employees fund the accounts. The funds are jointly and professionally managed by contractor and union trustees, and their purpose is to provide private retirement security, health insurance benefits and skills and safety training for the industry. Again, it is important to stress that these funds are strictly monitored and must maintain adequate funding levels in order to meet liabilities. Because of current economic conditions, it is often necessary for fund managers to cut benefit levels and/or adjust employer and employee contribution levels in order to maintain proper funding levels. Again, no public dollars are involved. By virtue of its own investment and proactive management of these funds, Ohio's construction industry promotes the long term security of its workers without public assistance. The impact of eliminating or severely diminishing these funds as a result of repealing Ohio's prevailing wage laws would be devastating, not only to Ohio's construction industry, but also to Ohio's economy. Shrinking and/or failing multi-employer Pension and Insurance Funds would shift the financial burden of Ohio's construction industry employees to the State by way of their increased reliance on state unemployment benefits, and State Medicaid for health care previously covered by industry funds. In addition, Federal Pension laws would hold Ohio's contracting companies responsible for any unfunded liabilities of withered retirement funds, putting many out of business overnight. In order to demonstrate the scope of Ohio's construction industry benefit plans, the following table shows the contribution levels into the pension, health insurance, and education, training and apprenticeship funds of the Construction Industry during 2010. The list reflects the total number of work hours reported to each of the union's funds in 2010 multiplied by the Highway-Heavy Contract Contribution rates for each.

UNION	HOURS	PENSION	HEALTH INS	ED.TRAIN APPREN
Laborers	14,118,264	$37,413,399	$73,414,972	$4,941,391
Oper. Engineers	13,309,424	$66,547,120	$88,640,763	$7,852,560
Carpenters	15,500,000	$78,585,000	$91,295,000	$7,285,000
Cement Mason	2,100,000	$11,865,000	$11,739,000	$840,000
Teamsters	1,162,379	$6,951,095	$5,862,248	$126,666
Totals	46,190,067	$201,361,614	$270,952,163	$21,045,618

CONSTRUCTION EMPLOYERS ASSOCIATION

950 Keynote Circle, Suite 10
Cleveland, OH 44131-1802
e-mail: tlinville@ceacisp.org

(216) 398-9860
(216) 398-9801
web site: www.ceacisp.org

Construction Employers Association (CEA) represents over 100 large and small businesses that perform commercial architectural building construction in Northeast Ohio utilizing the following local tradesmen and women to do so: Bricklayers, Carpenters, Cement Masons, Glaziers, Iron Workers, Laborers, Operating Engineers, Plasterers, Roofers, Tapers and Tile Layers. Ohio's Prevailing Wages for work performed by Ohioans in Northeast Ohio are currently reflective of the wages and benefits collectively bargained by and between the Commercial Building Construction Industry and the unions that perform this type of work.

The prevailing wage includes funding for retirement, health & welfare benefits and industry training (apprenticeship) that simply would not exist without prevailing wage. Though these funds are strictly regulated by state and federal laws, they are devoid of any public funding. Instead, Northeast Ohio businesses and their employees fund the accounts. In fact, because of current economic conditions, it is often necessary for fund managers to cut benefit levels and/or adjust employer and employee contribution levels in order to maintain proper funding levels. By virtue of its own investment and proactive management of these funds, Northeast Ohio's commercial construction industry promotes long-term careers and support for Northeast Ohio families and communities.

The impact of eliminating or severely diminishing these funds as a result of repealing Ohio's prevailing wage laws would be devastating, not only to Northeast Ohio's construction industry, but also to Northeast Ohio's economy. Shrinking and/or failing multi-employer Pension and Insurance Funds would shift the financial burden of Northeast Ohio's construction industry employees and their families to the State by way of their increased reliance on state unemployment benefits, and State Medicaid for health care previously covered by industry funds. In addition, Federal Pension laws would hold Ohio's contracting companies responsible for any unfunded liabilities of withered retirement funds, putting many out of business overnight.

In order to demonstrate the impact the Northeast Ohio construction industry benefit have on Northeast Ohioans, local communities and the State of Ohio, the following table shows the contribution levels into the pension, health insurance, and education, training and apprenticeship funds during 2010. The list reflects the total number of work hours reported to each of the trades' funds in 2010 multiplied by the commercial building construction rates for each.

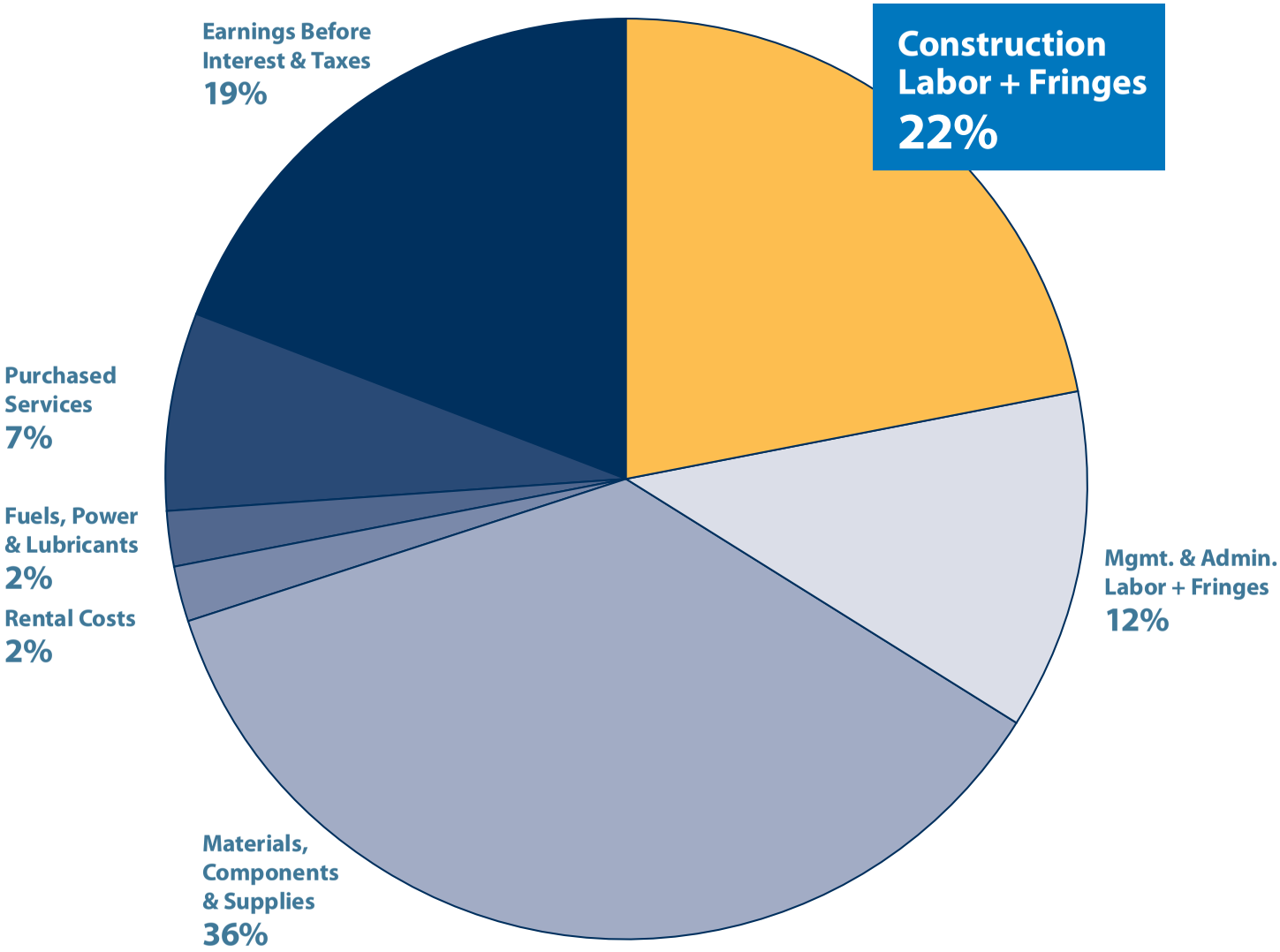
TRADE	HOURS	HEALTH & WELFARE	RETIREMENT	APPRENTICE & TRAINING
BRICKLAYERS	846,042	$5,388,708.89	$4,714,387.31	$169,208.47
CARPENTERS	2,164,676	$13,347,374.79	$11,173,858.61	$924,954.81
CEMENT MASONS	230,334	$1,289,867.94	$1,727,501.70	$78,313.41
GLAZIERS	239,642	$1,191,021.73	$1,655,927.60	$71,892.66
IRON WORKERS	921,705	$5,161,550.13	$10,922,208.75	$350,248.04
LABORERS	1,902,657	$7,370,773.54	$16,613,248.49	$206,528.38
OPERATING ENGINEERS	347,268	$2,312,803.95	$1,736,339.30	$208,360.72
PLASTERERS	29,437	$153,070.27	$206,056.13	$2,943.66
ROOFERS	430,511	$3,379,507.58	$3,250,354.43	$73,186.79
TAPERS	161,604	$801,557.97	$1,011,643.40	$53,329.46
TILE LAYERS	76,032	$456,193.20	$425,780.32	$15,206.44
TOTALS	**7,349,909**	**$40,852,430**	**$53,437,306**	**$2,154,173**

Costs

Labor Share of Construction Costs Pie Chart

5

Labor Share of Non-Residential Construction Value



Source: 2007 Economic Census, Construction Industry Series

2010 Signatory Contracts

6

Craft	Number of Contractors
Asbestos	77
Boilermakers	819
Bricklayers	950
Carpenters	9600
Elevator Constructors	23
IBEW	590
Iron Workers	1200
Laborers	1190
Operating Engineers	1850
Painters	345
Plasterers-Cement Masons	777
Roofers	89
Sheet Metal Workers	270
UA	780

Total Contractors 18,560

Information collected December 21, 2010

Actions need to be Taken

Legislation Contact Calendar
2011 Senator Map/Information
2011 Representative Map/ Information

7

Actions Need to be Taken

What you need to do to help educate Legislators regarding the importance of Prevailing Wage (PW) in Ohio:

- **Please meet with every Senator and State Representative** in your jurisdiction to discuss Prevailing Wage. Please be prepared with handouts on prevailing wage for your meeting with each Senator/Representative. If he/she does not fully understand PW and the issues that we are facing, please attempt to explain the need for prevailing wage and provide them with information regarding PW.

- **Complete the attached form** for each Senator/Representative that you meet with.

- **Return the form to our office** via fax (614) 461-1328 or email malinda@ohiostatebtc.org

Please feel free to copy the attached form as needed.

222

Ohio State Building & Construction Trades Council
East Town Street, Columbus, Ohio 43215 Telephone: 614.221.3682 –
Fax: 614.461.1328

Legislator's Name _____ Date of meeting _____

Name of Person meeting with Legislator _____

Local Affiliation _____ Phone Number _____

Did a Contractor/Rep. attend with you? ☐ Yes ☐ No

If yes, Name of Contractor/Rep. _____

Please rate this Legislator's knowledge of Prevailing Wage:
- ☐ None
- ☐ Little
- ☐ Some
- ☐ Understands

Does this Legislator support Prevailing Wage in its current form? ☐ Yes ☐ No

If no, why? _____

_____

What change does the Legislator deem necessary to preserve Prevailing Wage? _____

_____

Did you leave any information regarding Prevailing Wage with this Legislator? ☐ Yes ☐ No

Have you supported this Legislator with monetary or in-kind contributions in the past? ☐ Yes ☐ No

If yes, to what extent? _____

Oct-11

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	3	Asbestos Workers			7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	Boilermakers			28	29
30	31					

Jan-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
8	9	Iron Workers			13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	Laborers			

Apr-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	Plasterers/Cement Masons					7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	Elevator Constructors & Roofers					28
29	30					

Nov-11

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	Bricklayers			18	19
20	21	22	23	24	25	26
27	28	29	30			

Feb-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Laborers			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	Operating Engineers			24	25
26	27	28	29			

May-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	Sheet Metal Workers			18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Dec-11

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	IBEW			9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Mar-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	Painters			16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Jun-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	UA			8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	Asbestos Workers			29	30

Jul-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	Boilermakers			20	21
22	23	24	25	26	27	28
29	30	31				

Aug-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1	2	3	4
5	6	Bricklayers			10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	IBEW

Sep-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
IBEW						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	Iron Workers			21	22
23	24	25	26	27	28	29
30						

Oct-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8	Laborers			12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	Operating Engineers		

Nov-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Operating Engineers				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	Painters			23	24
25	26	27	28	29	30	

Dec-12

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
						1
2	3	4	5	6	7	8
9	Plasterers/Cement Masons					15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Jan-13

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
		1	2	3	4	5
6	Elevator Constructors & Roofers					12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	Sheet Metal Workers			

Feb-13

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Sheet Metal Workers					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	UA	21	22	23
24	25	26	27	28		

Mar-13

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Asbestos Workers -	October 2-8, 2011	&	June 24-30, 2012
Boillermakers -	October 23-29, 2011	&	July 15-21, 2012
Bricklayers -	November 13-19, 2011	&	August 5-11, 2012
Elevator Constructors -	April 22-28, 2012	&	January 6-12, 2013
IBEW -	December 4-10, 2011	&	August 26 - September 1, 2012
Iron Workers -	January 8-14, 2012	&	September 16-22, 2012
Laborers -	January 29 - February 4, 2012	&	October 7-13, 2012
Operating Engineers -	February 19-25, 2012	&	October 29 - November 3, 2012
Painters -	March 11-17, 2012	&	November 18-24, 2012
Plasterers/Cement Masons -	April 1-7, 2012	&	December 9-15, 2012
Roofers -	April 22-28, 2012	&	January 6-12, 2013
Sheet Metal Workers -	May 13-19, 2012	&	January 27 - February 2, 2013
UA -	June 3-9, 2012	&	February 17-23, 2013

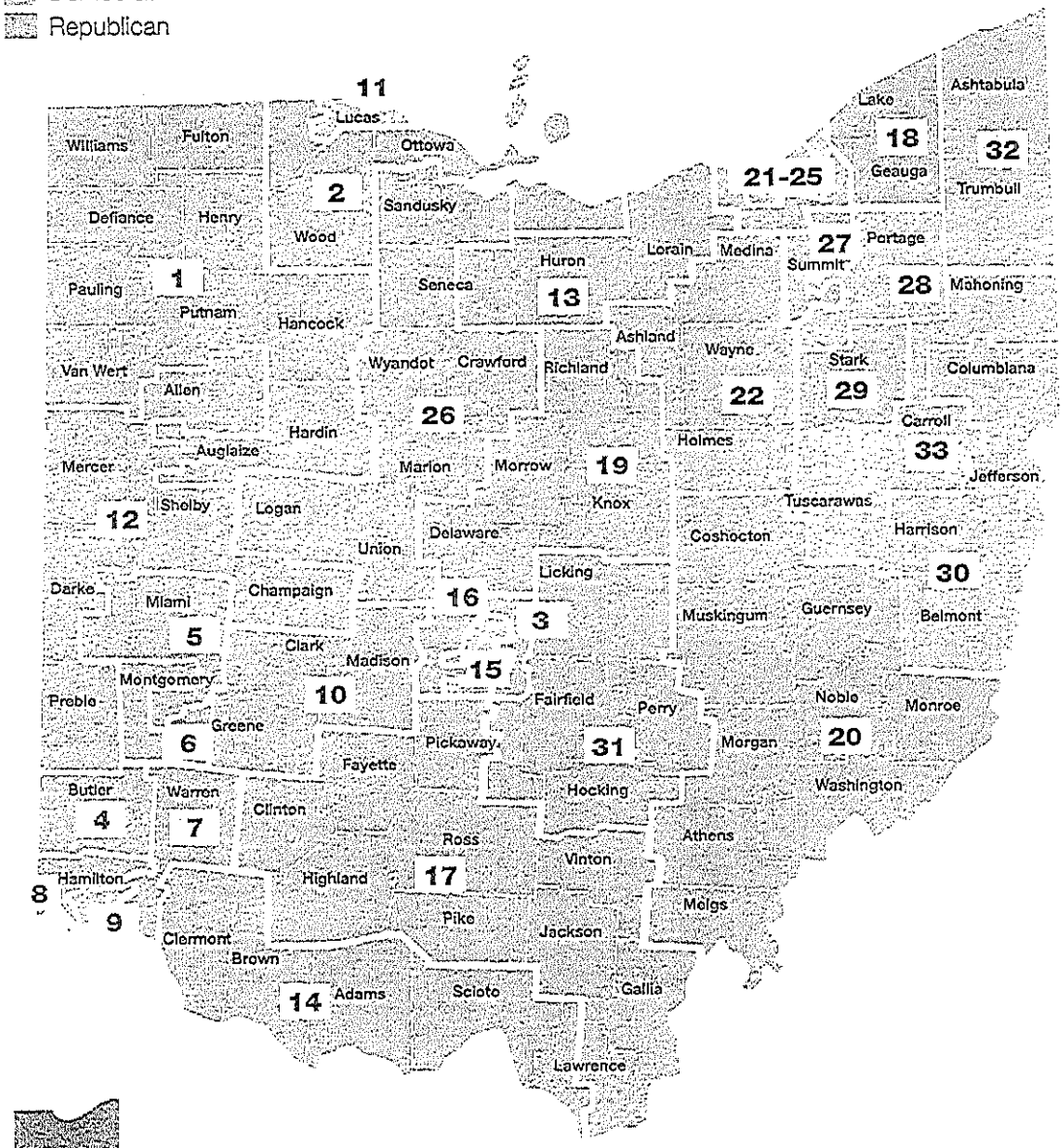
Be sure to foward your comment sheet so that we may track the elected officials response.

129th Ohio General Assembly

Senate Districts

33 Members; Two Year Session Convenes January 2011–December 2012

Democrat
Republican



1	TBA
2	Mark Wagoner
3	Kevin Bacon
4	Gary Cates
5	Bill Beagle
6	Peggy Lehner
7	Shannon Jones
8	Bill Seitz
9	Eric Kearney
10	Chris Widener
11	Edna Brown
12	Keith Faber
13	Gayle Manning
14	Tom Niehaus
15	Charleta Tavares
16	Jim Hughes
17	David Daniels
18	Tim Grendell
19	Kris Jordan
20	Jimmy Stewart
21	Shirley Smith
22	TBA
23	Michael Skindell
24	Tom Patton
25	Nina Turner
26	Karen Gillmor
27	Frank LaRose
28	Tom Sawyer
29	Scott Oelslager
30	Jason Wilson
31	Tim Schaffer
32	Capri Cafaro
33	Joe Schiavoni

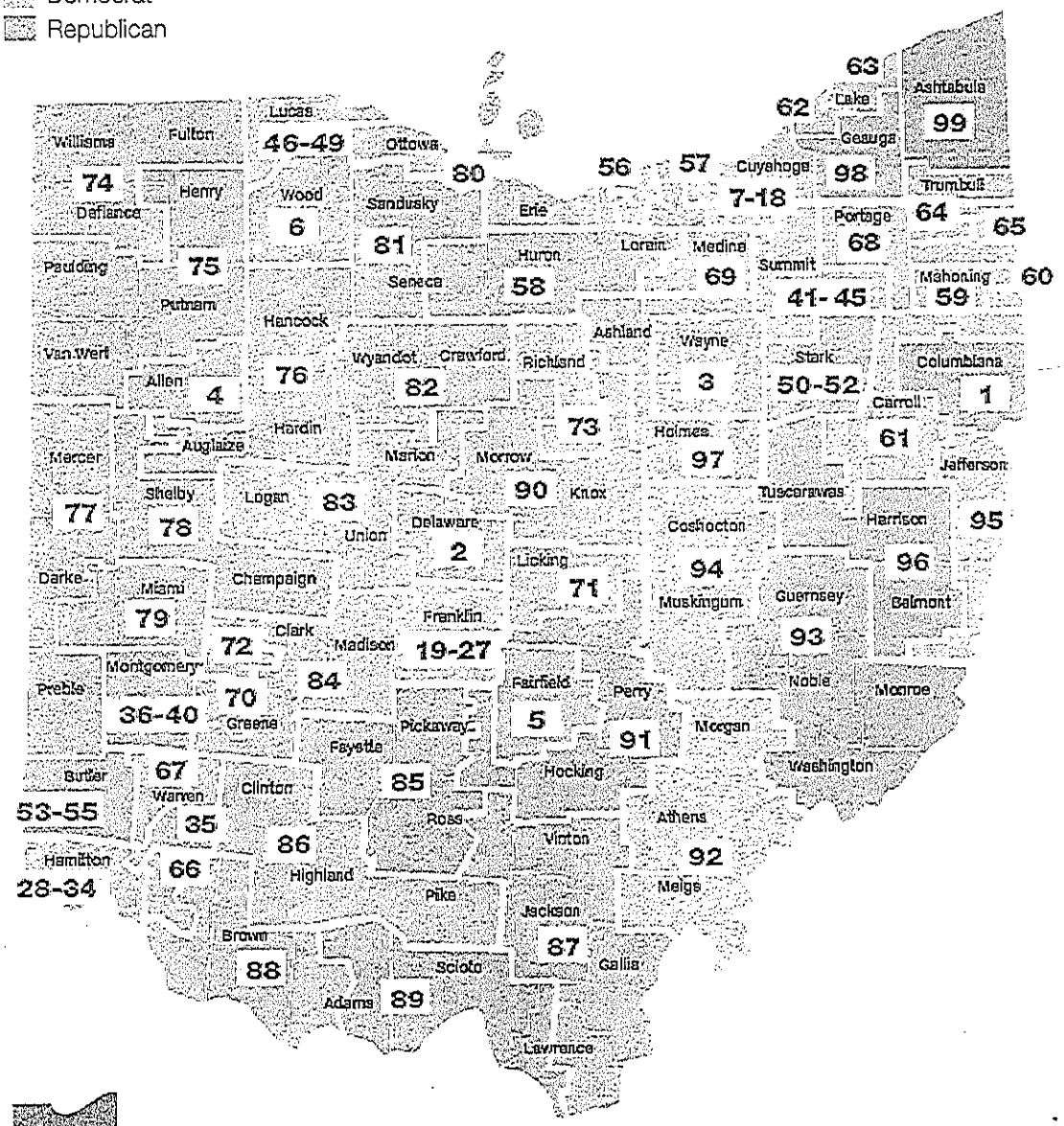
OHIO CHAMBER OF COMMERCE

129th Ohio General Assembly

House Districts

99 Members: Two Year Session Convenes January 2011–December 2012

Democrat
Republican



OHIO CHAMBER OF COMMERCE

1 Craig Newbold
2 Andrew Brenner
3 Ron Amstutz
4 Matt Huffman
5 Gerald L. Stebelton
6 Randy Gardner
7 Kenny Yuko
8 Armond Budish
9 Barbara Boyd
10 Bill Patmon
11 Sandra Williams
12 John E. Barnes
13 Nickie Antonio
14 Michael Foley
15 Timothy J. DeGeeter
16 Nan Baker
17 Marlene Anielski
18 Mike Dovilla
19 Anne Gonzales
20 Nancy Garland
21 Mike Duffey
22 John Carney
23 Cheryl Grossman
24 Ted Celeste
25 Michael Stinziano
26 Tracy Maxwell Heard
27 Carlton Weddington
28 Connie Pillich
29 Louis Blessing
30 Robert Mecklenborg
31 Denise Driehaus
32 Dale Mallory
33 Alicia Reece
34 Peter Stautberg
35 Ron Maag
36 Michael Henne
37 TBA
38 Terrence Blair
39 Clayton Luckie
40 Roland Winburn
41 Lynn Slaby
42 Kristina Roegner
43 Todd McKenney
44 Vernon Sykes
45 Zack Milkovich
46 Barbara Sears
47 Teresa Fedor
48 Michael Ashford
49 Matt Szollosi
50 Todd Snitchler
51 Kirk Schuring
52 Stephen Slesnick
53 Timothy Derickson
54 Courtney Combs
55 William Coley
56 Dan Ramos
57 Matt Lundy
58 Terry Boose
59 Ronald Gerberry
60 Robert Hagan
61 Mark Okey
62 Lorraine Fende
63 Ron Young
64 Tom Letson
65 Sean O'Brien
66 Joe Uecker
67 Peter Beck
68 Kathleen Clyde
69 William Batchelder
70 Jarrod Martin
71 Jay Hottinger
72 Ross McGregor
73 Jay Goyal
74 Bruce Goodwin
75 Lynn Wachtmann
76 Cliff Hite
77 TBA
78 John Adams
79 Richard Adams
80 Dennis Murray
81 Rex Damschroder
82 Jeffrey McClain
83 Dave Burke
84 Robert Hackett
85 Bob Peterson
86 Cliff Rosenberger
87 John Carey
88 Danny Bubp
89 Terry Johnson
90 Margaret Ann Ruhl
91 Bill Hayes
92 Debbie Phillips
93 Andy Thompson
94 Troy Balderson
95 Lou Gentile
96 Al Landis
97 Dave Hall
98 TBA
99 Casey Kozlowski

P.W. Law Thresholds In All 50 States

R-129-1061

Ohio Legislative Service Commission

Research Memorandum

Dan Baeder
April 12, 2011

PREVAILING WAGE LAW THRESHOLDS IN ALL 50 STATES

SUMMARY

Prevailing Wage Laws require that workers on certain public construction projects be paid a specified minimum wage. Often, there exists a statutory threshold with regard to total cost of a project above which a prevailing wage must be paid. This memorandum charts the adoption date of each state's prevailing wage law (if such a law exists), the threshold value of each law, and the definition of prevailing wage used by each state.

Prevailing wage thresholds

The chart below provides the current prevailing wage threshold in each state that has a Prevailing Wage Law. If there are different thresholds based on type of project (e.g., new construction vs. reconstruction/renovation), those values are indicated separately.

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
Alabama	1969; repealed 1980	NA	NA
Alaska (Alaska Stat. §§ 36.05.010 to 36.05.110.)	1931	$2,000 (*Id.* § 36.05.070.)	Wage paid for work of similar nature in region where public work to be done. (*Id.* § 36.05.010.)
Arizona	1912; repealed 1984	NA	NA
Arkansas (Ark. Code Ann. §§ 22-9-30 to 22-9-315.)	1955	$75,000 (*Id.* § 22-9-302.)	Minimum wage rate prevailing in county or locality where work is to be performed, for workers in work of a similar character. (*Id.* § 22-9-301.)
California (Cal. Lab. Code §§ 1771 to 1781.)	1931	$1,000 (*Id.* § 1771.)	Not less than prevailing per diem wages for work of similar character in same locality. (*Id.*)
Colorado	1933; repealed 1985	NA	NA

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
Connecticut (Conn. Gen. Stat. §§ 31-53 to 31-55a.)	1933	$400,000 new $100,000 remodeling (*Id.* § 31-53.)	Customary or prevailing wage for same work in same trade or occupation in town where project is being constructed. (*Id.*)
Delaware (Del. Code Ann. tit. 29, § 6960.)	1962	$100,000 new $15,000 remodeling (*Id.*)	Wages paid to a majority of employees performing similar work, or in the absence of a majority, the average wages paid to all employees. (*Id.*)
District of Columbia (Davis-Bacon Act §§ 276a to 276a-7, 40 U.S.C. §§ 3141-3148.)	1931	$2,000 (*Id.* § 3142.)	Prevailing wage for corresponding classes of workers (50% rule) employed on projects similar to the work in the area where it is to be performed. (29 C.F.R. § 1.2 (a) (1).)
Florida	1933; repealed 1979	NA	NA
Georgia	NA	NA	NA
Hawaii (Haw. Rev. Stat. §§ 104-1 to 104-34.)	1955	$2,000 for public work $500,000 for certain housing projects if bidder or developer is a private, nonprofit corporation. (*Id.* § 104-2)	Not less than the wages for corresponding classes of laborers and mechanics on projects of similar character in the state and not less than the rate paid under the Davis-Bacon Act. (*Id.*)
Idaho	1911; repealed 1985	NA	NA
Illinois (820 Ill. Comp. Stat. 130/1 to 130/12.)	1931	None	Prevailing hourly rate including fringe benefits for work of similar character in same locality. (*Id.* 130/2.)
Indiana (Ind. Code §§ 5-16-7-1 to 5-16-7-5.)	1935	$150,000 (*Id.* § 5-16-7-1.)	Not less than the common construction wage for each class of workers in the county. (*Id.*)
Iowa	NA	NA	NA

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
Kansas (Kan. Stat. Ann. §§ 19-1417, 68-110, 68-2317, 17-4748.)	1891; repealed 1987	NA	The Kansas wage-hour law makes no reference to prevailing wages, but the concept of a prevailing wage does appear in several instances under the law that concerns public contracts. (Kansas Construction Law 17.28 (1998).)
Kentucky (Ky. Rev. Stat. Ann. §§ 337.010, 337.505 to 337.550, 337.990.)	1982	$250,000 (*Id.* § 337.010.)	Basic hourly rate paid majority of workers employed in each class in locality where work is to be performed; if no majority rate, then the average rate. (*Id.* § 337.505.)
Louisiana	1968; repealed 1988	NA	NA
Maine (Me. Rev. Stat. Ann. tit. 26, §§ 1303 to 1315.)	1933	$50,000 (*Id.* § 1304.)	Hourly wage paid to median number of workers employed in same trade or occupation in the second/third week of September. (*Id.*)
Maryland (Md. Code Ann. State Fin. & Proc. §§ 17-201 to 17-226.)	1945	$500,000 (*Id.* § 17-202.)	Hourly rate, including fringe benefits, paid to 50% or more workers in same class for projects similar to proposed public work in the locality where work is to be performed. (*Id.* § 17-208.)
Massachusetts (Mass. Gen. Laws ch. §§ 26 to 27H.)	1914	None	For laborers, at least the wages paid to laborers employed by town (or highest of the towns, if applicable) where construction taking place, unless a collective bargaining agreement specifies otherwise. For craftsmen, at least rate under collective bargaining agreement, if any; otherwise wages paid to unspecified plurality or majority by private employers. (*Id.* § 26.)
Michigan (Mich. Comp. Laws §§ 408.551 to 408.558.)	1965	None	Wages and fringe benefits prevailing in locality where work is to be performed. (*Id.* § 408.552.)

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
Minnesota (Minn. Stat. §§ 177.42 to 177.44.)	1973	$2,500 if one trade $25,000 if more than one trade (*Id.* § 177.43.)	Prevailing hourly rates including fringe benefits paid to largest number of workers in the same class of labor in the area. (*Id.* § 177.42.)
Mississippi	NA	NA	NA
Missouri (Mo. Rev. Stat. §§ 290.210 to 290.340.)	1957	None	Hourly wages plus fringe benefits prevailing for workers engaged in work of a similar character in the locality where work is to be performed. (*Id.* § 290.210.)
Montana (Mont. Code Ann. §§ 18-2-401 to 18-2-432.)	1931	$25,000 (*Id.* § 18-2-401.)	Prevailing wages including fringe benefits for similar work in district where work is to be performed. (*Id.*)
Nebraska (Neb. Rev. Stat. §§ 73-101 to 73-106.)	1923	None (except for school districts, $40,000) (*Id.* § 73-106.)	Wages paid by at least 50% of contractors in same business or field of endeavor. (*Id.* § 73-104.)
Nevada (Nev. Rev. Stat. §§ 338.010 to 338.645.)	1937	$100,000 (*Id.* § 338.080.)	Hourly or daily rate prevailing in county where work is to be performed. (*Id.* § 338.020.)
New Hampshire	1941; repealed 1985	NA	NA
New Jersey (N.J. Stat. Ann. §§ 34:11-56.25 to 34:11-56.47.)	1913	$2,000 $14,187 for cities (adjusted every five years) (*Id.* § 34:11-56.26.)	Wage rate determined by collective bargaining agreements paid by employers employing a majority of workers subject to the collective bargaining agreement in the locality where work is to be performed. (*Id.*)
New Mexico (N.M. Stat. Ann. §§ 13-4-11 to 13-4-17.)	1937	$60,000 (*Id.* § 13-4-11.)	Prevailing wages and fringes of those employed on similar projects in state or locality. (*Id.*)

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
New York (N.Y. Lab. §§ 220 to 220-g.)	1897	None	Rates prescribed under collective bargaining agreements if those rates apply to 30% or more of workers in same trade in locality; if less than 30%, average wages paid to trade in locality in last 12 months. (*Id.* § 220.)
North Carolina	NA	NA	NA
North Dakota	NA	NA	NA
Ohio (Ohio Rev. Code Ann. §§ 4115.03 to 4115.16; 4115.99.)	1931	$78,258 for new construction $23,447 for renovations (adjusted biennially) School districts are exempt (*Id.* § 4115.03.)	Basic hourly wage, including fringe benefits, paid in same trade in same county under collective bargaining agreements; if there is no collective bargaining agreement in the county, the wage described above for the nearest county with a collective bargaining agreement. (*Id.* § 4115.05.)
Oklahoma	1965; invalidated by court in 1995	NA	NA
Oregon (Or. Rev. Stat. §§ 279C.800 to 279C. 870.)	1959; significantly amended and restructured in 2005	$50,000, contract price $750,000, public agency funds in private project (*Id.* § 279C.810)	Hourly wage and fringe benefits paid a majority of workers employed in same trade on similar projects in locality where work is to be performed. (*Id.* § 279C.800.)
Pennsylvania (43 Pa. Cons. Stat. §§ 165-1 to 165-17.)	1961	$25,000 (*Id.* § 165-2.)	Prevailing minimum rate in locality where public work performed for workers in the same class during the term the work is performed, as determined by state labor secretary. (*Id.* § 165-7.)
Rhode Island (R.I. Gen. Laws §§ 37-13-1 to 37-13-17.)	1935	$1,000 (*Id.* § 37-13-3.)	Hourly rate and fringe benefits paid in appropriate political subdivision to corresponding types of employees on similar projects. (*Id.* § 37-13-6.)
South Carolina	NA	NA	NA

Selected Information about State Prevailing Wage Laws			
State	**Year Adopted**	**Threshold**	**Definition of "prevailing wage"**
South Dakota	NA	NA	NA
Tennessee (Tenn. Code Ann. §§ 12-4-401 to 12-4-415.)	1975	$50,000 (*Id.* § 12-4-402.)	Prevailing wage for same work in same district. (*Id.* § 12-4-405.)
Texas (Tex. Gov't Code §§ 2258.001 to 2258.058.)	1933	None	Daily rates for similar work in same locality. (*Id.* § 2258.021.)
Utah	1933; repealed 1981	NA	NA
Vermont (Vt. Stat. Ann. tit. 29, § 161.)	1973	$100,000	Mean prevailing wage published periodically by the department of employment and training. (*Id.*)
Virginia	NA	NA	NA
Washington (Wash. Rev. Code §§ 39.12.010 to 39.12.900.)	1945	None	Hourly rate, benefits, and overtime paid majority of workers in same trade in same locality; if no majority, then the average hourly rate. (*Id.* § 39.12.010.)
West Virginia (W. Va. Code §§ 21-5A-1 to 21-5A-11.)	1935	None	Prevailing hourly rate for work of similar character in the locality where work is to be performed. (*Id.* § 21-5A-2.)
Wisconsin (Wis. Stat. § 103.49.)	1931	$25,000 (*Id.*)	Hourly wage and fringe benefits paid majority of workers employed in same trade in same area where work is to be performed; if no majority, then average hourly rate. (*Id.*)
Wyoming (Wyo. Stat. Ann. §§ 27-4-401 to 27-4-413.)	1967	$100,000 (*Id.* § 27-4-402.)	Wages and benefits of workers engaged in work of a similar character. (*Id.* § 27-4-402.)