DOCUMENT RESUME

ED 473 863 EF 006 175

AUTHOR	Wial, Howard
TITLE	Do Lower Prevailing Wages Reduce Public Construction Costs?
INSTITUTION	Keystone Research Center, Harrisburg, PA.
REPORT NO	No-99-2
PUB DATE	1999-07-00
NOTE	14p.
AVAILABLE FROM	Keystone Research Center, 412 N. Third St., Harrisburg, PA 17101. Tel: 717-255-7181; Fax: 717-255-7193; e-mail: KeystoneRC@aol.com. For full text: http://www.keystoneresearch.org/pdf/ prevailing wage.pdf.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Construction Costs; *Minimum Wage; Policy Analysis; School Construction; State Action; State Surveys
IDENTIFIERS	*Market Wage Rates; *Pennsylvania

ABSTRACT

In 1997, the Pennsylvania Department of Labor and Industry implemented a change in its method of determining prevailing wage and benefit rates, resulting in a reduction in the legally required prevailing rates in many construction trades in much of the state. This report analyzes data to determine if this change in fact lowered the cost of public construction projects. It concludes that this claim is not supported. It asserts, for example, that data on public school construction costs show no strong evidence that Pennsylvania's lower prevailing wages and benefits reduced construction costs charged by contractors performing public works. The report also finds that lower prevailing minimum wages paid to workers have no measurable impact on public construction costs partly because wage declines lead to offsetting declines in productivity. (EV)

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Acknowledgments

Carol Ramsey designed and did the layout of the document.

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Briefing Paper 99/2

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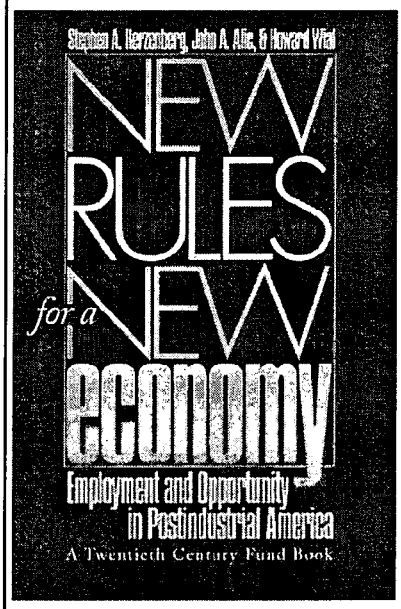

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Overview

Pennsylvania law requires construction contractors working on publicly funded construction or renovation projects to pay workers at a minimum the "prevailing wages and benefits" in their respective trades in the geographical area in which the work is performed. In 1997, the Pennsylvania Department of Labor and Industry (DLI) implemented a change in its method of determining prevailing wage and benefit rates resulting in a reduction in the legally required prevailing rates in many construction trades in much of the state. (Although the Pennsylvania Commonwealth Court ruled them illegal on January 11, 1999, the prevailing wage and benefit rates DLI implemented were in place for more than a year.)

Opponents of prevailing wage laws often argue that repealing or weakening these laws will lower the cost of public construction projects because such action will reduce the wages and benefits of construction workers employed on public projects. Data on Pennsylvania public school construction projects during the period in which lower prevailing rates were in effect do not support this claim.

- Data on public school construction costs show no strong evidence that Pennsylvania's lower prevailing wages and benefits reduced construction costs charged by contractors performing public works.
- Studies from other states show no statistically significant relationship between the existence of prevailing minimum wage and benefit laws and the cost of school construction.
- Lower prevailing minimum wages paid to workers have no measurable impact on public construction costs partly because wage declines lead to offsetting declines in productivity.
- Real savings in public construction costs are more likely to come from investments in worker training, which can make workers more productive, thereby lowering costs without cutting wages.

By threatening the construction industry's skill base, lowering prevailing minimum wages and benefits moves Pennsylvania's construction industry in the opposite of the direction in which it needs to move to reduce construction costs over the long term.

Pennsylvania's Prevailing Wage Law

Since 1961, Pennsylvania has required construction contractors who work on publicly funded projects (such as public schools, government buildings, and highways) to pay construction workers at least the prevailing wages and benefits for their respective trades in the area in which the work is performed. This prevailing minimum wage requirement exists, in one form or another, in many states and at the federal level as well. The purpose of the requirement was to prevent building contractors from using out-of-state or out-of-town workers to undercut the local economy and wage base.

Since 1979, nine states have repealed their prevailing wage laws.[1] Opponents of prevailing wage laws believed that the laws kept construction workers' wages and benefits artificially high because the prevailing minimum wages set under the laws were often the hourly wages paid to unionized workers, which are generally higher than nonunion workers' hourly wages. If wage and benefit rates were no longer propped up by law, prevailing minimum wage opponents argued, wages would fall to their "natural" market levels yielding lower construction costs and saving taxpayers money.

Pennsylvania's prevailing wage law has not been repealed. However, the Pennsylvania Department of Labor and Industry (DLI) recently weakened the law's effect by changing its method of determining prevailing rates. (The prevailing wage statute gives DLI the responsibility for determining the prevailing wage and benefit rates in each trade or craft.) Before February 27, 1997, DLI set the prevailing wage and benefit rates by accepting submissions of wage and benefit information from any interested party, including building contractors and trade unions. It then declared the prevailing rates to be the hourly wage and benefit rates that were most frequently paid to workers. While the wage and benefit rates of nonunion workers often vary from job to job, person to person, and employer to employer, rates in the unionized sector are generally unform in an area for each specific trade. For this reason, the prevailing wage and benefit rate was usually the collectively bargained wage and benefit rate.

In June 1996, DLI decided to set prevailing wage and benefit rates in a different way. Instead of relying on submissions from interested parties as contemplated by the statute, DLI contracted with the Pennsylvania State Data Center to conduct a statewide survey of construction workers' wages. The survey covered the period from January 1995 through May 1996. It was sent to building contractors, although certain contractors and certain types of construction projects were excluded. Using the survey results, DLI would declare the prevailing wage and benefit rate in a particular trade and county to be the wage and benefit rate paid to a majority of workers in that trade and county based upon DLI's criteria for the determination of majority status. If no single wage and/or benefit rate was paid to a majority of workers, DLI would declare the prevailing wage to be the average wage and benefit rate of all survey responses. The new method of setting the prevailing wage and benefit rates went into effect February 27, 1997, but was the subject of a legal challenge which stayed its implementation or use from April 8, 1997, until August 13, 1997, when the stay was lifted.

In many trades and counties where a large share of construction workers were covered by a collective bargaining agreement, the prevailing wage and benefit rates were the same under the new method as under the old one. But in trades and counties with a lower union presence or a low survey response rate for unionized projects, the new method usually resulted in a decline in the prevailing minimum wage and benefit rate because that wage and benefit rate was no longer the collectively bargained rate.

The Effect of Lower Prevailing Wages and Benefits on Construction Costs

Opponents of prevailing wage laws would expect Pennsylvania's public construction costs to have declined after the impact of collective bargaining agreements on prevailing wages and benefits was weakened. To find out whether such expectations are warranted, we can look at evidence on school construction costs in Pennsylvania during the two-year period from October 1996 through October 1998. If lower prevailing wage and benefit rates reduced construction costs to public bodies, then the average cost per square foot for public school construction projects would be expected to have been lower after August 1997 than it was in the earlier part of the two-year period.[2]

Table 1 shows the average cost per square foot for school construction projects for which contracts were awarded in the months before and after the wage-determination method was changed.[3] The table shows the average cost for eight groups of Pennsylvania counties. Each group of counties is characterized by the number of building trades or crafts (out of ten) in which the new prevailing wage and benefit rates were the collectively bargained wage. (There are no before-and-after data for groups of counties in which the new prevailing wage and benefit rates were the collectively bargained rate in one or six trades, so those county groups are excluded from the table.)

Table 1.
Average Cost Per Square Foot* for School Construction Projects in Pennsylvania, October 1996-October 1998, Before and After Prevailing Wage Determination Method Was Changed

Number of Trades, in County Group, in Which New Prevailing Wage Was the Collectively Bargained Wage**	Average Cost Per Square Foot Before Prevailing Wage Determined Method Was Changed (October 1996 - August 1997)	Average Cost Per Square Foot After Prevailing Wage Determination Method Was Changed (September 1997 - October 1998)	Percentage Change in Average Cost Per Square Foot
0	$ 61.50	$ 97.33	+58%
2	37.06	77.31	+109
3	125.43	59.28	- 53
4	110.00	238.00	+116
5	80.25	113.90	+ 42
7	116.71	160.95	+ 38
8	113.35	159.40	+ 41
9	151.19	73.61	- 51
10	101.12	108.13	+ 7

*Average cost per square foot is the ratio of total costs of all construction projects in a county group to total square feet covered by those projects.
**Each county was classified according to the number of trades in which the new prevailing wage was the collectively bargained wage. The counties were then grouped together according to this number. For example, "2" indicates that the data pertain to all counties in which the new prevailing wage was the collectively bargained wage in two trades.

The table shows that average construction costs per square foot declined only in counties where either three or nine trades had their new prevailing wage rates set equal to the collectively bargained wage. In all other county groups, average costs rose after the new wage-determination method went into effect.

Table 1 also provides data on which county groupings saw the largest declines or smallest increases in average cost per square foot. Proponents of weakening prevailing wage laws would expect construction costs to fall most (or increase least) in the counties in which very few trades had their prevailing wage and benefit rates set by collective bargaining after the change in the prevailing wage determination method. These proponents would therefore expect the top rows of the last column of Table 1 to be more negative (or less positive) than the bottom few rows. In fact, the data shows the opposite of what would be expected if lowering prevailing wage and benefit rates reduced construction costs: while the trend is erratic, the top rows of the last column of Table 1 tend to be higher than the bottom rows.

Of course, the projects included in Table 1 differ in terms of many other things that may affect their costs, not just whether their contracts were awarded before or after the change in the method of determining the prevailing wage rate. For example, they differ by the number of square feet in the project, the cost of living in the relevant county, the type of school, and the particular month in which the contract was awarded. A statistical technique known as multiple regression makes it possible to separate the influence of the prevailing wage rate change on construction costs from other influences on those costs. Multiple regression analysis of Pennsylvania school construction data shows no across-the-board decline in costs after the prevailing wage law's determination methods were changed.[4]

Studies of prevailing wage laws in other states have also produced no strong evidence that these laws have any impact on construction costs.

- A study of 15 Great Plains states showed that the average cost per square foot of building new schools did not differ significantly between states that had prevailing wage laws and states that did not.[5]

- A comparison of school construction costs between prevailing wage and non-prevailing wage states in the Mountain West and Southwest found that average costs per square foot were actually lower in states with prevailing wage laws.[6]

- A multiple regression study of school construction costs in Maryland and other mid-Atlantic states found that prevailing wage laws have no measurable impact on costs.[7]

The most cited statistical study that produced a contrary result, a multiple regression analysis of the impact of the federal prevailing wage law (the Davis-Bacon Act) on construction costs in non-metropolitan areas of the U.S., was flawed by its deliberate exclusion of publicly funded projects that were not subject to the requirements of the federal law.[8] The study thus compared public

projects subject to the federal prevailing wage law with private projects. Because many publicly funded projects (such as highways, public transportation systems, and prisons) have no private counterparts, however, it is impossible to hold constant the characteristics of the project when comparing public and private projects. Therefore, it is impossible to attribute public-private cost differences to the public sector's prevailing wage and benefit rate requirement.

The recent experience of two Pennsylvania school districts shows that even increases in legally mandated prevailing wage and benefit rates do not necessarily increase public construction costs. In March 1999, after two months of legal uncertainty about required prevailing wage levels, DLI began issuing prevailing wage rates that were higher than the 1998 rates. The Blue Mountain School District, in Schuylkill County, was planning to renovate its high school. In April 1999, the school district's construction manager estimated that construction costs would increase by about $670,000 as a result of the higher prevailing wage and benefit rates.[9] But when bids for the project were opened on May 6, the low bids, which were expected to be about $15.1 million, came in at only about $13.8 million, almost 9 percent below the anticipated level.[10] And in April, bids for a middle school construction project in Tamaqua, which used the same prevailing wage and benefit rates as the Blue Mountain bids, also came in under budget estimates.[11]

Why Do Lower Prevailing Wages and Benefits Have No Measurable Effects on Construction Costs?

Many people, without examining the evidence, might expect the lowering of Pennsylvania's prevailing minimum wages and benefits to reduce construction workers' compensation and, with it, construction costs. But this would be true only if construction workers' productivity did not change when workers' wages fell. When workers become less productive, construction costs rise. If the decline in wages causes productivity to drop, the effect of the productivity decline (to raise costs) works against the effect of the wage decline (to lower costs). If the two effects cancel each other out, the prevailing wage change will have no effect on construction costs. If the productivity decline outweighs the wage decline, costs will actually rise.

There are several reasons to expect construction industry productivity to decline substantially when the prevailing wage rate is lowered. Large wage cuts demoralize workers and encourage skilled and experienced workers to travel to higher wages areas or leave the industry altogether. Over a longer period of time, lower wages threaten the continued existence of construction apprenticeship programs (most of which are established through collective bargaining and administered jointly by union and employer representatives).[12] Apprenticeships, which usually last

four or five years, give workers a broad set of skills within their respective trades. If construction workers' wages are too low and workers are unlikely to spend entire careers in the construction industry, costly apprenticeships no longer make economic sense for workers or employers. As apprenticeships decline, the construction industry loses its base of skilled workers. As a result, productivity declines. Individual employers are unwilling to pick up the slack and train workers themselves because they know that any worker they train can easily go to work for a competitor. Moreover, nonunion employers have rarely been able to create or sustain apprenticeship programs that are comparable in scope to the collectively bargained programs.

In other states, eliminating prevailing wage laws has driven down wages and reduced investment in apprenticeship training. Between 1973 and 1990, the number of construction apprentices declined by an average of 53 percent in Great Plains states that repealed their prevailing wage laws or never had such laws. In Great Plains states that kept their prevailing wage laws, the number of apprentices fell by only 27 percent during the same period.[13]

Conclusion

For the period in which they existed, Pennsylvania's lower prevailing wage and benefit requirements had no measurable impact on construction costs in the state. If the lower prevailing wage and benefit* rates were intended to save taxpayers money, they failed to achieve that goal. Real savings in public construction costs are more likely to come from investments in worker training, which can make workers more productive, thereby lowering costs without cutting wages. By threatening the construction industry's skill base, lower prevailing rates move Pennsylvania's construction industry in the opposite of the direction in which it needs to go to reduce construction costs over the long term.

FOOTNOTES

[1] Peter Philips, *Kansas and Prevailing Wage Legislation*, study prepared for Kansas Senate Labor and Industries Committee, February 20, 1988, p. 14. The prevailing wage law in one additional state, Oklahoma, was judicially overturned.

[2] The data analyzed are from the F.W. Dodge Company and include information on the bid price at the start of the project, the structure type, project location, project scale, and technical characteristics such as number of stories and type of frame. The Dodge data also distinguish between public, private, and federal projects.

[3] The data include six private school construction projects and 70 public school projects. The inclusion of this small number of private schools, which are not covered by the prevailing wage law, makes little difference to the analysis. In addition, the prevailing wage law may have an indirect effect on wages paid to workers on private construction projects if public construction projects account for a large share of all construction industry employment in a trade and locality.

[4] The multiple regression analysis included all Pennsylvania school construction projects for which contracts were awarded between October 1996 and October 1998, except for those in counties where either one or six trades' new prevailing wages were equal to the collectively bargained wage. (The latter projects were excluded from the regression analysis, as they were excluded from Table 1, because there were no before-and-after data.)The regression related the logarithm of the total cost of each project to a measure of the cost of living in the project's county, the time when the project was built (measured in months after October 1996), the type of project (addition, addition/alternation, alteration, alteration/renovation, new construction, unknown/new, or unknown), the number of square feet, the type of school (public or private, and elementary, middle, or high school), and whether the project was built after August 1997 in each county group. The regression results showed that, after controlling for other influences on construction costs, costs went up in some county groups and down in others after the prevailing-wage change took effect. (In which groups costs increased and in which they decreased depended on the precise statistical specification used.) However, none of these cost increases or decreases was statistically significant at the 5 percent level except, in one specification, for a decline in costs in the nine-collective-agreement county group.

[5] Philips, *Kansas and Prevailing Wage Legislation*, pp. 18-21.

[6] Peter Philips, *Summary of New Mexico Study of School Construction Costs*, University of Utah, Department of Economics, no date.

[7] Mark Prus, *Prevailing Wage Laws and School Construction Costs: An Analysis of Public School Construction in Maryland and the Mid-Atlantic States*, study prepared for Prince Georges County (Maryland) Council, January 1999.

[8] Martha Norby Fraundorf, John P. Farrell, and Robert Mason, *Effect of the Davis-Bacon Act on Construction Costs in Non-Metropolitan Areas of the United States*, Oregon State University, Department of Economics, January 1982.

[9] Mary Ellen Maher-Harkins, "Prevailing Wage Debate Hits County; Blue Mountain Sees Project Cost Rise," *Schuylkill Online*, April 27, 1999, www.pottsville.com/pub/1999/Apr/27/D977592.htm

[10] Mary Ellen Maher-Harkins, "Blue Mountain Bids Come In Low; School District May Save More Than $1 Million in Construction Costs," *Schuylkill Online*, May 7, 1999, www.pottsville.com/pub/1999/May/7/E2374.htm

[11] Maher-Harkins, "Prevailing Wage Debate Hits County."

[12] In Pennsylvania during the 1990-95 period, labor-management apprenticeship programs operated jointly by unions and construction contractor associations accounted for 72 percent of new entrants into apprenticeship programs (and a higher share of those graduating from apprenticeships). U.S. Department of Labor, Bureau of Apprenticeship and Training, data provided by Cihan Bilginsoy of the University of Utah. During this period, unions represented about 22 percent of construction workers (Barry T. Hirsch and David A. Macpherson, *Union Memberships and Earnings Data Book* (Washington, D.C.: Bureau of National Affairs), various years.) Therefore, Pennsylvania unionized construction firms did about 9 times as much apprenticeship training relative to their employment as did non-union firms.

[13] Philips, *Kansas and Prevailing Wage Legislation*, pp. 35-36.

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