

Losing Ground: Lessons from the Repeal of Nine "Little Davis-Bacon" Acts

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Executive Summary

Like the 1931 federal Davis-Bacon Act, legislation in 41 states has required that the "prevailing" wage be paid on state-government-funded construction projects. Between 1979 to 1988, however, nine states repealed their prevailing wage laws. (Nine states never had such a law.) The remaining 32 states have retained prevailing wages. These variations in state experience provide useful information with which to consider probable effects of additional state repeals or the proposed repeal of Davis-Bacon. This study found that state repeals of prevailing wage laws had several effects.

First, in Utah, whose experience was examined most closely, the state budget has not benefited from repeal of the prevailing wage law. The repeal helped drive down construction earnings and as a result, the state has lost substantial income tax and sales tax revenues. In the decade before the 1981 repeal in Utah, construction worker earnings averaged about 125 percent of average non-agricultural earnings. By 1993, construction worker earnings had fallen to 103 percent of the average earnings for Utah workers. This decline in earnings is a result of both lower wages and a subsequent shift to a less-skilled construction labor force.

Second, also in Utah, the size of total cost overruns on state road construction has tripled in the decade since repeal in comparison to the previous decade. The shift to a less-skilled labor force — lowering labor productivity along with wages — and the greater frequency of cost overruns have lessened any possible savings in public works construction costs associated with the repeal.

Third, looking at all the states, and controlling for a general downward trend in real construction earnings, variations in state unemployment rates, and regional differences in wages, repeals have cost construction workers in the nine states at least \$1,477 per year in earnings, on average (in 1994 dollars). The costs may eventually be higher as the effects of the more recent repeals mature, driving wages and training down further.

Fourth, controlling for a general downward trend in the amount of construction training, variations in state unemployment rates, and regional differences in training availability, the nine state repeals have reduced construction training in those states by 40 percent.

Fifth, minority representation in construction training programs has fallen even faster than have the training programs in repeal states. Until the various state repeals, minority apprenticeship participation mirrored the minority percentage of each state's population. After repeal, minorities became significantly under-represented in construction apprenticeship programs.

Sixth, occupational injuries in construction rose by 15 percent where state prevailing wage laws were repealed.

Based on these findings, we conclude that, if the federal Davis-Bacon Act were repealed:

- *Federal income tax collections would fall by at least \$1 billion per year in real terms every year for the foreseeable future. This is because construction wage levels would decline across all states and – based on the experience of the nine repeal states – construction employment levels would not rise enough to offset this revenue loss. The figure for lost tax revenues may well be higher. If the experience of the nine states that never had a prevailing wage law is*

indicative, lost tax revenues from a repeal of Davis-Bacon could rise to \$2 billion per year. Whether the losses are \$1 billion or \$2 billion, the government cannot count on making them up with its cost savings as a purchaser of construction. *The government will not break even.*

- *There would be 76,000 additional workplace injuries in construction annually, with 30,000 of them serious and thus requiring time off from work to recover.* As a result, more than 675,000 work days would be lost each year in construction. This could lead to additional workers' compensation costs of about \$3 billion per year, of which \$300 million would be passed on to the federal government as increased costs on public works.
- *Utah's experience suggests that repeal of Davis-Bacon would generate a period of significant cost overruns and the increased use of expensive change orders.* Although we cannot measure the exact costs of such practices, it is generally accepted that change orders add substantially to construction costs.

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I. The History of Prevailing Wage Laws in the United States

In February 1891, Samuel Gompers, president of the American Federation of Labor, visited Topeka, Kansas, to speak on what the local newspaper called "the great topic of labor." Ten years earlier, the AFL — at its own creation — had laid out legislative aims that included the eight-hour work day, the elimination of child labor, free public schooling, compulsory schooling laws, the elimination of convict labor, and prevailing wages on public works. These proposals were based on a belief that the American labor market should consist of highly skilled workers earning decent wages, with time for family, and with children free to earn an education. In pursuit of these aims, Gompers' political strategy in Kansas allied him with the Republican Party.

On the morning of Gompers's arrival, the Alliance Party, known to history as the Populist Party, withdrew an earlier invitation for him to speak in the hall of the state House of Representatives, which the party controlled. Gompers, who represented 900,000 workers, had fallen out of favor with the populists, reportedly because of his belief that the trade unions should not form a political party with the Alliance.¹ The Republicans, who controlled the Kansas Senate, invited Gompers to speak there, and he did.

Gompers was in Kansas to focus on the eight-hour day. Like other Americans, Kansans in 1891 typically worked six days per week, ten to twelve hours per day. In the older trades and crafts, such as carriage making and saddle making, where the work pace was slow and under the workers' direction, the long work day was tolerable. In the newer factories producing shoes, textiles, and the like; in the mines; and in the urban putting-out systems in needlework, six-day weeks and twelve-hour days were grueling. The AFL had made its prime objective a shortened work day and work week with as little cut in pay as possible. In his Topeka speech, Gompers declared:

Our banner floats high to the breeze and on that banner float is inscribed, "Eight hours work, eight hours rest and eight hours for mental and moral improvement."²

At that time, when there were no income supplement programs for the poor, low-income parents worked *and* had to send their children to work to make ends meet. This practice was later referred to by a North Carolina newspaper editor as "eating the seed corn." Each generation of poor condemned its offspring to poverty because the children grew up as illiterate as their parents. The prevalence of cheap child labor, which accounted for 5 percent of the manufacturing labor force in 1890 and a larger proportion of service sector workers, kept wages down and forced adult workers to put in the long hours to make ends meet. Gompers wanted regulation to force employers and the poor to adopt a strategy, however painful in the short run, of a high-wage, high-skilled growth path where children were in school and workers had the skills to justify wages that would allow for a family life. Gompers said,

The Federation endorses the total abolition of child labor under 14 years of age; an eight hour law for all laborers and mechanics employed by the government directly through contractors engaged on public work, and its rigid enforcement; protection of life and limb of workmen employed in factories, shops and mines; ...the extension of suffrage as well as equal work for equal pay to women....The Federation favors measures, not parties.³

Although it was not clear at the time whether government could require private sector employers to honor the eight-hour day, government could set an example, Gompers believed. In state after state, he pleaded for the eight-hour day for government workers and private sector workers employed on public works. Gompers also pleaded for workers to be paid the "current" daily wage so they could afford the reduced work time. Government was being asked to set a good example for the private sector, to show that a refreshed labor force could produce in eight hours what a fatigued and bedraggled labor force turned out in ten or twelve hours. The prevailing wage law in its infancy was an attempt to obtain shorter working hours for *all* labor. The AFL paid attention to public works, however, because government at all levels was a major purchaser of construction. The AFL said government should not try to save money by eroding the wages of its citizens.

With similar logic, the AFL called for an end to convict labor. Many states employed convicts to pay for their keep. Convicts built roads on chain gangs, operated farms, made textiles, and sewed garments. Convict-made goods were sold, forcing down prices and the wages of working free citizens.

Thus, prevailing wage law legislation, at its birth, was embedded in an overarching intent to shorten the grueling working day for all labor, to compel the working poor to make ends meet in some fashion other than by sending their children into the factories, to compel children into schools so that they might become better workers and better citizens, to compel employers to adopt techniques that profited on the employment of skilled adult workers rather than unskilled child labor, to present government as an exemplar of good management by establishing the eight-hour day in government employment and on public works, and to abolish the practice of government saving tax dollars by grinding down wages on public works or through convict labor. It is not surprising, then, that the first prevailing wage law passed in the United States — in Kansas — was part of an eight-hour-day law.

Passage of State Prevailing Wage Laws

The Kansas Eight-Hour law. Kansas established the first prevailing wage law in 1891. In January 1890, the Kansas Bureau of Labor and Industrial Statistics, in preparation for its Sixth Annual Report, distributed a questionnaire to each trade union and the Knights of Labor Assembly. In response to a question about needed legislation, the Molder's Union of Parsons, Kansas, replied that he wanted "a law...against the letting of contracts for State work to unfair employers."⁴ This plea for the state to let out contracts fairly appears to be one of the first reports leading up to the enactment of a prevailing wage law.

In February 1891, the Second Annual Convention of the Kansas State Federation of Labor, in Topeka, approved a bill concerning state-paid wages. That month, the bill, which included the prevailing wage section, called "for an Eight Hour Law" and was brought forth by Mr. Avery of the Typographical Union No.121, Topeka. The bill stated,

That in no case shall any officer, board, or commission, doing or performing any service or furnishing any supplies to the State of Kansas under the provisions of the act be allowed to reduce the daily wages paid to employees engaged with him (or them) in performing such service or furnishing such supplies, on account of the reduction of hours provided for in the act. That in all cases such daily wages shall remain at the minimum rate which was in such cases paid and

received prior to the passage of the act.⁵

The eight-hour bill was one of four labor-related bills pending in the legislature: the weekly pay bill, the child-labor bill, and the bill to make the first Monday in September a holiday, which would become known as Labor Day. In addition, that year the Kansas State Federation of Labor approved a resolution calling "for the abolition of convict labor when in competition with free labor."⁶

The eight-hour bill, Senate Bill 151, failed in the Kansas senate March 6, 1891, with the prevailing wage section removed. But by March 10, when the prevailing wage section was put back in, the bill became law. This first prevailing wage law stated,

That not less than the current rate of per diem wages in the locality where the work is performed shall be paid to laborers, workmen, mechanics and other persons so employed by or on behalf of the state of Kansas....⁷

At first, however, the law was not enforced.⁸ Not until 1900, did the Kansas Bureau of Labor and Industrial Statistics report enforcement: "there were hundreds of complaints that were attended to by correspondence, and good results obtained."⁹

Prevailing wage laws in other states. New York was the second state to pass a prevailing wage law. New York's eight-hour law (Chapter 385) was amended in 1894 by Chapter 622 to include a prevailing wage law for those employed on public works. As in Kansas, however, there were many violations.¹⁰ Laws similar to those in Kansas and New York were passed in Oklahoma (1909), Idaho (1911), Arizona (1912), New Jersey (1913), Massachusetts (1914), and Nebraska (1923) (see table 1.1). These laws established a precedent for the creation of the federal Davis-Bacon prevailing wage law.

Passage of The Davis-Bacon Act

Three federal laws primarily affect prevailing wages in the United States: the Davis-Bacon Act of 1931 which applies to construction, the Walsh-Healey Public Contracts Act of 1936 which covers employers in manufacturing and supply industries, and the Service Contract Act of 1965 (known as the O'Hara-McNamara Service Act), covering suppliers of personal and business services. These laws attempt to neutralize the effects of government purchases on wage determination in the private sector. The Davis-Bacon Act is the most significant of the three laws.

Its objective is to prevent the federal government from affecting local wages and construction conditions; Davis-Bacon disallows the government from pushing down wages in competitive bidding. The government has always been a major purchaser of construction services. As such, the government holds the potential to use its bargaining power to force down wage rates.

Table 1.1 Prevailing Wage Laws, by State

States having prevailing wage laws	Year passed	States without prevailing wage laws		
Alaska	1931	Georgia		
Arkansas	1955	Iowa		
California	1931	Mississippi		
Connecticut	1935	North Carolina		
Delaware	1962	North Dakota		
District of Columbia	1931	South Carolina		
Hawaii	1955	South Dakota		
Illinois	1931	Vermont		
Indiana	1935	Virginia		
Kentucky	1940			
Maine	1933			
Maryland	1945			
Massachusetts	1914	States that repealed prevailing wage laws	Year passed	Year of repeal
Michigan	1965			
Minnesota	1973	Alabama	1941	1980
Missouri	1957	Arizona	1912	1984
Montana	1931	Colorado	1933	1985
Nebraska	1923	Florida	1933	1979
Nevada	1937	Idaho	1911	1985
New Jersey	1913	Kansas	1891	1987
New Mexico	1937	Louisiana	1968	1988
New York	1894	New Hampshire	1941	1985
Ohio	1931	Utah	1933	1981
Oklahoma	1909			
Oregon	1959			
Pennsylvania	1961			
Rhode Island	1935			
Tennessee	1953			
Texas	1933			
Washington	1945			
West Virginia	1933			
Wisconsin	1931			
Wyoming	1967			

Note: The District of Columbia is listed here, but not included in the count of states.

Source: State laws and corrected version of Armand J. Thieblot, Jr., *Prevailing Wage Legislation: The Davis-Bacon Act, State "Little Davis-Bacon Acts," The Walsh-Healey Act, and The Service Contract Act*. Philadelphia: The Wharton School, 1986, p.140.

For four years before the 1931 passage of the Davis-Bacon Act, 14 bills were introduced in Congress to establish prevailing wages in construction. Robert L. Bacon in 1927 introduced the first bill proposing a prevailing wage for construction, H.R. 17069. The member of Congress justified his measure as follows:

The Government is engaged in building in my district a Veteran's Bureau hospital. Bids were asked for. Several New York contractors bid, and in their bids, of course, they had to take into consideration the high labor standards prevailing in the State of New York...The bid, however, was let to a firm from Alabama who had brought some thousand non-union laborers from Alabama into Long Island, N.Y.; into my district. They were herded onto this job, they were housed in shacks, they were paid a very low wage, and the work proceeded...It seemed to me that the federal Government should not engage in construction work in any state and undermine the labor conditions and the labor wages paid in that State...The least the federal Government can do is comply with the local standards of wages and labor prevailing in the locality where the building construction is to take place.¹¹

Hearings for a federal prevailing wage law began in 1927 and continued in 1928 and 1930, but no bill was passed. On March 3, 1931, Bacon's original proposal, which he had reintroduced as H.R. 16619, was signed into law by President Hoover.¹²

The Davis-Bacon Act required payment of prevailing wages on federally financed construction projects. The law essentially ruled out bidding on construction worker wages on federally financed construction. The original language was vague, however, and prevailing wages generally were not determined before the acceptance of bids. In 1935, President Roosevelt signed clarifying amendments to the act, which became the basis of the current Davis-Bacon Act. The National Labor Relations Act of 1935 gave the Secretary of Labor authority to set the prevailing wage.

In 1935, Roosevelt's Secretary of Labor, Francis Perkins, established the original rules for determining the Davis-Bacon prevailing rates. The prevailing wage was said to be the wage paid to the majority, if a majority existed; if not, the 30-percent rule was used. The 30-percent rule means if 30 percent of the workers in an area are paid the same rate, that rate becomes the prevailing rate there. The 30-percent rule often resulted in the union wage being the prevailing wage. If the 30-percent rule did not apply, because at least 30 percent of the workers in a given occupation in the local labor market did not receive the same wage rate, the average wage rate was paid to workers doing the same job. The prevailing wage was determined this way for 50 years.

In 1985, President Reagan changed administration of Davis-Bacon, creating the 50-percent rule. The revised regulation reduces the influence of the negotiated union wage in most areas (see page 9, below).

The Tenth Amendment to the Constitution restricts the ability of the federal government to dictate contract terms for the states. Thus, work funded entirely by state or local governments is not covered by Davis-Bacon. Each state, county, or city can establish its own prevailing wage — if it chooses to do so — through legislation. In 1994, 29 percent of all county-level federal Davis-Bacon prevailing wage rates were taken from union contracts, 48 percent used average wages, and the remaining 23 percent of counties used a mix of union and average wages, depending on the occupation.

Repeals of Some State Prevailing Wage Laws

Kansas had passed the first prevailing wage law in 1891 and, by 1969, 41 states and the District of Columbia had prevailing wage laws. Several cities also passed local prevailing wage laws affecting construction. However, state governments began experiencing fiscal crises in the late 1970s. In 1978, California voters passed Proposition 13, restricting state expenditures, and the Labor Law Reform Bill failed in Congress. In this political context, many state legislatures believed that, to save tax dollars, government should use its bargaining power to lower construction costs, even if the probable effect of this action would be the lowering of construction wage rates and a possible effect might be the lowering of quality in the construction industry.

More than 51 bills have been introduced in 23 state legislatures to repeal or curtail so-called little Davis-Bacon legislation.¹³ Alabama, Arizona, Colorado, Florida, Idaho, New Hampshire, Kansas, Louisiana, and Utah have repealed their prevailing wage laws.

Florida. Florida, which passed its prevailing wage law in 1933, was the first state to repeal. The statute was repealed over the veto of the governor in 1979.¹⁴ One of the most populous counties, Broward, established its own local prevailing wage law and several cities in Broward passed similar laws.¹⁵

Alabama. Alabama was the next state to repeal, in 1980.¹⁶ After Alabama's repeal, the entire South from Virginia to Mississippi, except Tennessee, was without state prevailing wage law. Unsuccessful attempts were made in 1983 and 1984 to reinstate the 1968 Alabama laws. However, prevailing wage laws exist at the local level, such as one in Mobile for city-sponsored construction.¹⁷

Utah. Utah's prevailing wage law had been passed in 1933. Eventually, prevailing rates were set by hearings held in three districts that were created for this purpose. In addition to covering construction, the Utah statute established prevailing rates for piece work.

The first indications of intent to repeal the Utah law were heard from the local chapter of the national Associated Builders and Contractors (ABC) in 1978. (The ABC, nationally and in Utah, sought to represent the interests of non-union contractors.) The Utah ABC outlined its strategy in a letter to other state ABC chapters in 1978:

It is our hope that the major argument in favor of repeal would be based on tax savings and unnecessary government spending, rather than a union versus non-union argument.¹⁸

The ABC lobbying effort became public during the Utah legislative session in 1979. The sponsor of the Utah repeal, Republican Representative S. Garth Jones wrote in the *Deseret News*:

The prevailing wage rate is substantially the union pay scale. In 1933 the law was designed to place money into a depressed economy, to increase wages to get the economy moving. The law does the same thing today. But today, the economy is not depressed; inflation is the problem and the cost of government is too high. Repealing the prevailing wage will allow the free enterprise system to establish the wages of tradesmen at a substantial savings to the taxpayers. The prevailing wage law is inflationary. Additionally, the prevailing wage rate discourages non-union contractors from bidding public contracts. It encourages union contractors to bid public contracts. The effect is to force people looking for work to go to union contractors. The law is inconsistent with Utah's Right to Work law. (Feb. 23, 1979)

The first bill to repeal the statute was introduced in 1979, only to be vetoed by Democratic Governor Scott Matheson. In 1981, repeal bills were introduced in 14 states. Only in Utah did repeal succeed that year and it succeeded only after a second veto from Matheson.¹⁹

The bill was approved on almost straight party lines — Republicans favoring repeal and Democrats opposed. The *Salt Lake City Tribune* noted that only one Republican representative, who called himself a lifelong Republican and union member, voted against repeal and broke away from party lines.²⁰

When Matheson vetoed the bill in 1981, he said, "I'm convinced that repeal of this law is not in the best interests of working people in the trades whose skills are essential for a vigorous construction industry."²¹ Nonetheless, the Senate overrode the veto 21-7 and the repeal took effect 2 months later.

Those in favor of the repeal maintained that the prevailing wage law was inflationary and pro-union. Republican C. McClain (Mac) Haddow sponsored the 1981 repeal bill. He said, "the law is outmoded and is preserved only as a tool to extend union control. The law is contrary to Utah's right-to-work philosophy...."²²

Roger Evershed, president of the Associated Builders and Contractors, predicted a 10 to 15 percent savings on public works projects with repeal.²³

Arizona. The next state to repeal was Arizona in 1984.²⁴ Arizona's statute began as an eight-hour work day in 1912 and, by 1930, became a prevailing wage law. In a court test, the statute was found unconstitutional in September 1979.²⁵ In November 1984, voters repealed the statute in a ballot initiative, Proposition 300. Provisions of the ballot initiative prevented communities from implementing local prevailing wage statutes.²⁶

Idaho. Idaho's prevailing wage law was first enacted in 1911 as an eight-hour law. The statute was extensively amended until 1965; efforts to repeal it began in 1979. The legislature failed to override several vetoes but did repeal the law in 1985.²⁷ At the same time, overtime pay requirements for more than eight hours of work were repealed.²⁸

Colorado. Colorado also repealed its prevailing wage law in 1985.²⁹ Attempts for repeal began in the late 1970s, but it was not until after the governor had vetoed the bill several times that the veto was overridden and the repeal passed. Nevertheless, since 1985 at least one municipality, Pueblo, established its own prevailing wage rate for local construction.³⁰

New Hampshire. New Hampshire joined Colorado and Idaho in 1985 when it, too, repealed.³¹ Although legislators began in 1979 to try to repeal the prevailing wage law, they did not succeed until 1985. Influenced by reports of inflated costs on a school construction job, both houses passed repeal without the signature of Governor John Sununu.³²

Kansas and Louisiana. Kansas, the first to have a state prevailing wage law, repealed it in 1987.³³ Louisiana followed in 1988 with repeal over the initial veto of the governor.³⁴

Efforts to Repeal Other Prevailing Wage Laws

The Massachusetts ballot initiative. In Massachusetts, in 1988, thousands of union members, already active in the presidential election, worked with community groups to help defeat a ballot

initiative that would have repealed the state's 1914 prevailing wage law. The effort to block repeal in Massachusetts appears also to have slowed efforts to repeal other state prevailing wage laws until the midterm elections of 1994. Massachusetts Question 2, the repeal initiative and the hottest issue on the ballot that year, was defeated 58 to 42 percent on November 8.³⁵

The Massachusetts law requires contractors to pay employees on state-financed projects a predetermined wage. Prevailing wage rates are most often based on collective bargaining agreements, which vary by trade and geographical jurisdiction.³⁶

In 1988, the Associated Builders and Contractors (ABC) and Citizens for Limited Taxation formed a coalition that spearheaded the repeal effort, with a signature drive run by the "Fair Wage Committee." In March, a report by the Massachusetts Foundation for Economic Research, *The Peculiar Prevailing Wage Law*, presented the public rationale for a repeal of the state law.³⁷ The report stated that the many attempts to modify the prevailing wage law were defeated before reaching the governor's desk.³⁸ Using confidential data collected from a construction contractor, the authors estimated that the prevailing wage law increased construction costs by 14 percent through higher wage costs. The report concluded that, "in 1987, the prevailing wage law cost Massachusetts at least \$212 million dollars."³⁹

In August, in response to the report by the Foundation for Economic Research, the Regional Information Group of Data Resources Inc. presented a contrasting view. Data Resources said the earlier report had used insufficient data and oversimplified analyses.⁴⁰ Data Resources maintained that a repeal in 1990 would result in a "total wage loss of \$196 million and a net employment loss of 600." Data Resources concluded that although there would be nominal tax savings with a repeal, the overall impact would be to increase unemployment and lower living standards.⁴¹

By the end of a hard-fought campaign, community support included the Catholic Church; the Jewish Labor Committee; the Massachusetts Nurses Association; the National Women's Political Caucus; and the National Organization for Women.⁴²

A similar effort in 1994 to repeal by initiative failed on the Oregon ballot. The battleground has shifted back to state legislatures and the U.S. Congress.

Efforts to Repeal Davis-Bacon

The onset of state efforts to repeal prevailing wage laws coincided with U.S. Senate hearings in 1979 to repeal Davis-Bacon. During the first hearings, Davis-Bacon proponents defended the law with these points:

1. The act prevents the disruption of local wage and construction market conditions by the introduction of federally financed construction.
2. The act protects the prevailing living standards of construction workers by discouraging cutthroat competition by construction contractors.
3. The act provides equality of opportunity for contractors who are free to bid on the basis of skill, efficiency, and knowledge, rather than on their ability to slash labor standards.

4. The act helps maintain the high quality of the construction labor force and equal employment opportunity in the construction trades by encouraging use of bona fide training programs on federally funded construction.⁴³

Advocates of repeal of Davis-Bacon said:

1. The act has inflated construction costs.
2. The act costs the federal government huge amounts of money.
3. The act is poorly administered.
4. The act is biased toward union contractors and hurts non-union contractors.
5. The act has caused wage inflation.
6. The act discriminates against minorities, because they are disproportionately represented among the low-skilled labor force.
7. The free-market system is suppressed.

Although the Davis-Bacon Act was not repealed in 1979, the Reagan administration changed the way the law is administered a few years later. The administration in 1985 altered the 30 percent rule. Until then, the Department of Labor used the modal — most common — wage to determine the prevailing wage for an occupation in a local labor market, if the modal wage to the penny accounted for more than 30 percent of all wages for that group.⁴⁴ If the modal wage accounted for fewer than 30 percent of all wages, the mean (average) wage was declared the prevailing wage.

The Reagan administration raised the threshold to 50 percent before the modal could be declared the prevailing wage. Union wages tend to be the modal wage and they tend to be above the mean or average wage for an occupation. So the Reagan administrative change had the effect of lowering the prevailing wage in areas where unions were weak. Given construction unionization rates have fallen from around 80 percent of the construction labor force in the 1940s to around 60 percent in the 1960s to around 25 percent in the 1980s, the impact of the Reagan administrative changes were substantial.⁴⁵

* * *

Some of the competing claims for and against Davis-Bacon can be tested against the experience of the states — those that have repealed state prevailing wage laws, as well as those that continue to have such laws, and states that have never legislated a prevailing wage. This study examines the contentions of Davis-Bacon proponents that prevailing wage laws prevent the disruption of local wage and construction labor markets and that prevailing wage laws protect living standards and discourage cutthroat competition. This study examines, as well, the contention of Davis-Bacon opponents that the law costs government considerable sums of money and discriminates against women and minority construction workers. The study also raises two new questions. First, what are the effects of prevailing wage laws on training and human capital formation in construction? Second, what effects do these laws have on the safety and health of construction workers?

II. The Economic Effects of Davis-Bacon Repeals

Cutthroat Bidding

As soon as the law was repealed, some of these non-union people [contractors] that had been doing small work around town suddenly just took off, and the union people [contractors] like ourselves, our market share decreased.

– President, a union construction company, Salt Lake City, 1993

[Our] company has consisted of my father and my grandfather and me from about 1963. [We are a double-breasted company.] Company A is a union [general] contractor that hires merit shop companies with no regard to union affiliation. Company B is a non-union merit shop company.... Our industry became very competitive during the mid-eighties, a lot of people are chasing the same type of work.

– General contractor, double-breasted company, Salt Lake City, 1993

We've been in business for 51 years. Before that my great-grandfather ran a construction company and so we've always done construction. Right now we're doing mostly mechanical, and we do utilities, Mountain Fuel, water lines, sewer lines, AT&T jobs. We've built homes. We've built golf courses. We've built apartment buildings. In the last probably about eight years [since the mid-1980s] there's a lot more small companies – little tiny, you know, dad and his three boys. We can't compete against them. We have too much overhead to do that and you get small start-up companies, they're willing to work for nothing for a while and you know they'll go out there for two years and just take these jobs dirt cheap. Sometimes they can't finish. They'll go broke in the middle but still, we don't want to work for nothing. We'd just rather lock the gate and wait.

– Office manager, union construction company, Salt Lake City, 1993

When Utah repealed its prevailing wage law in 1981, the structure of the construction industry changed dramatically. The most obvious effect was the decline of union membership and union contractors. But this was only the most obvious effect. Underlying the decline of union contractors was the rise of the small contractor and increasing turnover of contracting firms in the business. The industrial organization of the industry changed, with an increased reliance on subcontractors.

Comparing the 12 years prior to repeal to 10 years after repeal, the share of total construction employment accounted for by the typically bigger and more capital-intensive general contractors and heavy and highway contractors fell, while the share of total employment accounted for by specialty subcontractors rose (fig. 2.1).

With the entry into the market of more contractors and smaller contractors, competitive pressure to win bids heated up. This pushed wages down. An operating engineer familiar with the bidding wars stimulated by Utah's prevailing wage law repeal tells how the bidding affected labor.

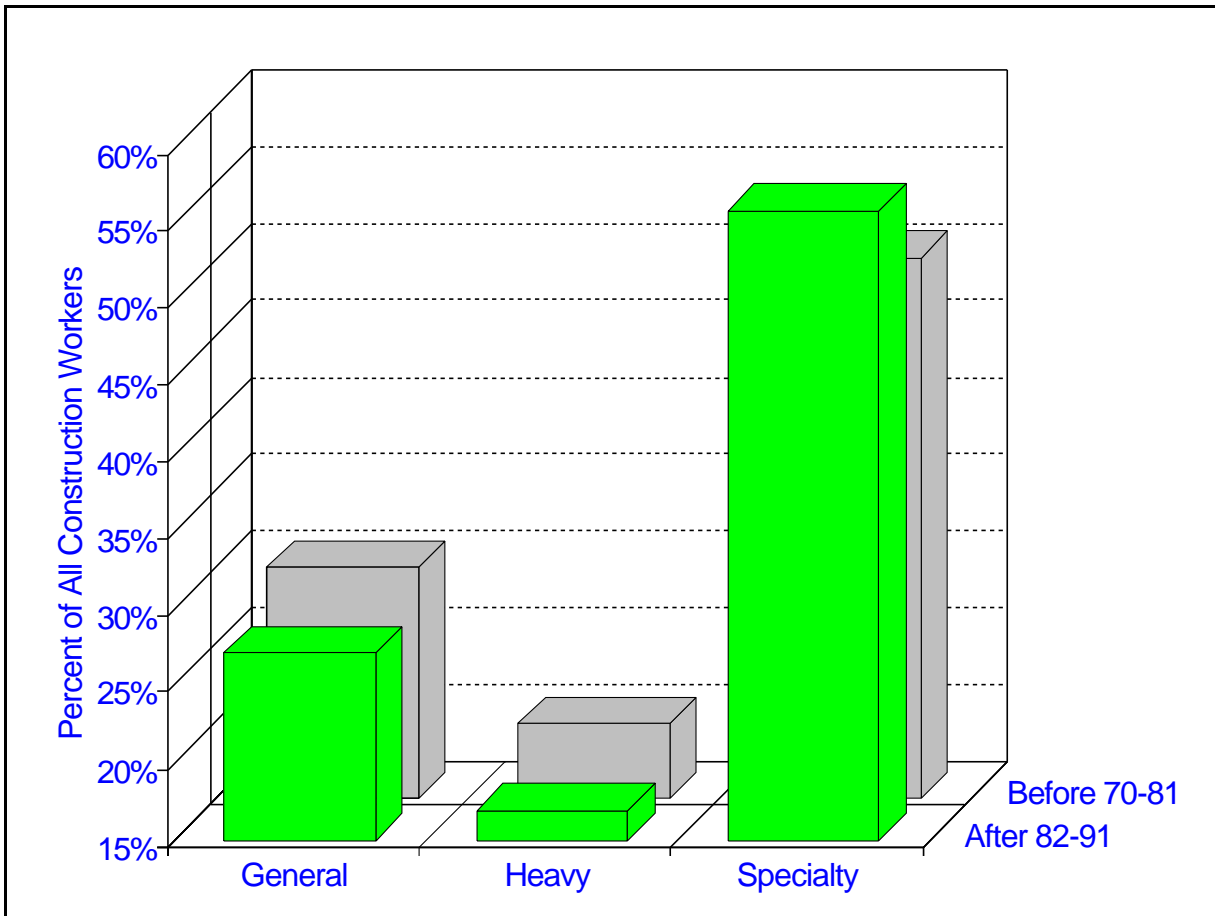


Figure 2.1 The mix of construction employment in Utah by contractor type, before and after the repeal of the state’s prevailing wage law.

Source: Utah LMI Annual Report, Table 5.

After the repeal of the state’s prevailing wage law, the distribution of employment shifted among types of contractors in Utah. In the decade before the 1981 repeal a higher percentage of construction employees worked for general contractors and heavy-and-highway contractors. These are typically larger firms. After the repeal, a higher percentage of employees worked for specialty contractors, which tend to be smaller firms.

When they repealed Utah's law, a lot of companies went out of business because of the cutthroat competition. A lot of companies just bought jobs so they could have a cash flow to make payments on their equipment. The design engineers would tell the contractor that let's say the job was going to cost a million dollars. The contractor would still go in there anyway and low-ball the bid. Then they would turn around to their workers and make their wages fit whatever they had to be to fit the low-ball bid.

The general contractors did a lot of bid shopping after the prevailing wage law was repealed. The general contractor would get a bid from the subcontractor of say \$50,000 and then he would low-ball the bid. Then, when the general got the job he would go back to the subcontractor and say yeah I've got the job but you've got to cut your bid to \$40,000 to have this job I've got and the sub would go back to the workers and say OK we've got this job but now I've got to cut your wages.

See costs of materials and supplies and equipment were stable. The price of bricks and the asphalt didn't go down just because you got this job. So the workers had to make up the difference for all this low-ball bidding. So basically the employer got their money off the backs of the worker. Whether it was to make money or just to break even, wages had to fall.

- Operating engineer, Bountiful, Utah, 1994

But wages were not the only factor to feel the strain of an overheated bidding process. Government purchasers of construction services were now exposed to practices of low-balling bids and over-running costs. Average annual cost overruns for the Utah Department of Transportation prior to the law's repeal was 2 percent of initial accepted bid (fig. 2.2). Since the repeal, however, overrun costs have risen to 7.3 percent of the initial bid. This rise in overrun costs has come despite the introduction of computers as a tool for contractors in preparing their bids.

The cause of these increased overrun costs is the post-repeal tendency for contractors to take more risks in the bidding process under the pressure of increased competition (fig. 2.3). When the state calls for bids on a project, the state engineer prepares an initial estimate of the project's cost. In the decade prior to the repeal of Utah's prevailing wage law, winning bids averaged 91 percent of the state engineer's estimate. After the repeal, winning bids have been, on average, 89 percent of the state engineer's estimate. Although contractors are apparently shaving their bids to win state contracts, these lower estimates have not proved to be a windfall for the state.

Instead, after Utah's prevailing wage law repeal, final construction costs have been running at 95 percent of the state engineer's initial estimate. This amounts to 6 percentage points above the accepted bids. Prior to Utah's repeal, final costs were running 93 percent of the engineer's estimate, only two points higher than initial accepted bid prices.

This does not necessarily mean that the pre-repeal construction was ultimately cheaper for the state, but it does mean that the relationship between accepted bid price and actual costs was more certain and that contractors promised less before Utah's repeal, but delivered more relative to the state engineer's cost estimates.⁴⁶

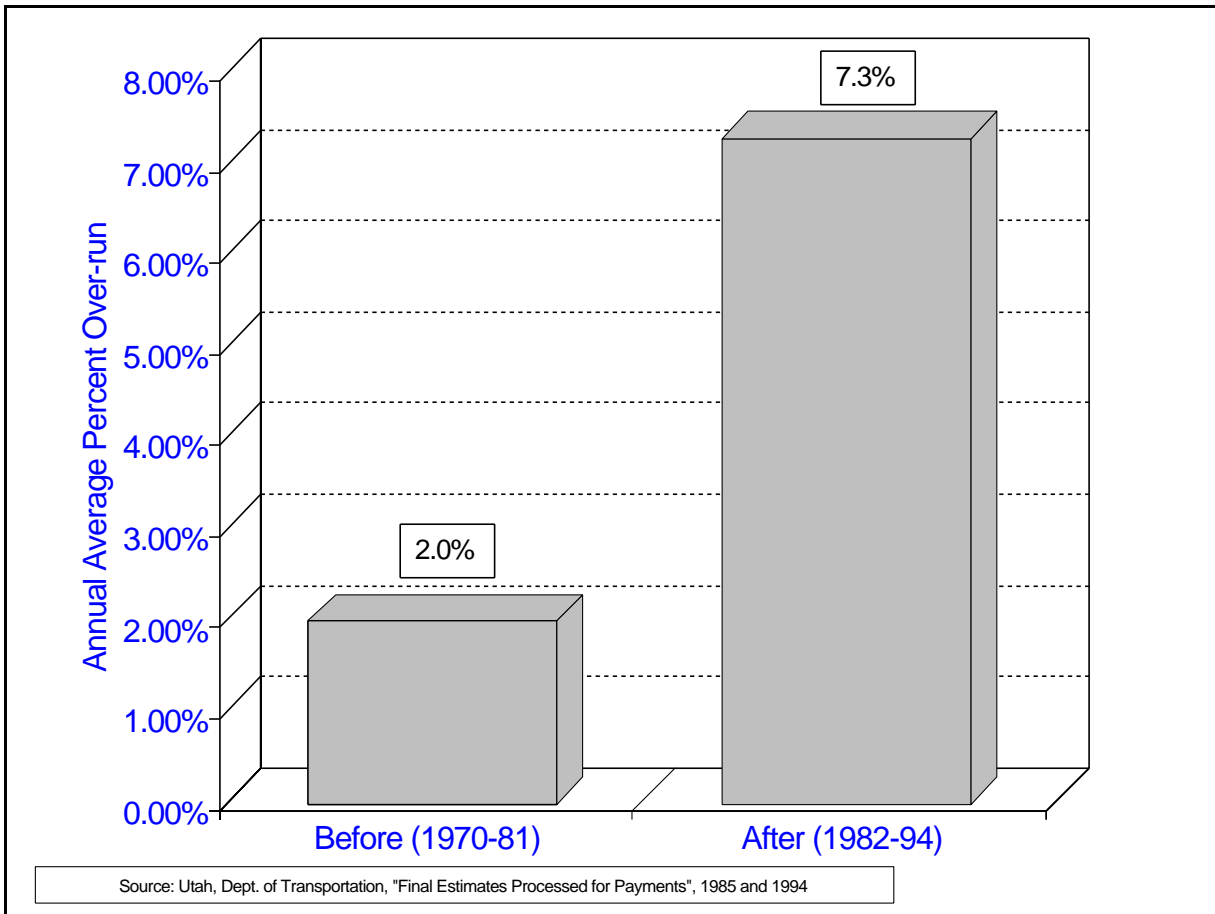


Figure 2.2 Average cost overruns as a percentage of accepted bids on Utah road construction, before and after repeal of the state prevailing wage law

Cost overruns on the construction of Utah roads averaged 2 percent over accepted bids in the decade before Utah's repeal of its prevailing wage law. In the decade after repeal, average cost overruns rose to 7.3 percent over the accepted bid. Change orders associated with cost overruns are one of the more expensive components of construction costs.

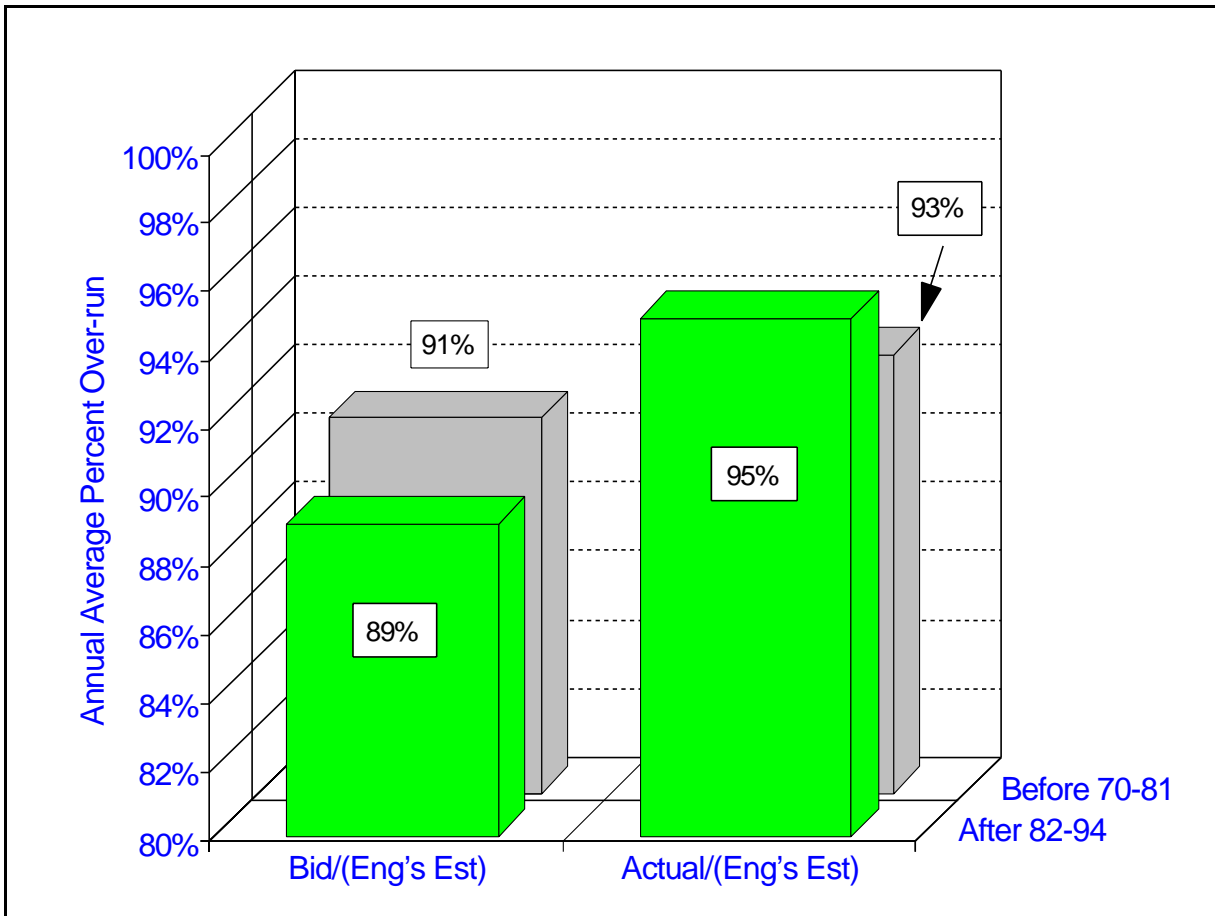


Figure 2.3 The ratio of accepted bids and final cost to the Utah state engineer's estimate of road construction project cost, before and after repeal of the state's prevailing wage law

After the Utah repeal of its prevailing wage law, competition among contractors heated up and contractors shaved their bids to win contracts. In the decade before the state repeal, accepted bids averaged 91 percent of the state engineer's estimated project cost on road construction. After repeal, accepted bids fell, on average, to 89 percent of the state engineer's estimates. However, this cutthroat bidding did not cut final project costs as a percentage of the state engineer's estimates. In the decade prior to the repeal of Utah's prevailing wage law, final costs averaged 93 percent of the state engineer's project cost estimate. In the decade after the repeal, because of a tripling of cost overruns, the final project costs averaged 95 percent of the state engineer's estimate.

A Loss of Earnings for All Construction Workers

Heightened competition after Utah's repeal has not only created uncertainty in the bidding process, but has also lowered Utah construction wages across the board. A union plumber describes this:

After Utah repealed its little Davis-Bacon law I was working on a job as a union plumber. The electricians on the job were non-union. At that time there was terrific pressure on wages and, as I remember, the IBEW [International Brotherhood of Electrical Workers] took a big wage cut – something like \$3 – from \$16 to \$13. Anyway, the day after the union electricians took that cut, the contractor came on the job and told these non-union guys they would have to take a \$3 cut too. There was a lot of animosity around that but they took the cut anyway. They had to. Our union held off two years before we had to do the same thing the electricians did, and when we took our cut the non-union plumbers' wages fell right along with ours.

– Union plumber, Salt lake City, 1994

Utah repealed its prevailing wage law just as the economy was falling into the 1982 recession. Thus, the effects of the repeal initially were tangled up with the effects of the recession. However, some of the nine states that have repealed their prevailing wage laws did so in good times and some in bad times. A comparison across states can somewhat disentangle effects of the business cycle from effects of a repeal.

Whatever a government might save in construction expenses from the repeal of a prevailing wage law, the saving has to be balanced against the loss of other revenues. The lower wages paid on government-financed construction have a ripple effect, lowering wages throughout the local construction industry. Construction workers in states that have a prevailing wage law have a higher average annual income than construction workers in states that have repealed a law; and those workers, in turn, earn more, on average, than do construction workers in states that have never had a prevailing wage law (fig. 2.4). That pattern may be explainable, however, for more than one reason. States that have different prevailing wage law policies may have higher or lower construction earnings for reasons unrelated to the wage law. For instance, repeal states might also be low-wage states in general.

It may thus be more useful to isolate earnings data for repeal states only – before and after (fig. 2.5). Average annual construction-worker earnings in the nine states that repealed their prevailing wage laws from 1979 through 1988 show a drop of \$1,835 from \$24,317, or about 7.5 percent in wages, adjusted for inflation and denominated in 1991 dollars, or \$2,016 in 1994 dollars. The nine states are not heavily unionized and a fall of this magnitude cannot be accounted for simply by a fall of union wages to the non-union level.

In recent years, the average construction unionization rate in the nine states that repealed their state prevailing wage laws has been around 13 percent of the construction labor force.⁴⁷ With this level of union coverage, for a fall in the union wage to account for all of the fall in the average wage, at the outset of the repeal, union workers would have had to have been earning 60 percent more than non-union workers.⁴⁸ Union wage differentials typically are around 10 to 20 percent above non-union wages. Because union wages are not sufficiently high and union coverage not sufficiently wide to account for all the fall in construction wages in these repeal states, we know that non-union workers have had to absorb some share of this average earnings decline.

If one assumes that the union differential is 20 percent above the non-union wage and, after the repeal, the union wage falls to the non-union wage, both wage rates will have to fall even further to attain an overall 7.5 percent cut in earnings. Assuming that the union wage would fall to the non-union rate and then they would both fall together, the union wage would have to fall by 21 percent and the non-union rate would have to fall by 5 percent to obtain an overall fall of 7.5 percent.⁴⁹ In fact, only rarely does the union rate fall entirely to the non-union wage. A reasonable assumption would be that the union rate prior to a repeal was 20 percent above the non-union rate and after the repeal fell to 10 percent above the non-union rate. Given a 7.5 percent overall fall in earnings and a 13 percent union membership rate, union wages would have to fall 14 percent and non-union wages would have to fall 6.3 percent to obtain an overall fall of 7.5 percent. In other words, while the union rate would have to fall twice as much as the non-union rate, the non-union sector of construction workers would have to absorb much of the average percentage wage cut. The effects of state repeals of prevailing wage laws are isolated neither to union workers nor to government-financed construction.⁵⁰ They generate across-the-board cuts in the earnings of all construction workers.

A Loss of State Tax Revenues

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. On average, construction workers account for 5 to 6 percent of a state's labor force. In Utah in 1991, individuals earning \$20,000 to \$30,000 paid a marginal state income tax rate of about 7 percent. Taking the 31,528 construction workers employed in Utah in 1991 and an average per capita decline in income of \$1,835, the total loss of annual income from the Utah construction industry in Utah in 1991 because Utah's 1981 repeal could be calculated as \$58 million (\$1,835 times 31,528). Given a marginal tax rate of 7 percent, 1991 lost state income tax revenues might amount to \$4 million (in 1991 dollars) (table 2.1). Assuming a marginal propensity to consume on sales-taxable items from changes in income of 80 percent and a sales tax rate of 6.25 percent, lost state sales tax revenues from this loss of income amount to \$2.9 million in 1991.⁵¹ 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.

The figure of \$8.2 million in lost tax revenues may be an overestimate for four reasons, however. First, if wages fall and labor becomes cheaper, contractors might hire more workers. So we must consider possible increases in total income of construction workers resulting from possible increases in total construction employment after a fall in wages. Second, real wages have been falling in the United States generally, including the construction industry. Some of the lower wages after state repeals may simply reflect a long-term decline in real wages that would have taken place anyway. Third, annual earnings in construction are sensitive to unemployment. Earnings rise when unemployment falls and fall when unemployment increases. Because

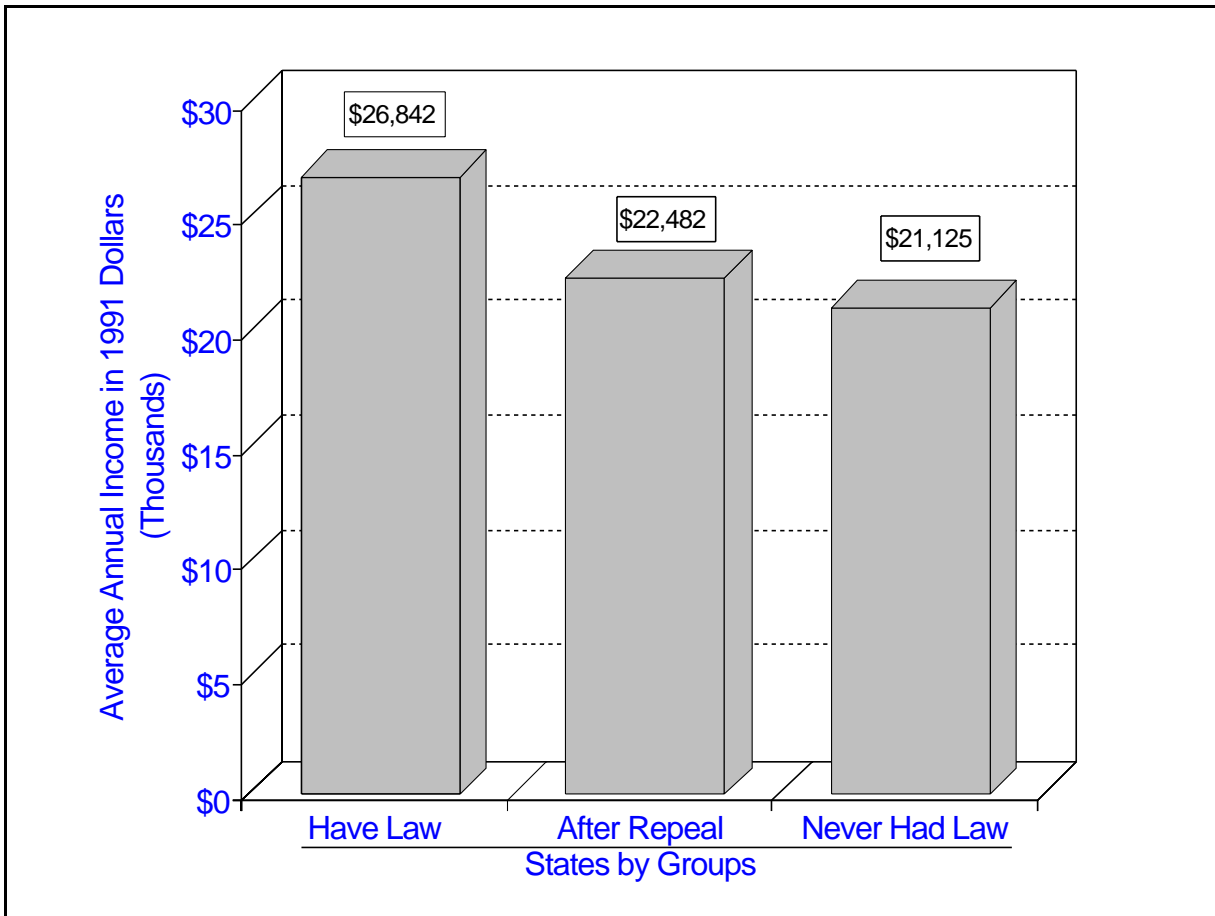


Figure 2.4 A comparison of annual construction earnings, by status of prevailing wage law
Source: US DOL Employment and Earnings, 1975-91.

Figure 2.4 groups states into three categories (from left to right). The first bar, on the left, shows average annual income in 1991 dollars for construction workers in all states and years where a state prevailing wage law was enforced. This includes repeal states prior to repeal. The second bar shows the average annual earnings of construction workers in repeal states after repeal. The third bar represents average annual earnings for construction workers throughout 1975 to 1991 in all states that never had a prevailing wage law. These data provide initial evidence that repealing or never having a prevailing wage law lowers construction income not only on public works but across the entire state construction industry.

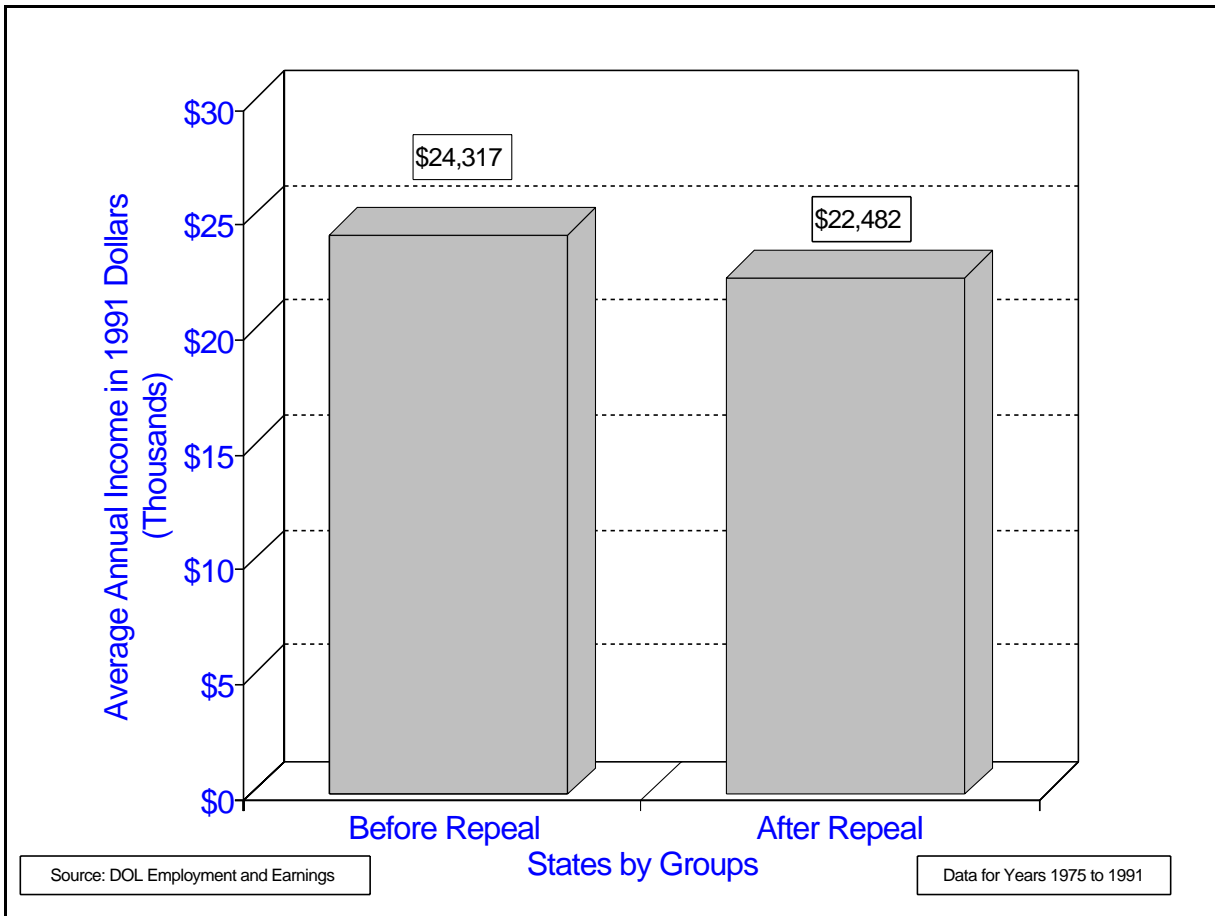


Figure 2.5 A comparison of construction earnings in nine repeal states only, before and after repeals (in 1991 dollars)

In the nine states that repealed their prevailing wage laws between 1979 and 1988, average annual income fell after the repeals (calculated in constant 1991 dollars). This fact does not control for other factors that might have been driving down wages, but it is prima facie evidence that the repeals forced lower earnings not just on public works but across the construction labor market.

Table 2.1 A simple estimate of Utah tax revenues lost in 1991 as a result of the 1981 state prevailing wage law repeal

Individual construction income prior to repeal (1991 dollars)	\$24,317
Individual construction income after repeal (1991 dollars)	\$22,482
Lost income due to repeal (1991 dollars)	\$1,835
1991 Utah construction employment	31,528
Total lost income in construction (1991 dollars)	\$57,853,880
Lost Utah income tax	\$4,049,772
Lost Utah sales tax	\$2,776,986
Total lost tax revenues	<u>\$6,826,758</u>
Total lost tax revenues in 1995 dollars	<u>\$8,192,109</u>

The average annual construction earnings in 1991 dollars for nine repeal states in the years after 1975 and before each state’s repeal was \$24,317. In the years after each repeal up to 1991, the average construction earnings fell to \$22,482. Utah construction employment in 1991 was 31,528 workers and multiplying these by an annual loss of income of \$1,835 yields a total lost income in Utah construction of \$57.8 million. Based on Utah’s income tax rate of slightly over 7 percent and a sales tax rate of slightly over 6 percent and a marginal propensity to consume taxable items of 80 percent, total lost state tax revenues were \$6.8 million. In 1995 dollars, this is \$8.2 million.

unemployment varies by state and year, some of the difference in earnings might be because of variations in the unemployment rate. Last, construction wages vary by region for reasons that are not directly due to the presence or absence of prevailing wage laws. These regional differences in earnings, unemployment, and long-term trends in wages can be accounted for by using linear regression analysis.

Regression Analysis of the Decline of Construction Worker Earnings

Using linear regression analysis, this section uses U.S. Department of Labor employment and earnings data for construction workers broken down by states for 1975-91 to re-estimate the construction earnings loss resulting from state repeals of prevailing wage laws. The analysis controls for long-term trends in wages, variations in unemployment, and variation in wages by region of the country, and then focuses on the effect of (1) never having had a prevailing wage law, (2) repealing a prevailing wage law, and (3) raising the threshold for implementing a state prevailing wage law to contracts worth \$500,000 or more.

U.S. Department of Labor employment and earnings data provide detailed information on annual construction earnings broken down by year, state, and type of construction contractor.⁵² For 1975-91, there are 27,778 separate observations. The inclusion in these data of information about prevailing-wage law status by state and year and translation of all money values into 1991 dollars (using the consumer price index) allows us to test for (1) the effect that never having had a prevailing wage law has on per capita construction earnings, (2) the effect on individual earnings of repealing a state prevailing wage law, and (3) the effect on individual earnings of raising the threshold for applying a prevailing wage law.

In this test, we control for regional differences in construction earnings, secular trends in earnings,⁵³ cyclical variations in earnings as a result of variations in unemployment, and differences in earnings by detailed contractor type.⁵⁴

The data used for this test include average earnings across all states, years, and construction trades — \$26,645 per year in 1991 dollars (table 2.2).⁵⁵ States that never had a prevailing wage law account for 15.6 percent of all the observations. States that repealed their laws account for 10.5 percent of all observations after repeal and 7.8 percent of all observations before they repealed their laws, for a combined total of 18.3 percent. States that had and retained their prevailing wage laws between 1975 and 1991 account for the remaining 66.1 percent of all observations in the data set. Maryland and Oklahoma, the states with prevailing wage laws but with threshold levels of projects costing \$500,000 or more, account for 4 percent of all observations. State-by-state unemployment rates in this period averaged 6.76 percent annually.

The results of this regression model estimating the effects of state repeals on construction earnings are statistically significant and the overall model has a goodness of fit of 73 percent, which means that 73 percent of the overall variation in annual earnings in the data set are explained by the model. The results may be read as follows (see table 2.3).

Begin with a constant amount of annual earnings of \$33,005. (This is a starting point calculated by the regression model and is typically called the "constant.") Then select a state and a year. In any state for any year we know the status of prevailing wage laws for construction. We use Utah as an example in column (3). Utah once had a prevailing wage law, but, by 1991, that law had been repealed. Furthermore, 1991 was 17 years after the beginning of the data set

Source: U.S. Bureau of Labor Statistics, Office of Earnings and Employment Statistics.

Table 2.2 A description of the data used in regression model of earnings decline

Observations	27,778
Average Earnings	\$26,645
<i>Variables</i>	<i>Percentage of data</i>
<i>Percent of all observations by region</i>	
South	29.9%
Midwest	13.9%
Atlantic	10.5%
Mountain	10.5%
Corn Belt	10.3%
Pacific	8.8%
New England	8.2%
Hawaii	1.1%
Alaska	0.4%
<i>Other control variables</i>	
Average state unemployment rate	6.76%
Percentage of states with threshold for applying state law of more than \$500,000	4.3%
<i>Legal variables</i>	
Percentage of all states that are repeal states	18.3%
Percentage of all states that never had state law	15.6%

Table 2.3 A regression estimate of the effects of state repeals on construction annual earnings, controlling for regional differences in earnings, and secular and cyclical trends in earnings

Regression Model Variables and Coefficients		Examples for 1991 (in 1991 Dollars)		
		Utah	Maryland	Georgia
(1)	(2)	(3)	(4)	(5)
Starting Point:	\$33,005	\$33,005	\$33,005	\$33,005
Regional Control Variables:				
Alaska	\$15,628			
Hawaii	\$7,982			
Midwest	\$4,768			
Pacific	\$4,638			
Atlantic	\$4,617		\$4,617	
New England	\$1,545			
Corn Belt	\$1,010			
Mountain	-\$79	-\$79		
South	-\$2,360			-\$2,360
Trend Control Variables:				
Secular Trend	-\$225	-\$3,829	-\$3,829	-\$3,829
Unemployment	-\$30,231	-\$1,481	-\$1,784	-\$1,512
Focus on Legal Variables:				
Never Had Law	-\$2,960			-\$2,960
Repeal	-\$1,350	-\$1,350		
Threshold \$500,000	-\$1,174		-\$1,174	
Predicted Income:		\$26,266	\$30,836	\$22,345

Table 2.3: Controlling for regional differences in construction annual earnings, and secular trends and cyclical variations in earnings, repeals in 9 states lowered construction earnings by \$1,350 annually in 1991 dollars. Having a threshold of \$500,000 for applying the state law had almost the same effect as a repeal but this is based on the experience of only two states. Never having had state prevailing wage laws has almost double the negative effect on earnings compared to having recently repealed the law. This suggests that the negative effects of repeals on earnings may not have fully matured by 1991, the end of our data series.

and thus, the time variable is set at 17 and Utah is in the mountain states region. Set all other regional variables to zero and multiply the mountain states control coefficient by 1. Multiply the secular trend control variable by 17 because this is the seventeenth year of the data set. Multiply the unemployment control by 4.9% because that was the unemployment rate in Utah in 1991. Set the "never had law" variable to zero because Utah did have a prevailing wage law up to 1981 and set the threshold variable to zero, because in 1991 Utah did not have a prevailing wage law (and even when it did, the threshold was below \$500,000). Now, set the repeal variable to 1 and multiply it times the repeal coefficient. Thus, the model now predicts Utah's 1991 construction income to be \$26,266. That is \$33,005 (the starting point) minus \$79 (lower wages in the mountain states) minus \$3,829 (secular down trend in real wages) minus \$1,481 (associated with unemployment) minus \$1,350 (because of Utah's prevailing-wage law repeal). The same exercise yields a predicted income of \$30,836 for Maryland in 1991 and \$22,345 for Georgia in 1991. Change the year and/or the state and the model predictions change. The R² statistic of 73 percent indicates that the model fits the data well and that the predicted values are close to the actual earnings in the various states for the various years.⁵⁶

Controlling for all these variables, the model estimates that the effect of the repeal of the nine state prevailing wage laws was a negative \$1,350 annual hit on construction earnings. Given average annual earnings of \$26,645, this means a decline in earnings of 5.1 percent. This is a low estimate of a repeal's effect on earnings. The effect of a repeal may accumulate with time. The states that never had prevailing wage laws in construction have lower construction wages — after controlling for regional differences in wages and differences in unemployment rates. The model estimates that, in the nine repeal states, construction earnings are \$2,960 less than in other states, controlling for other factors. This is an 11 percent reduction in construction earnings associated with never having had a prevailing wage law. The simple procedure in the previous section which compares construction earnings in repeal states before and after repeals estimates the repeal effect to have a 7.5 percent negative effect on earnings. *Thus, the range of estimated effects varies from 5.1 percent to 7.5 percent to an 11 percent decline in construction earnings associated with the repeal or absence of prevailing wage laws.*⁵⁷

Increased Employment Associated with Lower Wages

As construction labor becomes cheaper, contractors may alter their crew mix to use more workers who are unskilled. Have the nine state repeals of prevailing wage laws generated higher levels of employment? Construction employment varies markedly with seasonal and cyclical trends in the economy. These employment swings can hide the effect of more jobs generated by falling wages. For instance, Utah repealed its prevailing wage law just as the construction economy was going into recession. On the surface, it looked like the repeal and wage cuts did not generate more construction employment. Multivariate linear regression analysis can control for these variations and pick out the potentially hidden effect of a repeal, controlling for other factors.

Table 2.4 presents the results of a generalized least-squares regression test of the hypothesis that, as construction earnings fall, all other things being equal, construction employment will rise. The model controls for variations in unemployment, secular trends in employment construction, and any nonwage effect on employment associated with the repeal of a state prevailing wage law. The focus variable in the model is average annual earnings in construction and the hypothesis is that the

relationship between earnings and employment should be negative. As earnings go down, employment might well go up. The regression model also includes control (dummy) variables for each state and each detailed industry classification (four-digit SIC; such as, plumbers and pipe fitters, SIC 1711). Thus, the model predicts construction employment in specific states, years, and each construction subclassification, such as plumbing and pipe fitting. In the data set for 1975-91, the average employment in a four-digit subclassification is 3,540 construction workers. The unemployment rate, not surprisingly, negatively affects construction employment and there is a small but statistically significant upward trend in employment. The effect of prevailing wage rate repeals on employment is negative, but this variable is not statistically significant which means the true direct effect of repeals on employment is zero.

However, the indirect effect of state repeals on employment working through lower earnings is not zero. The effect of earnings on employment is as theoretically expected. As earnings fall, employment increases and this estimated effect is statistically significant. From this relationship, we can estimate the indirect effect of state prevailing wage laws on employment through the repeals' effects on earnings.

Possible employment effects may be calculated for various levels of earnings decline. In table 2.5 column (1) presents hypothetical earnings declines and, in column (2), the results from table 2.4 are used to calculate a predicted increase in the construction industry when it is analyzed at the detail of 4-digit SIC codes (such as plumbers and pipe fitters, SIC 1711). As average annual construction earnings fall from a loss of \$500 to a loss of \$3,000, employment in given SIC industry groups rises from 24 new workers to 118 new workers.⁵⁸ Given an average employment size of a 4-digit-SIC industry group of 3,540, these hypothetical increases in employment translated in percentage terms to an increase of from 0.7 percent when earnings fall by \$500 to an employment increase of 4.0 percent when earnings in construction fall by \$3,000.

The Net Effect of Repeals on Government Budgets

The overall effect of state repeals of prevailing wage laws on state expenditures in construction and state tax revenues will depend on the amounts of government cost savings from such a repeal and lost tax revenues from a repeal. Government construction cost savings will depend on three questions: how much lower are wage costs after a repeal, how much lower is worker productivity at lower wages, and how much construction work does the government purchase? Lost tax revenues will depend on (1) the marginal income tax rate for construction workers earning \$20,000 to \$40,000 per year, (2) the sales tax rate, (3) the marginal propensity to consume taxable commodities for construction workers earning \$20,000 to \$40,000 per year, (4) lost per-capita construction income associated with a repeal, and (5) gained construction employment associated with a repeal. (The \$20,000 to \$40,000 range encompasses most construction workers.)

Previous estimates of construction cost savings associated with a hypothetical repeal of the federal Davis-Bacon Act range from 1 to 11 percent.⁵⁹ The Congressional Budget Office favors an estimate of a 1.5 percent cost savings associated with the wage effect plus a 0.2 percent cost savings because of paperwork associated with Davis-Bacon.⁶⁰ The savings may be higher or lower.

Table 2.4 Effects of wages on employment, controlling for state differences in employment, differences in the size of SIC groupings, the direct effects of repeals, and secular and cyclical trends

(1)	(2)
Starting point:	5,500 workers in each SIC group in state
Unemployment rate	Subtract 211 workers for each percentage-point rise in unemployment
Secular trend	Add 31 workers for each additional year
Repeal	Subtract 170 workers (not statistically significant)
Average Earnings	Subtract 47.1 workers per \$1,000 increase in earnings
Number of Observations	27,778
Avg. Employment in SIC Group by State and Year	3,540

Note: An example of a four-digit SIC (Standard Industrial Classification) group is plumbers and pipe fitters, SIC 1711.

Controlling for state differences in construction employment, differences in the size of four-digit SIC groups (such as plumbing versus electrical), secular trends, and cyclical variations in employment in each state – and the direct effect of repeals on employment – a fall in earnings resulting from a fall in wages raises employment in construction. For an average-size SIC group of 3,540 workers, a

Table 2.5 Effects of construction earnings decline on employment for an average-sized detailed standard industrial classification of 3,540 workers per state

Various Hypothetical Earnings Declines	Predicted Rise in Employment Because of A Fall in Annual Construction Earnings	Percentage Rise In Employment Because of a Fall in Earnings
(1)	(2)	(3)
-\$500	24	0.7%
-\$1,000	47	1.3%
-\$1,500	71	2.0%
-\$2,000	94	2.7%
-\$2,500	118	3.3%

As repeals force a fall in construction wages and earnings, construction employment rises. The model in table 2.4 indicates that a \$500 fall in earnings results in a 0.7 percent rise in employment. An average annual \$3,000 drop in earnings would result in a 4 percent rise in employment. This is an "inelastic" demand for labor – the percentage that earnings declines is substantially higher than the resulting percentage rise in employment (for the 4-digit SIC group). This means that even though employment rises when wages fall, the rise in employment is relatively small compared to the fall in wages. Consequently,

The effect in Utah. In this section, we will simply accept all ranges of hypothetical or estimated savings rates from 1 to 11 percent in order to examine our model of lost tax revenues as it applies to Utah (see table 2.6).

Rows 1 through 10 of table 2.6 provide half of the information needed to calculate the net effect on Utah's budget balances associated with the repeal of Utah's prevailing wage law in construction. Row 2 shows the level of employment in construction in Utah for 1987 to 1993. Taking from our regression model the value of lost income associated with a repeal of a state prevailing wage law (-\$1,350) and translating that into 1994 dollars, using the consumer price index (-\$1,477), we multiply this lost income times the level of construction employment in Utah for each year. This lost income associated with a repeal, denominated in 1994 dollars, is shown in row 3. Row 4 shows the gained amount of employment associated with a fall in construction wages and earnings because of a repeal. Row 5 shows average construction worker income in each year (in 1994 dollars). Row 6 shows the gained income due to additional workers shown in row 4 multiplied by average construction worker income in row 5. Row 7 reports the difference between GROSS lost income due to lower earnings and gained income due to lower wages. This net lost income is the source of the lost income tax revenues reported in row 8.

Utah's income tax rate is flat at 7.2 percent above modest exemptions and deductions. Utah's sales tax rate is 6.25 percent. For construction workers, it is conservative to assume an 80 percent marginal propensity to consume locally on items subject to sales tax. This means that as a construction worker's income rises by \$1,000, that worker will spend \$800 on local commodities subject to state sales taxes. This allows for 20 percent of additional income to go to savings or purchases not subject to sales taxes. (Food purchases are subject to sales taxes in Utah.) Row 9 reports lost sales tax revenues as a result of net lost income reported in row 7. Row 10 combines lost income and sales tax revenues.

Rows 12 and 13 report in 1994 dollars the value of building and road construction in Utah not covered by the federal Davis-Bacon Act. Roughly 20 percent of road work in Utah is not covered by the federal prevailing wage law. Rows 16 through 21 calculate, again in 1994 dollars, hypothetical levels of construction cost savings associated with Utah's repeal of its prevailing wage law. These hypothetical savings range from 1 to 11 percent of total construction costs. Rows 23 to 28 subtract lost tax revenues from construction cost savings for the various hypothetical levels of cost savings.

Rows 23 to 28 show that in Utah, at total construction cost savings of below 3 percent, the repeal of the state's prevailing wage law tended to increase state finance deficits. The loss in tax revenues associated with lost construction worker earnings exceeded likely gains in construction cost savings. At and above 5 percent in total construction cost savings, the repeal helped tip the balance of state finances into the surplus. Using the Congressional Budget Office's estimate of a 1.5 percent increase in construction cost savings plus 0.2 percent in paperwork, the state of Utah would have lost more in tax revenues than it gained in construction cost savings every year since it repealed its prevailing wage law in 1981.

The likely effect of a Davis-Bacon repeal on federal budgets. For construction workers earning \$20,000 to \$40,000, federal marginal income tax rates range from 16 to 28 percent. There are no widely significant federal sales taxes. With these changes in mind, and using federal data for construction employment, we can use the above model to estimate the tax revenue effects of a repeal of Davis-Bacon (table 2.7).

Table 2.6 The relation of hypothetical construction-cost savings to tax revenues

1	Year	1987	1988	1989	1990	1991	1992	1993
2	Employment	26676	24981	25868	27836	31528	34902	39715
3	Lost Income	(\$39,397,044)	(\$36,893,746)	(\$38,203,731)	(\$41,110,216)	(\$46,562,828)	(\$51,545,795)	(\$58,653,981)
4	Gained Employment	478	447	463	498	564	625	711
5	Income	\$26,206	\$26,329	\$25,940	\$25,213	\$25,166	\$23,933	\$23,041
6	Gained Income	\$12,513,453	\$11,773,180	\$12,011,379	\$12,562,530	\$14,202,408	\$14,952,327	\$16,379,981
7	Net Lost Income	(\$26,883,591)	(\$25,120,566)	(\$26,192,352)	(\$28,547,686)	(\$32,360,421)	(\$36,593,468)	(\$42,274,000)
8	Lost Income Tax	(\$1,881,851)	(\$1,758,440)	(\$1,833,465)	(\$1,998,338)	(\$2,265,229)	(\$2,561,543)	(\$2,959,180)
9	Lost Sales Taxes	(\$1,344,180)	(\$1,256,028)	(\$1,309,618)	(\$1,427,384)	(\$1,618,021)	(\$1,829,673)	(\$2,113,700)
10	Total Lost Taxes	(\$3,226,031)	(\$3,014,468)	(\$3,143,082)	(\$3,425,722)	(\$3,883,250)	(\$4,391,216)	(\$5,072,880)
11	Value of State-Financed Construction							
12	Buildings	\$94,436,620	\$78,089,603	\$93,725,806	\$78,661,056	\$87,518,355	\$108,325,018	\$118,790,378
13	Roads	\$21,117,077	\$9,824,176	\$17,183,065	\$11,970,161	\$27,677,680	\$14,337,135	\$13,824,742
14	Total	\$115,553,697	\$87,913,779	\$110,908,871	\$90,631,217	\$115,196,035	\$122,662,153	\$132,615,120
15	Hypothetical Savings in Construction Costs							
16	1%	\$1,155,537	\$879,138	\$1,109,089	\$906,312	\$1,151,960	\$1,226,622	\$1,326,151
17	3%	\$3,466,611	\$2,637,413	\$3,327,266	\$2,718,936	\$3,455,881	\$3,679,865	\$3,978,454
18	5%	\$5,777,685	\$4,395,689	\$5,545,444	\$4,531,561	\$5,759,802	\$6,133,108	\$6,630,756
19	7%	\$8,088,759	\$6,153,964	\$7,763,621	\$6,344,185	\$8,063,722	\$8,586,351	\$9,283,058
20	9%	\$10,399,833	\$7,912,240	\$9,981,798	\$8,156,809	\$10,367,643	\$11,039,594	\$11,935,361
21	11%	\$12,710,907	\$9,670,516	\$12,199,976	\$9,969,434	\$12,671,564	\$13,492,837	\$14,587,663
22	Net Gain (or Loss) in Tax Revenues							
23	1%	(\$2,070,494)	(\$2,135,330)	(\$2,033,994)	(\$2,519,410)	(\$2,731,290)	(\$3,164,595)	(\$3,746,729)
24	3%	\$240,580	(\$377,055)	\$184,184	(\$706,786)	(\$427,369)	(\$711,352)	(\$1,094,426)
25	5%	\$2,551,654	\$1,381,221	\$2,402,361	\$1,105,839	\$1,876,551	\$1,741,891	\$1,557,876
26	7%	\$4,862,728	\$3,139,497	\$4,620,539	\$2,918,463	\$4,180,472	\$4,195,134	\$4,210,178
27	9%	\$7,173,802	\$4,897,772	\$6,838,716	\$4,731,087	\$6,484,393	\$6,648,378	\$6,862,481
28	11%	\$9,484,876	\$6,656,048	\$9,056,894	\$6,543,712	\$8,788,313	\$9,101,621	\$9,514,783

Table 2.7 Projected effect of a repeal of Davis-Bacon on the federal budget

1	Employment	6,000,000		
2	Lost Income (Employment* $\$1,477$)	\$8,862,000,000		
3	Gained Employment (Employment* 1.0179)	107,400		
4	Avg. Income in 1994	\$27,373		
5	Gained Income from New Employment	\$2,939,829,040		
6	Net Lost Income	\$5,922,170,960		
7	Lost Income Tax at Various Marginal Income Tax Rates			
8	16% Marginal Rate	\$947,547,354		
9	20% Marginal Rate	\$1,184,434,192		
10	28% Marginal Rate	\$1,658,207,869		
11	Value of Federal Construction	\$11,528,571,429		
12	Hypothetical Savings in Construction			
13	1%	\$115,285,714		
14	3%	\$345,857,143		
15	5%	\$576,428,571		
16	7%	\$807,000,000		
17	9%	\$1,037,571,429		
18	11%	\$1,268,142,857		
19	Net Gain (Loss) in Budget	16% Marginal Rate	20% Marginal Rate	28% Marginal Rate
20	1%	(\$832,261,639)	(\$1,069,148,478)	(\$1,542,922,154)
21	3%	(\$601,690,211)	(\$838,577,049)	(\$1,312,350,726)
22	5%	(\$371,118,782)	(\$608,005,621)	(\$1,081,779,297)
23	7%	(\$140,547,354)	(\$377,434,192)	(\$851,207,869)
24	9%	\$90,024,075	(\$146,862,763)	(\$620,636,440)
25	11%	\$320,595,504	\$83,708,665	(\$390,065,012)

With an employment level of 6 million construction workers and an average annual earning of \$27,000, the lost income from lower wages exceeds the gained income from increased employment. This results in differing values of lost income tax revenues depending on the assumed marginal tax rate. With a value for federal construction of \$11.5 billion, the hypothetical savings on construction from a repeal depends on the assumed cost-savings rate. At a marginal income tax rate of 16 percent, net budgetary savings from a repeal occur only with construction cost savings rates above 5 percent. At a 20 percent marginal tax rate, net budgetary savings from a repeal occur only with construction cost savings rates above 9 percent. At a 28 percent marginal tax rate, net budgetary savings from a repeal never occur within the range of cost savings between 1 and 11 percent. In short, a repeal of the Davis-Bacon Act will hurt the federal budget deficit.

There are approximately 6 million construction workers in the United States.⁶¹ Table 2.7, row 2 shows what would have been the loss in income that these construction workers would have experienced given the 1994 value (-\$1,477) of our regression estimate of the effect of state repeals on construction income. Row 3 presents an estimate of increased national construction employment associated with lower wages. Row 4 presents average annual income for construction workers in 1994. Row 5 multiplies gained employment in row 3 times average income in row 4 to obtain the increase in total construction workers' income associated with a hypothetical repeal of the Davis-Bacon Act. Row 6 subtracts gained workers' income from new employment from lost income as a result of lower wages to yield net lost worker income resulting from a hypothetical repeal. Rows 8 through 10 present lost income tax revenues due to net lost income at three marginal tax rates of 16, 20 and 28 percent. In fiscal year 1990-91, the federal government spent \$10.491 billion on construction.⁶² Row 11 presents this sum in 1994 dollars. Rows 13 through 18 present levels of hypothetical savings in construction costs associated with a repeal of Davis-Bacon. Recall that the Congressional Budget Office estimates total the savings to be 1.7 percent, but others have presented savings estimates between 0.5 percent and 11 percent. Rows 20 through 25 present the net effect on the federal budget of hypothetical construction cost savings at various projected rates minus tax revenue losses at various marginal tax rates. Rows 20 through 25 show that only at very low marginal tax rates and very high construction cost savings rates does the federal budget benefit from a repeal of Davis-Bacon. At a marginal tax rate of 20 percent and a construction cost savings rate of 3 percent, the federal budget loses \$838 million annually in 1994 dollars based on the 1991 level of federal government expenditures on construction.

Summary

In Utah, the repeal of the state prevailing wage law led to an overheated bidding process which added uncertainty to the cost of state construction. In the decade before the repeal, cost overruns on state-financed road construction averaged 2 percent of accepted bids. In the decade after the repeal, average road construction cost overruns rose to 7 percent of the accepted bid. A closer inspection of the data showed that, after repeal, contractors tended to present bids at a lower percentage of the state engineer's estimate of project costs but that, after change orders, the projects ended up costing the state a higher percentage of the state engineer's project cost estimate than in the decade prior to repeal. After the Utah repeal, contractors shaved their bids to get state jobs and more than made up for low-ball bids with subsequent change orders. This caused the increased cost overruns.

An econometric analysis controlling for variations in regional differences in construction earnings, variations in unemployment rates, and general trends in real earnings showed that the nine state repeals' effects on earnings was a loss of \$1,477 in 1994 dollars. Econometric modeling also showed that construction employment rose in repeal states after repeal by about 1.7 percent. This employment increase appeared controlling for variations in unemployment and long-term trends in construction employment growth.

Thus, in assessing the budget effect of repeals of prevailing wage laws, we are able to do two things. First, balancing the overall loss of construction worker income resulting from lower average earnings against the overall gain in construction worker income resulting from higher construction employment, we are able to estimate the change in overall construction worker income and consequently the change in government tax revenues resulting from these repeals. Second, taking a very wide range of hypothetical construction cost savings, we are able to estimate the net gain or

loss to government budgets associated with repeals.

In Utah, given its structure of income and sales taxes, the state budget would benefit from its repeal of the prevailing wage law if construction cost savings were at or above 3 percent. At the Congressional Budget Office estimate of a 1.7 percent construction cost savings (including paperwork costs), the state of Utah's budget has annually lost money as a result of the repeal every year since the repeal. Whether the state budget has gained or lost from its repeal is an open question. It is certain that Utah construction workers have lost income, not only on public works employment but across the construction labor market.

At the federal level, construction cost savings must be substantially higher to generate any budget benefit from a repeal of the Davis-Bacon Act because of the federal income tax structure. At the more conservative estimate of 3 percent construction cost savings with a 20 percent marginal tax rate and the 1991 level of federal construction spending (in 1994 dollars), the federal government would lose \$838 million per year by repealing the Davis-Bacon Act.

The justification often given for repealing the Davis-Bacon Act is that a repeal would help cut the federal deficit. That is incorrect. A repeal of Davis-Bacon would help raise the federal budget deficit. This is because the purpose and effect of a repeal is to lower the cost of wages on federally funded construction projects. But lower wages and earnings will not be isolated to federally financed public works. Earnings would decline across the entire construction labor market and the government would lose more in income tax revenues than it will gain in construction cost savings.

III. The Effect of State Repeals of Prevailing Wage Laws on Training and Minority Participation in Training

This chapter presents a case study of the effects of the repeal in 1981 of Utah's prevailing wage law on unionization, construction earnings, and training. The Utah repeal accelerated the decline in the union share of the state's construction labor market, drove down average construction wages in the state, and decreased union apprenticeship training for construction. No public or private source has offset the decline in training. In response to the decline in union membership and training, contractors have reduced turnover in order to retain skilled workers and to minimize screening and training costs. In response not only to the decline in construction wages but also to the coincident decline in health and pension benefits, however, experienced construction workers are leaving their trades for careers in other industries. Thus, while construction firm turnover is on the decline, turnover in the industry is on the rise.⁶³

This chapter examines also whether the Utah experience in training can be generalized to the eight other states that have repealed their prevailing wage laws in construction. The U.S. Department of Labor Bureau of Apprenticeship Training keeps state-by-state records on registered union and non-union apprenticeship programs in construction. These records suggest that what happened in Utah is typical of what has happened in other states after repeal of their prevailing wage laws. The ratio of apprentices to journeymen in construction is higher in states that retain their prevailing wage laws compared with states that never had such a law. The rate of apprenticeship training in states that repealed their prevailing wage laws was substantially higher before the repeal compared with after the repeal. This remains true even when one controls for regional differences in training rates, the effect of unemployment, and long-term trends in training.

There are not many minority workers in Utah in construction, but nationally there are. ("Minority" here refers to nonwhites, male and female.) Some have argued that prevailing wage law repeals will open job opportunities for unskilled minority workers and lower the unemployment rate of minorities, relative to whites. However, there is no evidence to support this claim. Black-white unemployment ratios *rose* in repeal states after repeals. Black-white unemployment ratios tend to be slightly higher in states that have never had prevailing wage laws compared to states that have retained their laws. While repealing prevailing wage laws probably has not caused black-white unemployment ratios to go up, there is no evidence to suggest that a repeal of the Davis-Bacon Act would cause black-white unemployment ratios to decline.

The repeal of prevailing wage laws has especially hurt the training of minorities. There are proportionately more minorities trained as construction apprentices in states that retain their prevailing wage laws compared with states that have never had such laws. In repeal states, the proportion of minorities trained in construction apprenticeship programs declines substantially after the repeals. This remains true after controlling for regional differences in relative training rates, unemployment, and long-term trends in minority training which are independent of state repeals of prevailing wage laws.

The decline in minority participation in construction apprenticeships after repeal is tied to a decline in unionization. Union apprenticeship programs tend to be large. Apprenticeship coordinators move apprentices from contractor to contractor in order to broaden the experiences of the apprentice. Typically, because non-union apprenticeship programs tie the apprentice to one contractor, the non-union programs tend to be small, single-firm programs, as opposed to larger,

joint programs. At the same time, affirmative action regulation of apprenticeship programs applies only to programs having five or more apprentices. With the repeal of prevailing wage laws, not only does formal apprenticeship training decline, but also remaining apprentices are found more often in smaller apprenticeship programs. Thus, one effect of state repeals of prevailing wage laws has been to move more apprenticeship training out from under the oversight of affirmative action regulation. The result has been a substantial decline in minority participation in the remaining apprenticeship training.

The Effect of Repeal on Construction Unions and Wages

When Utah repealed its prevailing wage law in construction, wages became a focus of competition between contractors bidding on state jobs. Many union contractors went non-union or double-breasted (with union and non-union subsidiaries) to match or beat the lower wages of non-union contractors, and other union contractors lost market share.

Because construction employment was falling, many union members went non-union with their traditional employers to stay employed. The vice president of a large industrial and commercial general contracting firm in Utah noted that, after the repeal,

There were a lot of union workers that carried their card in their shoe. They worked open shop until a union job came available. A lot of folks all of a sudden started to find homes over there [in the open shop] and never came back (personal interview, May 15, 1993).

Consequently, in the short-run, at least, contractors that remained union did not have a significant labor productivity advantage over many of the newly non-union contractors. This effectively forced remaining union contractors out of much of the construction market.

With the decline of union contractors, Utah construction union membership fell (fig. 3.1).⁶⁴ The decline in membership was accelerated by the 1982 recession. Union membership appeared to recover from the recession, but many dues-paying members were working open shop. With the onset of the next downturn in Utah construction in 1986, union membership began to fall steadily. These data are consistent with the story that union members working in the open shop eventually found a home there and quit paying their union dues.

With the repeal of the prevailing wage law and the resulting decline in unionization in Utah, average wages in construction fell relative to the average Utah wage (fig. 3.2). Construction wages, which had ranged from 120 to 125 percent of the average Utah wage before the construction boom of the 1970s, exceeded 130 percent during the boom. When construction employment growth stopped in the late 1970s, construction wages fell back toward the high end of their normal premium over average Utah wages. But with the repeal of the prevailing wage law, construction wages fell to a new lower range of 110 to 115 percent of the average wage in Utah. This is an across-the-board decline in construction wages and not isolated to union earnings nor the earnings of construction labor on public works. This relative decline in construction earnings in Utah is consistent with the overall decline in construction wages following repeal (chapter II).

The data for Utah actually underestimate the effect of Utah's repeal on construction workers' earnings, in part because the data do not include the change in value of benefits.

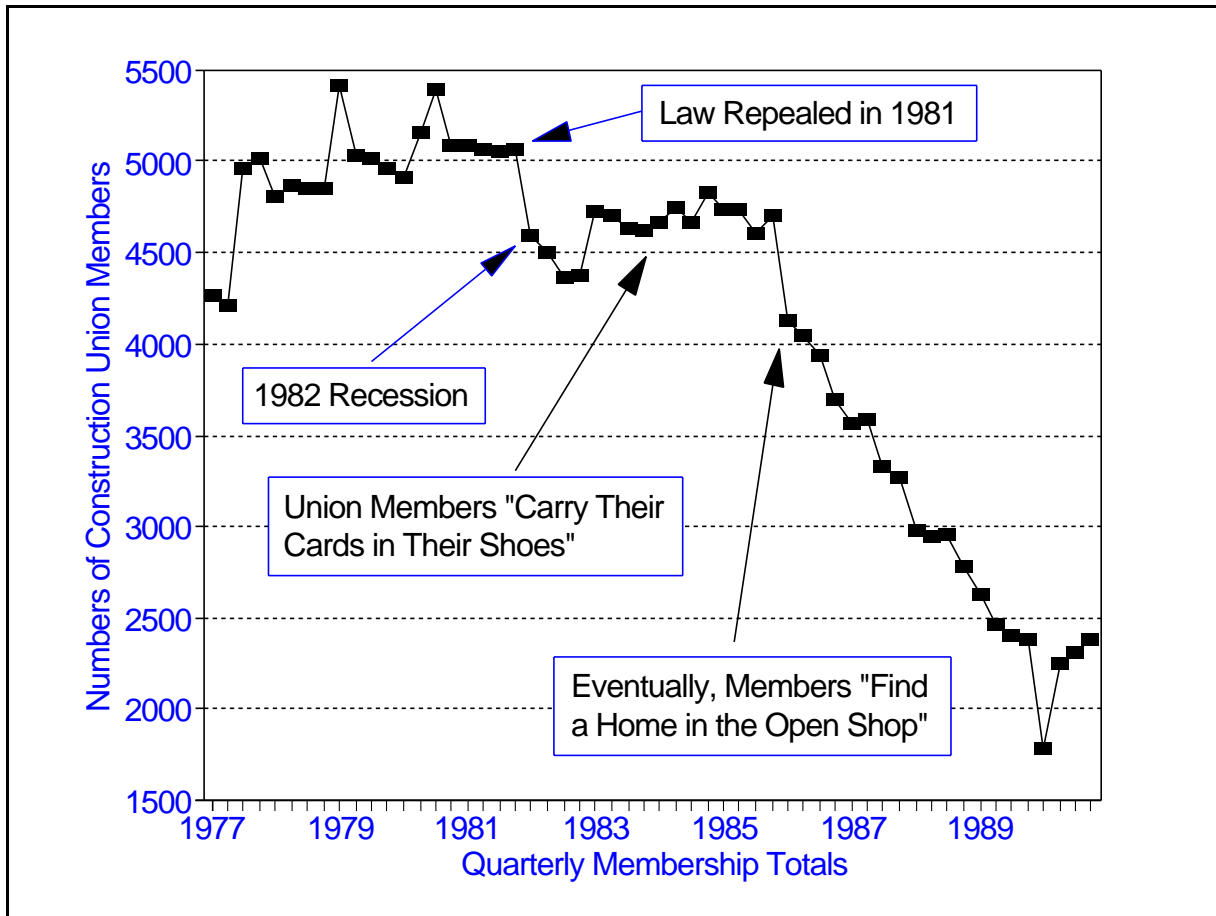


Figure 3.1 Union membership in construction in Utah, 1977-89
 Source: Utah State Building and Construction Trades dues records.

Union membership began to decline with the prevailing wage law repeal and the onset of the 1982 recession. Membership recovered somewhat in 1983 but not as fast as overall construction employment. With the 1985 downturn in Utah construction employment, union membership began a steady decline to less than half its late-1970s peak.

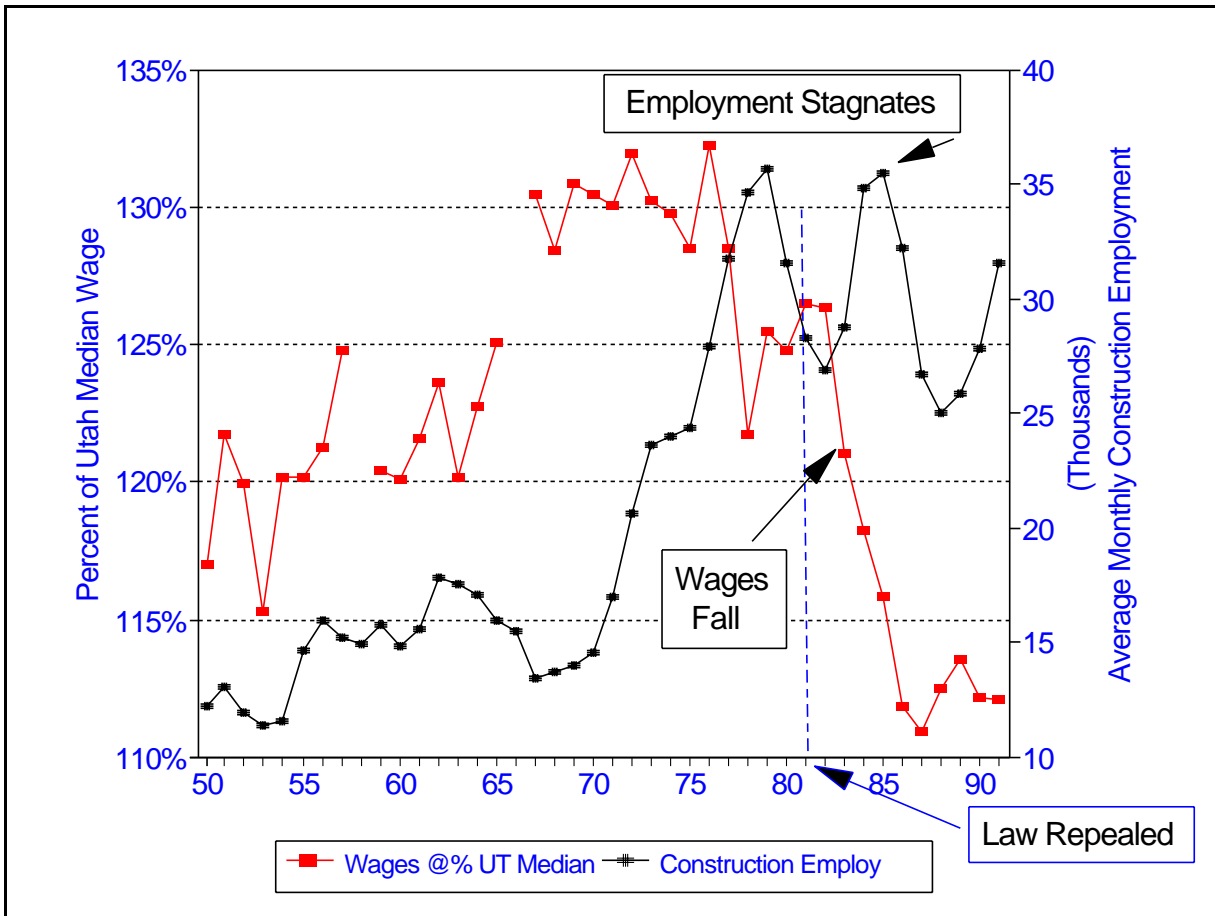


Figure 3.2 Construction wages as a percentage of the Utah median wage and Utah construction employment

Source: Utah Job Security, Division of Labor Market Information, Annual Report, table 5.

Construction employment (measured in thousands on the right-hand Y-axis) in Utah grew rapidly in the 1970s, but growth stopped in the 1980s and cyclical fluctuations became more pronounced. Wages (measured as a percentage of the median Utah wage) ranged between 120 and 125% of the Utah median wage prior to the construction boom of the 1970s. These construction earnings rose above 130% of Utah’s median wage income during the boom. As the boom ended, construction wages moved down to their normal range. With the repeal of Utah’s prevailing wage law in 1981, wages plummeted.

Typically, unionized construction workers receive better health and pension benefits than do non-unionized workers. Lower benefits, particularly health and pension benefits, contribute to the increase in overall labor turnover in and out of the construction industry in Utah. This increased occupational turnover, we will see, led to a younger, less trained, and less experienced labor force.

The Relation between Repeals and Black Unemployment

It has been argued that the Davis-Bacon Act was passed, in part, to restrict southern blacks from northern construction job opportunities. It is further claimed that the current high and rising ratio of black unemployment rates relative to white unemployment rates is partly due to restrictions that prevailing wage laws impose on the ability of unskilled black labor to compete with better skilled white labor. From these beliefs, it is argued that a repeal of the Davis-Bacon Act would lower black unemployment relative to white unemployment by opening up jobs for less-skilled black labor.⁶⁵

These arguments are not directly supported by the available evidence. Black unemployment rates are separately collected for only five of the nine states that have repealed their state prevailing wage laws. Arizona, Idaho, New Hampshire, and Utah do not have large-enough black populations to generate meaningful unemployment statistics. However, Alabama, Colorado, Florida, Kansas, and Louisiana do have sufficient black populations to test the above argument. The ratio of black-to-white unemployment for five repeal states can be shown using state unemployment rates for white and blacks and white males and black males (fig. 3.3). In all cases, black unemployment rates are more than twice the rate of white unemployment. Before the repeal of state prevailing wage laws, however, the male black-to-white unemployment ratio and the overall black-to-white unemployment ratio were both less than their corresponding ratios after these states repealed their prevailing wage laws.

This does not mean that the repeals caused the black-to-white unemployment ratios to rise. Black-to-white unemployment ratios were rising across the country in the 1980s in repeal states and elsewhere. The rise in the black-to-white unemployment ratios simply reflects this time trend.⁶⁶

By comparing the states that retain their prevailing wage laws with those states that never had prevailing wage laws, we can eliminate the effect of time trends in black-to-white unemployment ratios. The black-to-white unemployment ratio and the male black-to-white unemployment ratio are both lower for states with prevailing wage laws compared to states without prevailing wage laws — averaging unemployment rates across states and years from 1974 to 1992 (fig.3.4).⁶⁷ The male unemployment ratios in figure 3.4 are almost the same and statistically they are not different.

In terms of employment, rather than unemployment, in 1990 14 percent of all persons employed in construction were minorities (here defined as nonwhites plus hispanics). In the 32 states which had prevailing wage laws, 14 percent of all construction workers were minority workers, and in the 9 states that had never had prevailing wage laws plus the 9 states which had repealed their laws, 14 percent of all construction workers were minority workers. In all states, minorities were under-represented in construction. The average minority population in states which had prevailing wage laws was 20 percent and the average minority population in states without prevailing wage laws in 1990 was 19 percent.⁶⁸ Thus, minorities were under-represented in both state groupings. However, there is little here to suggest that repealing prevailing wage laws would ameliorate this under-representation. The construction employment prospects of minorities are quite similar in both states

with and without prevailing wage laws regulating public construction.

These data do not support the proposition that a repeal of the Davis-Bacon Act would ameliorate in any significant way the relative unemployment of blacks to whites.

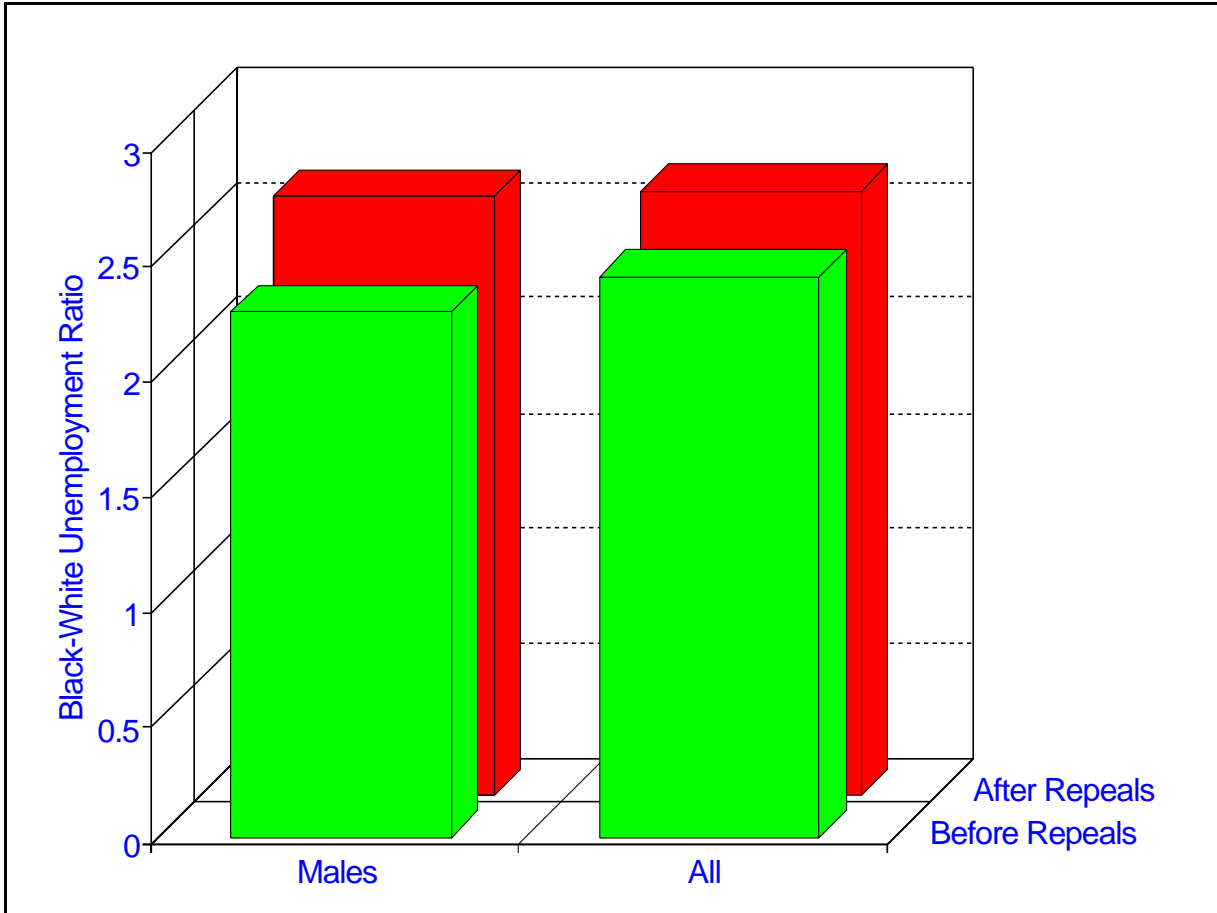


Figure 3.3 The ratio of black-white unemployment in five repeal states before and after repeals
 Source: US DOL *Geographical Profile of Employment and Unemployment 1974-92*.

Five repeal states – Alabama, Colorado, Florida, Kansas, and Louisiana – have sufficient black populations to report a separate black unemployment rate and a black male unemployment rate. In these five states, in the decade prior to repeals, the ratio of black to white unemployment rates was 2.43. After repeals, the ratio rose to 2.61 which means black unemployment was even higher in relation to white unemployment. For males, the black-to-white unemployment ratio was 2.28 before repeals and 2.60 after repeals. These ratios are based on unemployment rates for the entire state not simply construction. If repeals opened job opportunities for blacks, the effect is hidden. Black-white unemployment ratios rose throughout the 1980s and the rise is not due directly to the repeals.

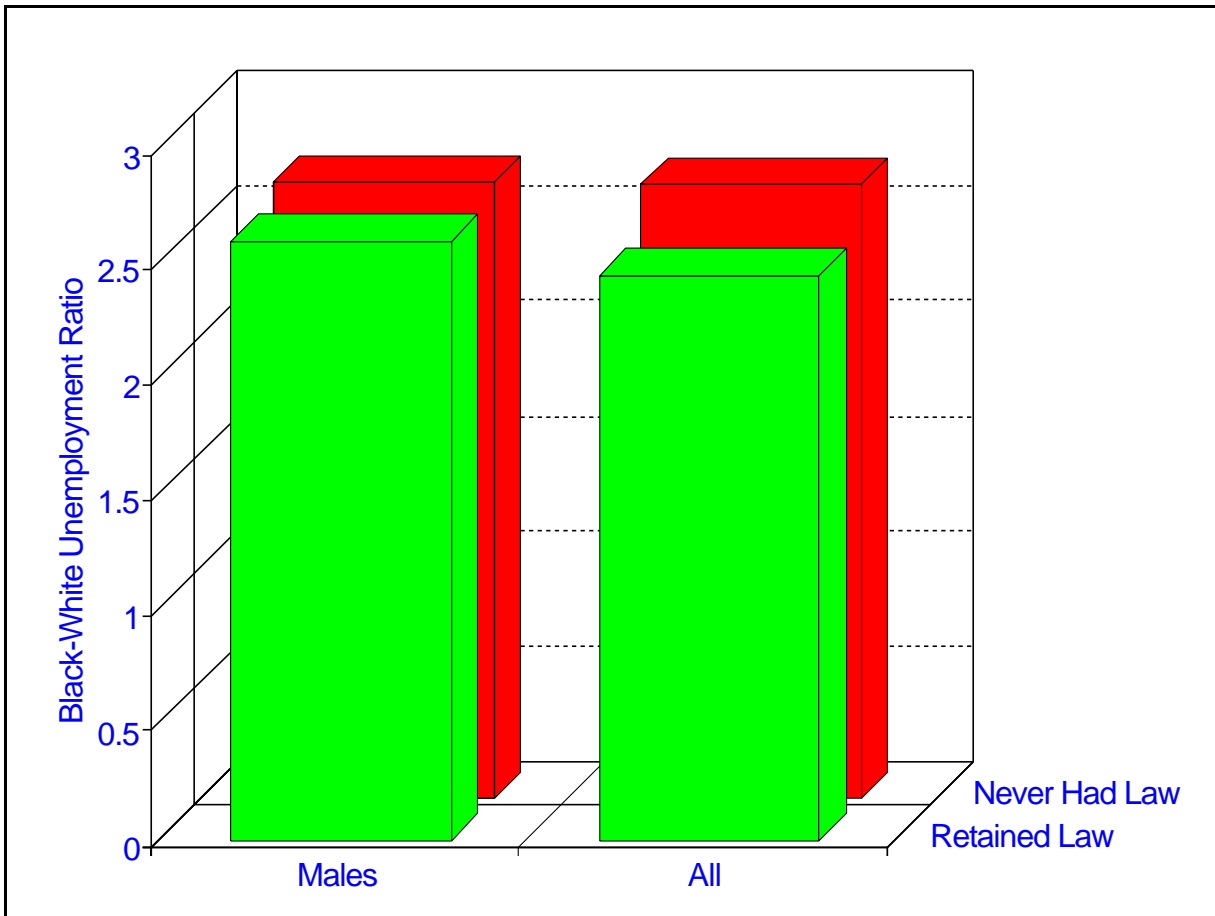


Figure 3.4 Black-white unemployment ratio for states that retained and never had state wage law

Source: US DOL *Geographical Profile of Employment and Unemployment 1974-92*.

Comparing the black-to-white unemployment ratio in states that retained their state prevailing wage laws throughout the last 25 years with the ratio in those states that never had state prevailing wage laws eliminates the effect of a strong time trend that shows up in before-and-after analysis. The male black-to-white unemployment ratio is slightly higher in the states that never had prevailing wage laws compared with states that retained theirs. The difference is not statistically significant. The overall black-to-white unemployment ratio is significantly greater in the states that never had a prevailing wage law, but this is because of female unemployment differentials, which are unlikely to be significantly affected by construction employment patterns.

A Decline in Training

With the decline in union membership and in relative wages, training for construction in union apprenticeships and through vocational schools, declined in Utah. Union apprenticeships are tied to the availability of union jobs. For instance, unionized plumbers and pipe fitters in Utah, the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, historically have attempted to maintain apprenticeship rates at 10 to 15 percent of the number of union journeymen plumbers in the state (fig. 3.5). As employment boomed in the 1970s, however, the union could not meet the demand for journeymen from union contractors. Consequently, the union increased apprenticeship rates to a peak of 25 percent in 1975. The boom persisted, but the backlog had been remedied. So the union lowered its apprenticeship rate back to normal ranges by 1978. Employment during the construction boom peaked in 1979 and membership in the plumbers and pipefitters' union peaked in 1981.

With the repeal of the Utah prevailing wage law, the union dropped its apprenticeship rate to 10 percent, a historical low. Union membership fell slightly in 1982 and began a steeper decline in 1983. Faced with these sustained declines in membership, the union cut its apprenticeship rate even lower in 1986 and thereafter. Unions hit harder by declines in membership have scaled back their apprenticeship programs further. The carpenters' union, Utah locals 184 and 1498 of the United Brotherhood of Carpenters and Joiners of America, which graduated seventy in a class in 1977, graduated five in 1992. The Utah International Union of Bricklayers and Allied Craftsmen suspended its apprenticeship program altogether.

The decline in union apprenticeship training in Utah has not been offset by a rise in other sources of training. Because the repeal of Utah's prevailing wage law was motivated by a desire to limit state expenditures, state legislators were not eager to raise funding for state-sponsored vocational training.

Although the number of vocational graduates in construction grew in the 1970s, the construction labor force grew more rapidly. Thus, while the 1970s was the heyday of vocational training at Salt Lake Community College, vocational graduates as a percentage of the construction labor force had already begun to decline.⁶⁹

The steady decline in state-supported vocational training as a percentage of the construction labor force through good times and bad supports the notion that the state has simply tried to get out of the business of vocational training in construction. The fall in union membership and wages has made construction a less attractive career. At the same time, unions are less able to train construction workers. As unions are weakened and community colleges drift toward academic offerings, the capacity to respond smoothly to an upsurge in construction jobs is undercut. And federally sponsored Job Corps vocational training is not in a position to fill in the gap.

Federal revenues pay for Job Corps training in Utah at the Weber Basin and Clearfield centers. Federal funding in real terms for these centers has not expanded, but the Weber Basin Job Corps Center, which draws predominantly from the Utah population, has significantly cut its construction worker training throughout the 1980s. This center committed itself to changing from an all-male student population in 1980 to 50 percent female by 1990. To accommodate this switch, training for traditionally male occupations such as construction, have been scaled back

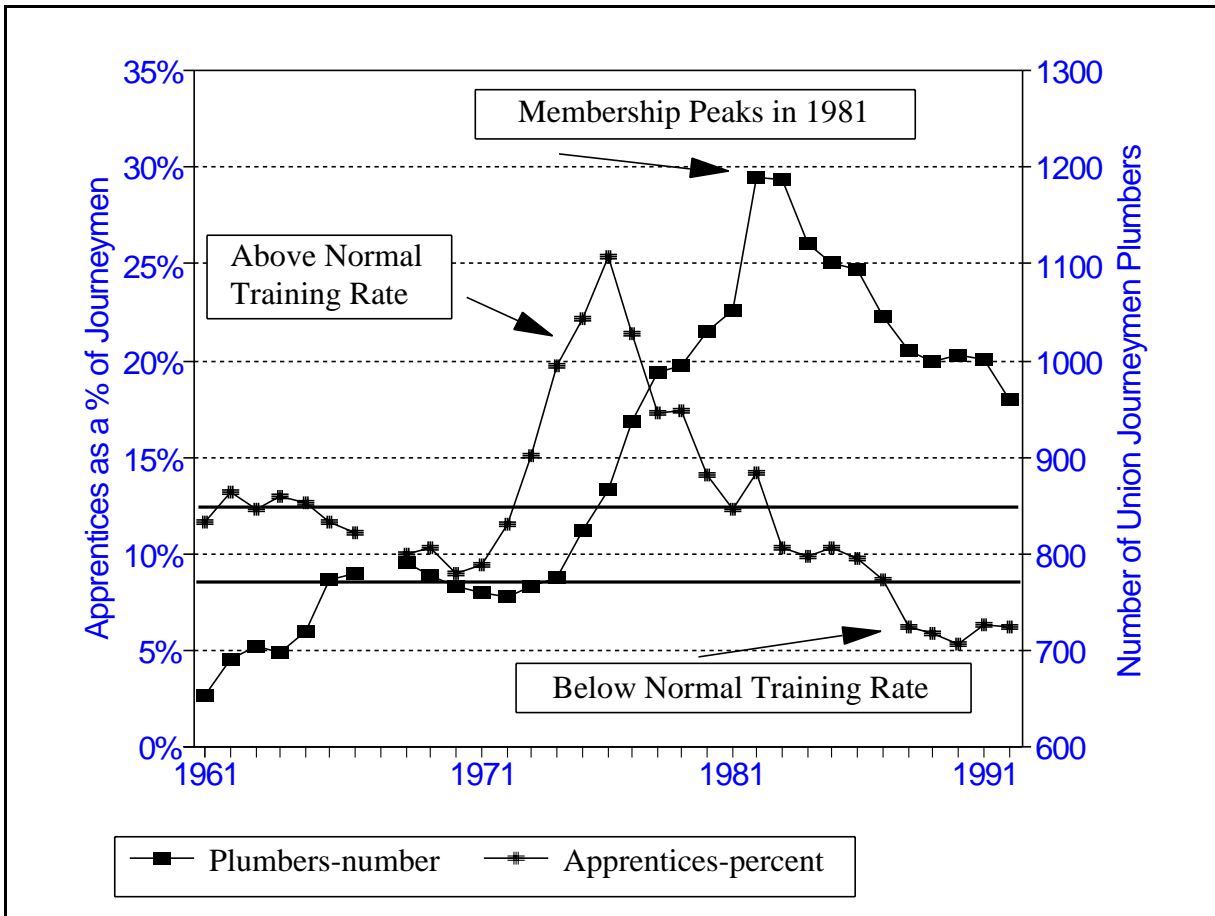


Figure 3.5 Apprentice plumbers as a percentage of journeymen plumbers in Utah, 1961 to 1991
 Source: Utah plumbers and pipe fitters locals' membership records.

The plumbers' union in Utah has historically attempted to train apprentices at a rate of 10 to 15 percent of their journeymen members. As employment boomed in the 1970s, the union could not meet journeyman demand and consequently expanded apprenticeship training rapidly. As the numbers of journeymen grew to meet demand, apprenticeship training was reduced to normal rates. But with the repeal of the state prevailing wage law in 1981, union membership declined and apprenticeship training rates were cut to all-time lows.

to accommodate new offerings in traditionally female occupations, such as office management and clerical work. Cement masonry and heavy-equipment training have been eliminated, and instruction in carpentry, painting, and brick laying has been cut in half.

The Clearfield Center has graduated approximately 100 construction trainees per year since the early 1970s. Fewer Clearfield graduates go into the Utah labor market, compared with Weber Basin graduates, because most of Clearfield's students are from out of state. Perhaps 10 percent of Clearfield's graduates go into the Utah labor market, but this percentage rises during periods of local labor shortage. It is estimated, however, that at most only 25 percent of Clearfield's graduates will stay in Utah.

Even without union pressure, it is possible that a shortage of skilled construction workers in Utah will raise wages and induce a new generation of young people to enter construction vocational training for the industry. Nonetheless Utah is now in a building boom – when wages would normally rise – and annual earnings in construction relative to annual earnings for all Utahns continue to fall. In 1993, the most recent year for which data are available, the construction earnings premium fell to a historic new low of 103 percent of the average annual earnings for all non-agricultural workers in Utah.⁷⁰

Utah is now in a building boom, one that has come quickly. High-quality training programs, which take time to create, are not in place to meet the demand. This adds an additional lag to the usual time it takes to train a skilled laborer. Utah's current boom has relied partly on using a less-skilled labor force (which partly accounts for the lower construction earnings premium) and partly on travelers from California, which is currently in a construction lull. Whether the Utah construction industry can rely, in the long run, on training systems for construction workers in California remains to be seen. A pick-up in California construction would quickly bleed away the skilled workers Utah is now attracting. This is one difference between state repeals of prevailing wage laws and a federal repeal of the Davis-Bacon Act. If construction cycles are not synchronized, it is at least possible, if a state is lucky, for one state to freely ride on the training systems of another state. A repeal of Davis-Bacon would create a nationwide decline in training. Under such a circumstance free riding on the training of another area would not be an option.

Market Responses: Training, Turnover, and Careers

The market in Utah has not successfully made up for the decline in union and state-sponsored training. At the national level, the non-union Associated Builders and Contractors (ABC) has attempted to replicate the union system of bargaining for hourly contributions to a training fund. It is difficult, however, to induce ABC's member contractors to include general training costs in their bids. Each contractor fears that his competitors will not include training costs. Thus, in an attempt to be the low-cost bidder, ABC contractors often refrain from including training costs despite the ABC initiative. Consequently, very little ABC training has occurred in Utah.

In Utah, non-union apprenticeship programs operate, however, in the licensed trades of electricians and plumbers. In 1992, there were 846 non-union licensed apprentice electricians in Utah and 2,068 non-union journeymen. Thus, there are 4 apprentices for every 10 journeymen in the non-union sector. In contrast, there were 123 apprentices and 607 journeymen in the union sector in 1992, or 2 apprentices for every 10 journeymen. In the non-union sector, apprentices begin at around \$6 per hour with no benefits. Over a four-year period, the state mandates that the apprentice wage rise

to 80 percent of a journeyman's pay. In the union sector, apprentices begin at \$7 per hour with an additional \$3 in benefits. Their wages rise to \$14 per hour plus \$3 in benefits over five years. Non-union apprentices are sponsored by a particular contractor that oversees on-the-job training, and these apprentices take classwork at a participating community college. Union apprentices work under the direction of an apprenticeship coordinator, rotate among employers for on-the-job training, and take classes at community colleges and union apprenticeship centers. Roughly 90 to 95 percent of the union apprentices complete their programs and graduate to journeymen status, while only 15 to 20 percent of the non-union apprentices graduate. Given these rates, in four years, out of 846 non-union apprentices, we should expect 125 to 170 journeymen to be graduated. In five years in the union sector, out of 123 apprentices, 110 to 115 apprentices would graduate to journeymen electrician. Thus, while the non-union sector accounts for more than 85 percent of all electrician apprentices, it accounts for about 60 percent of journeymen graduates.

Economic theory is consistent with this pattern wherein non-union apprentices are paid less and graduate at a lower rate than union apprentices. Economic theory posits that in the absence of marketwide institutions or government subsidies, individual workers will have to pay for their own on-the-job training when the skills learned are general to an industry and not specific and unique to the activities of a particular firm. The worker-learner pays for training by accepting a wage that is lower than the value to the firm of that worker's marginal product. By working for less than the worker's worth to the employer, the worker pays the employer for on-the-job training. That beginning non-union electrical apprentices earn \$6 per hour while union apprentices earn \$10 per hour (including benefits) is consistent with the theoretical proposition that non-union apprentices pay for their own training by taking a discounted wage below their marginal value to the contractor.

Because the employer does not pay much for non-union training, the theory suggests that the employer has no stake in the worker's training. If the worker leaves, the employer does not lose any investment in the worker's human capital. So, the employer will tolerate high levels of turnover. Because the worker is receiving less than what the worker can earn in other jobs with no on-the-job training, the worker may be tempted to exit jobs with training when current personal budget needs become pressing. So, on both the employer side and the worker side, turnover is tolerated in the non-union sector. This view is consistent with the higher turnover rates among non-union apprentices, but other factors also contribute to the roughly 70 percentage point differential in non-union to union graduation rates.

Because the non-union employer prices new hands at discounted wages that shield the employer from investing in the human capital of new workers, the employer does not screen new workers extensively to forestall subsequent turnover. The employer's failure to preselect new workers for aptitudes and attitudes consistent with a long-term attachment to construction work adds to the turnover among non-union construction apprentices. In contrast, the joint apprenticeship boards of unions and union contractors do considerable preselection for aptitude and attitude before letting a candidate into an apprenticeship program. This is because the union contractors and unions will invest in the union apprentices' training.⁷¹

In the non-union sector, workers may also leave apprenticeships if it becomes apparent that the employer offering training at a discounted wage is not delivering on that training promise to train. Because employers are able to discount wages of apprentices below their current worth to the employer, it is tempting to engage in bait-and-switch tactics whereby training is promised but not delivered. By saving on training costs, the employer can earn an additional profit from employing

green hands at discounted wages. In the union sector, because employers and union journeymen invest in the training of the apprentices, bait-and-switch tactics are less attractive. Because the apprentices' wage is not discounted as much below what they could earn elsewhere, the apprentices are not as tempted to leave. Thus, the non-union sector must begin training five apprentices to graduate one journeyman, while the ratio in the union sector is close to one to one.

While non-union contractors tolerate high levels of turnover among apprentices, with the decline in training and union membership, non-union Utah contractors have sought to reduce the turnover among trained journeymen. There has been a long-term decline in labor turnover in construction (fig. 3.6). This long-term decline can be explained with a pooled, cross-sectional, time-series linear regression model, as can the differences in turnover rates in Utah by contractor type from 1956 to 1991 (table 3.1). Not surprisingly, this model shows that turnover was higher in years in which variations in monthly construction employment were great. It also shows that contractors with larger crews tolerated proportionately more turnover. Contractors employing more-expensive labor sought to reduce turnover. When union membership was a high percentage of the construction labor force, turnover was higher simply because contractors losing one good worker could turn to the hiring hall for a reasonable substitute at little additional cost. When vocational schools were graduating a large number of construction-trained students relative to the Utah construction labor market, contractors tolerated more turnover because the market had proportionately more trained substitutes. The numbers of union membership and vocational graduates have been on the decline, however. Thus, this regression model shows that, over time, contractors have responded by reducing the turnover among journeymen .

Although turnover at the firm level has been on the decline, workers may be entering and leaving construction at higher rates than 20 years ago. In 1970, Utah construction workers, on average, were 42 years old.⁷² By 1990, before the recent construction boom had begun in Utah, the age had fallen to 33 years.⁷³ Much of this decline may be due to the construction expansion in the 1970s, which brought in a new generation of younger workers. But the decline in age may also be a result of both the decline in health and retirement benefits and the decline in relative wages associated with the decline in unions. Although non-union contractors increasingly are providing health and retirement benefits, especially to their key people, the health benefits tend to be more expensive for a given level of care and the retirement 401K plans lack the insurance component associated with union-defined benefit plans.

National Trends in Registered Apprenticeship Training

The U.S. Department of Labor, Bureau of Apprenticeship Training, monitors registered apprenticeship programs – union and non-union – in the construction industry. Data are available for 1975-78 and 1987-90. Not all states have reported to the Bureau of Apprenticeship Training for all years during these periods. Nonetheless, 29 states did report registered construction apprentices for every one of those years. The states included 6 states that eventually repealed

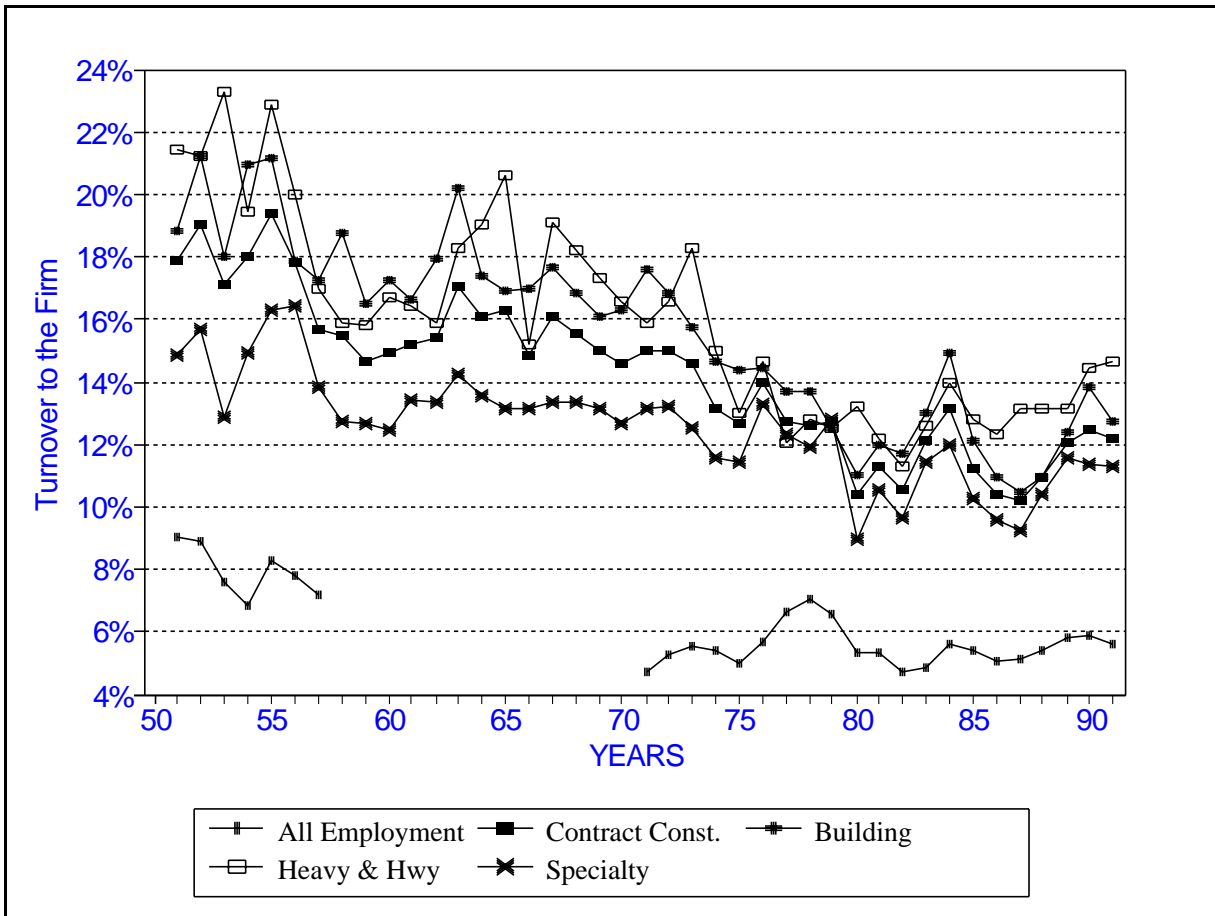


Figure 3.6 Turnover in Utah's construction industry compared with all employment statewide
Source: Utah Job Security, Division of Labor Market Information Annual Report, table 5.

As the number of trained journeymen in Union hiring halls declines and the number of non-union journeymen declines, firms respond by reducing firm turnover. Later, it will be shown that while firm turnover in Utah construction is declining, career turnover is on the rise.

Table 3.1. Linear regression model of turnover rate in construction in Utah.
Source: Utah Job Security, Annual Report, Table 5.

Dependent variable = firm turnover in construction^a

<u>Variable^b</u>	Actual <u>Coefficient</u>	Standardized <u>Coefficient</u>
Union Members ^c	1.76	.24
New Vocational Graduates ^c	2.45	.20
Real Wage	-.076	-.62
Seasonality	2.12	.15
Workers per Contractor	.052	.40
(Constant)	-1.88	

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^a The actual variable is $\ln(\text{turnover}/(1-\text{turnover}))$ to meet the technical requirement in linear regressions of having an unbounded dependent variable.

^b All independent variables are statistically significant at the 1% level.

^c As a percent of the construction labor force.

Adjusted R Square = .24

Number of Cases = 351

Time Period = 1956 to 1991

Contractor Type = 4 digit SIC

Contractors in Utah tolerate higher labor turnover when union membership is a high percentage of the labor force, and when new vocational school graduates are plentiful. Turnover is more common in years when monthly employment fluctuates a lot. Contractors are more willing to tolerate turnover among lower paid workers and contractors with larger work crews must accept higher levels of turnover. Standardized coefficients indicate that worker skill and crew size have the largest impact on variations in employer turnover rates while both the availability of union members and new vocational graduates have larger effects than seasonal fluctuations in employment.

their prevailing wage laws, 4 states that never had prevailing wage laws, and 19 states that retained a state prevailing wage law throughout the period. These 29 states can be divided into the categories "repeal," "never-had," and "retained-law," for comparison (figs. 3.7 and 3.8). No state had repealed its prevailing wage law by 1978. By the end of the first quarter of 1987, all nine repeal states had passed their repeals except Louisiana which repealed in 1988. The data for 1987 are for the summer of 1987, after Kansas had repealed in that year.⁷⁴

In the "before" period, states that had prevailing wage laws – those that retained such a law and those that had not yet repealed theirs – typically trained a higher percentage of registered apprentices than the states that never had a prevailing wage law. For unknown reasons, the year 1976 is an exception to this pattern. During this pre-repeal period, the states that would eventually repeal their laws had as high or higher training rates compared with the states that kept their laws throughout the period. By 1987, training rates had fallen for all states, but they had fallen least in states that had retained their prevailing wage laws. By 1989, the states that had repealed their prevailing wage laws had training rates as low as the states that never had prevailing wage laws. This is clear evidence that repealing state prevailing wage laws lowers formal apprenticeship training.

A simple analysis can help isolate the effect on training of repealing state prevailing wage laws from a general downward trend in construction apprenticeship training. Apprenticeship training rates for states that repeal their prevailing wage laws in the late 1970s and 1980s are presented as a percentage of the training rates of states that retained their prevailing wage laws (table 3.2, col. 2). Throughout the 1970s, before repeals, the repeal states had training rates that were at or above the average training rates for states that had and would keep their prevailing wage laws. After the repeals in the late 1980s, the repeal states had training rates that fell to as little as 63 percent of the training rates of states that kept their prevailing wage laws. By 1990, the repeal states had relative training rates that were as low as the states that never had prevailing wage laws. Thus, while training in construction has been falling for all states, the fall for repeal states has been the most precipitous and – setting time trends aside – the repeal states matched the training rates of the retaining states prior to repeal and fell to the rates of states never having had prevailing wage laws after the repeal.⁷⁵

Unlike the simple analysis just presented, however, a multiple linear regression analysis can control for other factors, such as differences in state unemployment rates or regional differences in training (table 3.3). The dependent variable in the analysis is a transformation of the training rate for each state, where the training rate is calculated as registered apprentices as a percentage of all construction employees in a state and year. For technical reasons associated with the assumptions of linear regression analysis, the actual dependent variable is the natural log of the odds ratio of the training rate where the odds ratio is calculated as (the percent trained) divided by (one minus the percent trained).⁷⁶

In the regression model, regional differences in training rates are controlled for with the regions corresponding to standard Bureau of Labor Statistics regional categorizations. Unemployment differences are controlled for by state and year. The data are for the years 1975-78 and 1987-90. The focus variable is REPEAL, a dummy variable equalling 1 once a state repeals its prevailing wage law. A second focus variable is NEVERHAD which equals zero for all states except for those nine states that never had a state prevailing wage law in construction. For those states, NEVERHAD equals 1. There are 297 observations in the data set. California,

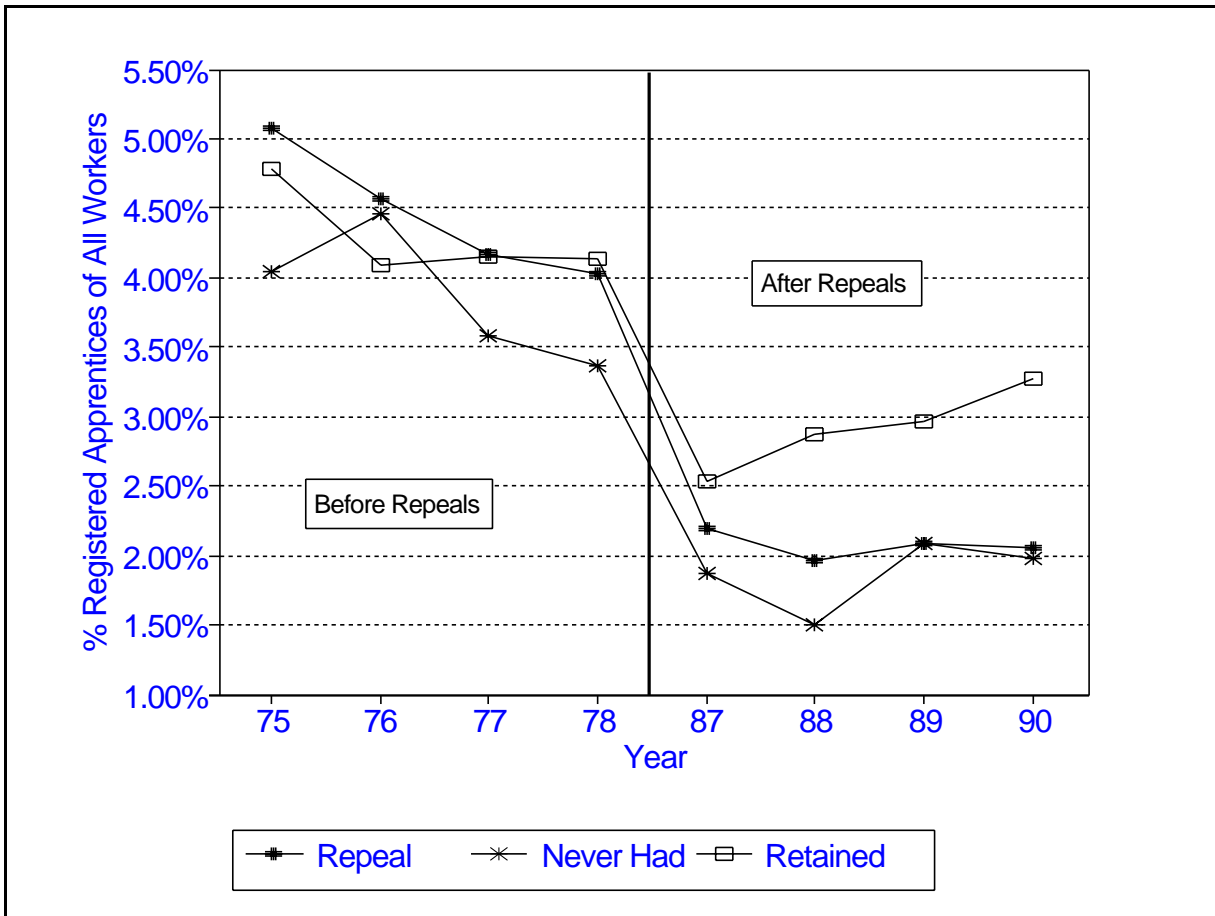


Figure 3.7 Apprenticeship training rates, by state groups, before and after repeals
Source: U.S. Department of Labor, Bureaus of Labor Statistics and Apprenticeship Training.

This figure shows apprentices as a percentage of all construction workers in 29 states grouped by state treatment of prevailing wage law. In the four years before the repeal of state prevailing wage laws, states that would eventually repeal their laws had high apprenticeship training rates. States that would retain their prevailing wage laws also had high training rates. Except in 1976, states that never had prevailing wage laws in construction had relatively low training rates. In all state groupings, training rates in the late 1980s were lower than training rates in the late 1970s. However, after the several state repeals, those states that retained their prevailing wage laws had relatively higher training rates. Those states that repealed their prevailing wage laws eventually had training rates that matched the states that had never had prevailing wage laws.

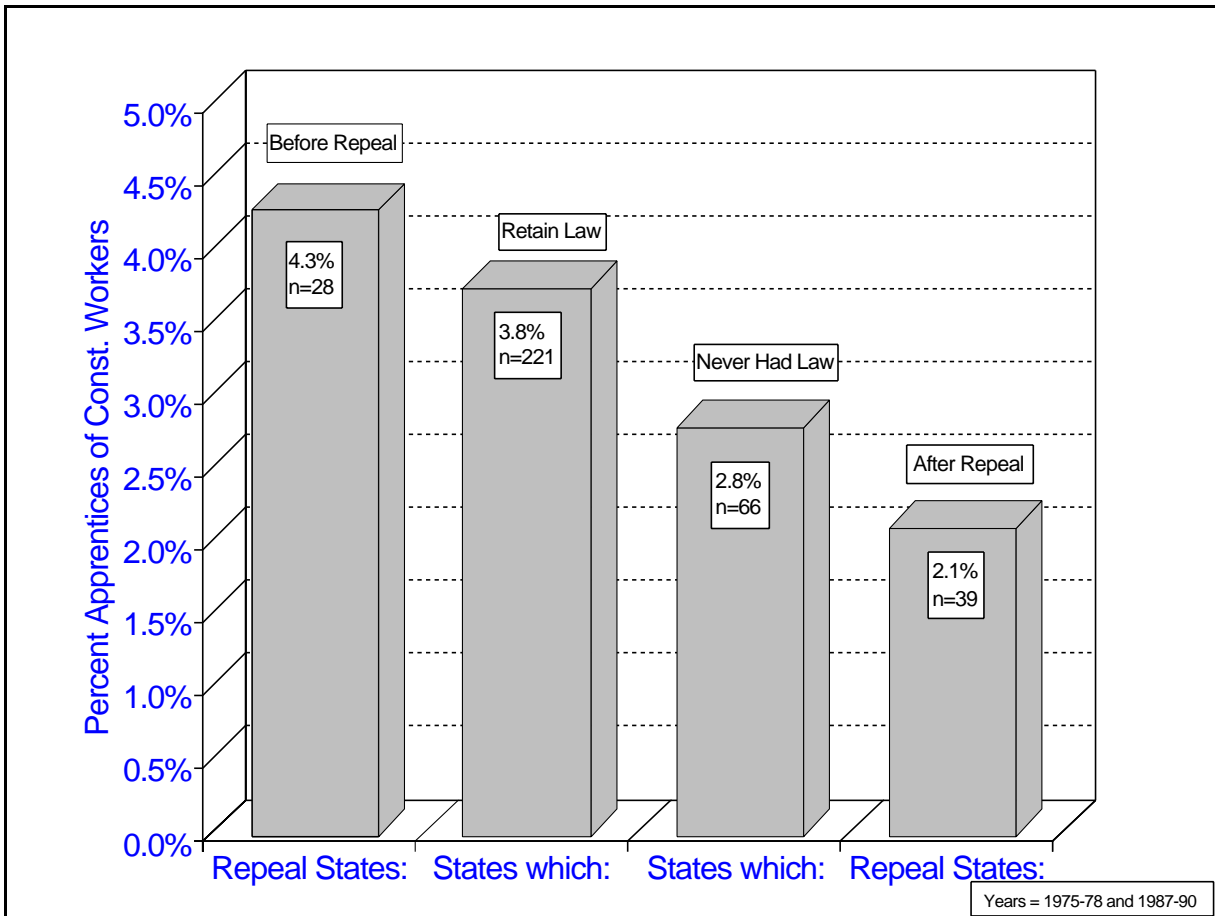


Figure 3.8 Apprenticeship training rates, by state

Source: U.S. Department of Labor Bureau of Labor Statistics and Apprenticeship Training.

States are grouped here into four categories, repeal states before and after their repeals of prevailing wage laws, states that retained their prevailing wage laws, and states that never had prevailing wage laws. This simple pattern shows that repealing or not having prevailing wage laws reduces formal training in construction. (Part of this before-and-after picture is due to an overall downward trend in registered apprenticeship rates in construction overtime.) Repeals hurt apprenticeship training because repeals hurt unions. Non-union construction contractors do less training and less formal, high quality training.

Delaware, the District of Columbia, Hawaii, and Rhode Island are omitted from the analysis because they did not report to the Bureau of Apprenticeship Training of the U.S. Department of Labor during the second period of our analysis. The model is a good fit of the data with an adjusted R^2 of 45 percent, and all variables are statistically significant.

The focus variable in the regression analysis REPEAL – a marker for states that repealed their prevailing wage laws – is negative. This means that – controlling for unemployment, time trends and regional differences in training – when states repeal their prevailing wage laws, the training rate goes down. At the mean training rate for the entire data set of 3.7 percent, this model indicates that repeals drove down training rates to around 2.1 percent. The NEVERHAD variable, marking states that have never had a prevailing wage law, is also negative and statistically significant but smaller than the REPEAL variable. This is because of a close correlation (about 40 percent) between never having had a prevailing wage law and being a southern state. This means the analysis could not fully distinguish between the hypothesis that training rates in the South were low because many of these states never had prevailing wage laws and the hypothesis that other reasons associated with being a southern state caused training rates to be low. The REPEAL effect was easier to pick up compared to the NEVERHAD effect, simply because the repeal states presented information about their training rates before and after each state repealed its prevailing wage law.

Thus, looking at training rates from a variety of measures and methods of analysis, it is clear that state repeals of prevailing wage laws have significantly lowered formal, organized, and quality training of construction workers. The effect is to lower training rates by about 40 percent.

When apprenticeship training falls as a result of repeals of state prevailing wage laws, minority participation in apprenticeship programs falls even farther (fig. 3.9). Minorities comprise almost 20 percent of all construction apprentices in the repeal states in the years before repeal of state prevailing wage laws. In the same states, after repeal of their prevailing wage laws, minority participation in apprenticeship programs falls to just under 13 percent of all apprentices. While construction apprenticeship training is falling in these states by around 40 percent, the share of minorities in this downsized training also falls by about 36 percent. One reason for the decline in minority training is the decline in union training.

In figure 3.9, the share of minorities in apprenticeship training appears the same for states that retain their prevailing wage laws and states that never had such laws, but this is an illusion. Many of the states that have never adopted prevailing wage laws are in the South where there is a high percentage of minorities in the overall state population (fig. 3.10). We account for that factor with the ratio of the minority percentage in construction apprenticeship programs, divided by the minority percentage in the state population. This ratio is 100 percent if the two percentages are equal. We call this the "minority reflection percentage" because it measures whether minorities in apprenticeships reflect minorities in the state population.

In the repeal states before repeal, the minority reflection percentage was 107 percent, which means that the construction apprenticeship programs slightly over-represented minorities. After repeal, minority representation in apprenticeships fell to 85 percent of minority representation in the state population. In the states that retained their prevailing wage laws throughout the period under review, minority representation in apprenticeships just about mirrored minority representation in the state population (a ratio of 102 percent). But, in states that never

Table 3.2 Training rates in repeal and never-had states as a percentage of training rates in states which retained their wage laws

	Repeal States	States Never Having Had Law
(1)	(2)	(3)
1975	106%	85%
1976	112%	109%
1977	100%	86%
1978	97%	81%
1987	87%	74%
1988	68%	52%
1989	70%	70%
1990	63%	60%

Except in 1976, the states that never had prevailing wage laws have training rates which fall from 86 percent of the training rates of states which retain their prevailing wage laws to 60 percent of the training rates of states which retain their law. Repeal states mirror the training rates of retaining states prior to their repeals. After the several repeals of state prevailing wage laws --from 1979 to 1988-- the average training rate in repeal states falls to 63 percent of the training rates in states retaining their law. This is a simple way of viewing the roughly 40 percent drop in registered construction apprenticeship training caused by state repeals of their prevailing wage laws.

Table 3.3 Training rates in repeal and never-had states as a percentage of training rates in states that retained their wage laws, 1975-78 and 1987-90
Source: US DOL, BLS and BAT.

Dependent Variable= Log of the Odds Ratio of the Percent Apprentices

<u>Independent Variables</u>	<u>Effect on Percent Trained</u>
Region 1	-1.11
Region 2	-0.99
Region 3	-0.77
Region 4	-0.81
Region 5	-1.18
Region 6	-1.10
Region 7	-0.53
Region 8	-0.55
Time trend	-0.02
State unemployment rate	0.04
Marker for states never having had law (NEVERHAD)	-0.13
Marker for states once they repealed their law (REPEAL)	-0.44
Constant	-0.78
-----Adjusted R square =.45	
Number of Cases	=297
Years	=1975-78 and 1987-90

All variables are statistically significant at the 1% level except the marker for states never having had a prevailing wage law. That variable is significant at the 10% level.

Region 1: CT MA NH RI VT ME Region 2: NY NJ DC PA DE MD
Region 3: WI IL IN OH MI Region 4: ND SD MO MN KS IA NE
Region 5: WV VA NC SC GA FL Region 6: TX OK NM AZ
AS MS LA AR TN KY

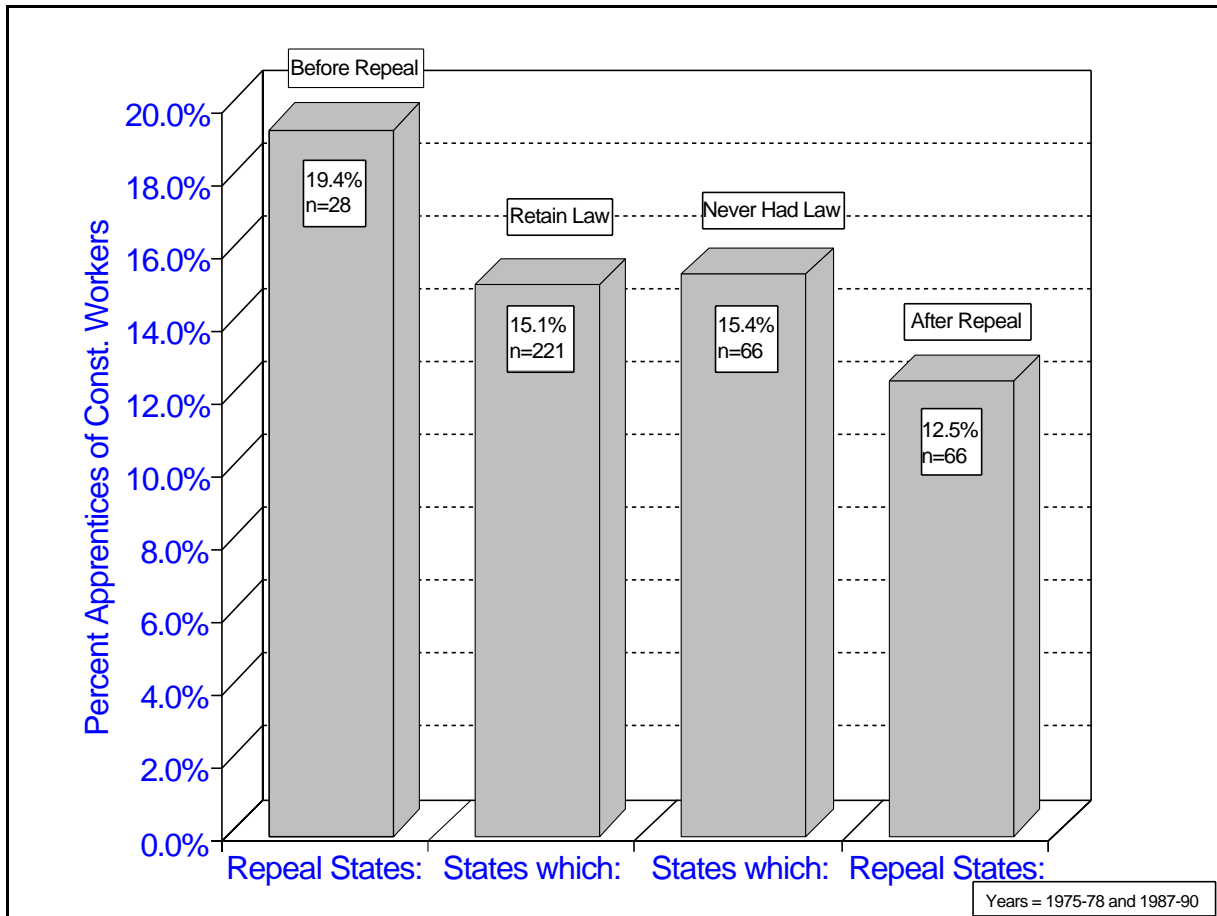


Figure 3.9 Minorities as a percentage of all construction apprentices by state groups
 Source: U.S. Department of Labor Bureaus of Labor Statistics and Apprenticeship Training.

In repeal states, before repeal of their prevailing wage laws in construction, minority participation in registered apprenticeship programs averaged 19.4 percent of all apprentices. After the repeals, minority participation fell to 12.5 percent of all apprentices. The n=28 and n=66 refer to the number of state-year observations in each group. States that kept their prevailing wage laws and states that never had prevailing wage laws had roughly the same rate of minority participation throughout 1975-78 and 1987-90. On average, however, populations of the states that never had prevailing wage laws had higher proportions of minorities.

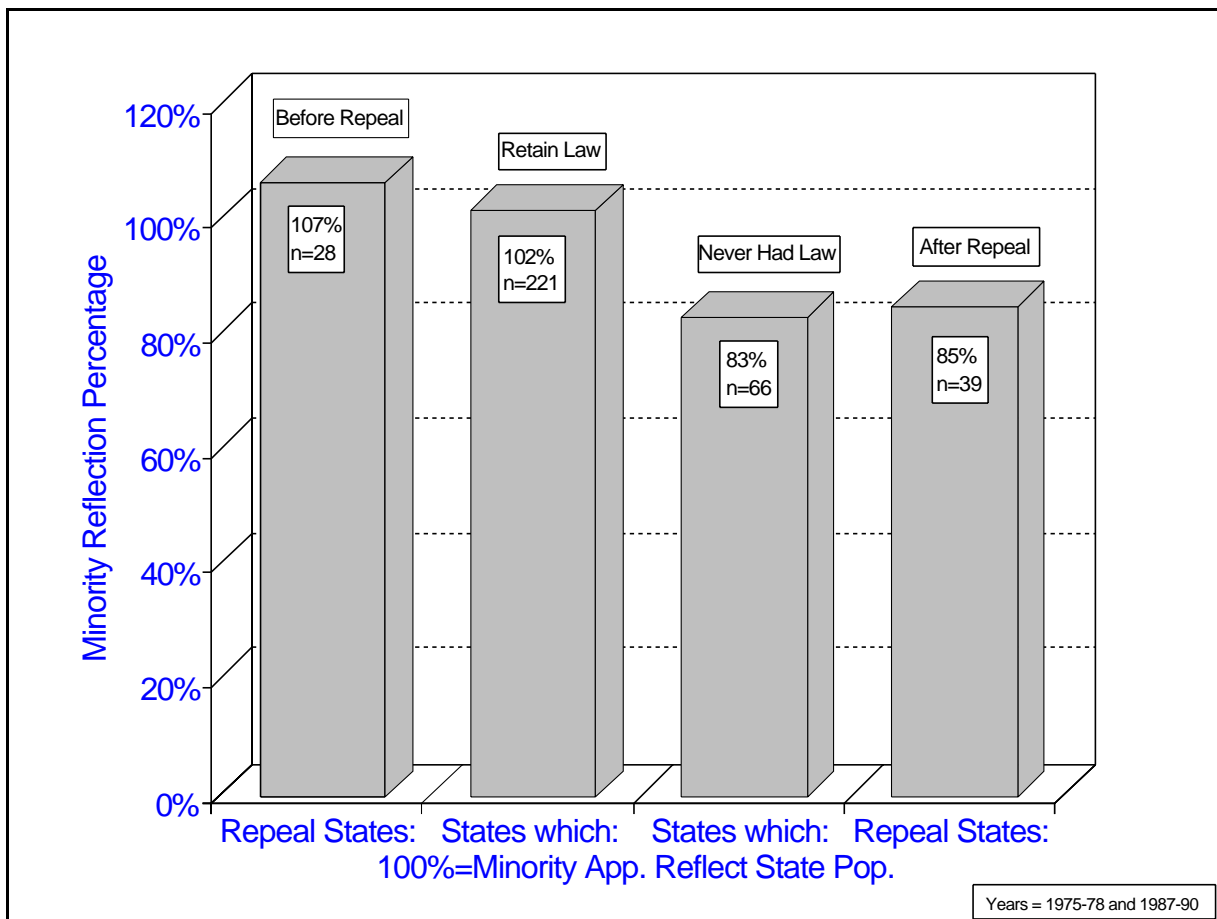


Figure 3.10 Ratio of the percentage of minorities in construction divided by the percentage of minorities in the state population, by state groups
 Source: U.S. Department of Labor, BAT and BLS.

This figure presents the ratio of the percentage of minorities in construction apprenticeships divided by the percentage of minorities in the state population. This ratio allows us to measure whether minorities are under-represented in construction apprenticeship programs. A ratio of 100% would show that the proportion of minority apprenticeships in each group of states exactly reflects the minority as part of the state population. Minority participation in construction apprenticeships mirrored the state population in repeal states prior to repeal. In fact, minorities were slightly over-represented at 107 percent. In states that retained their prevailing wage laws throughout the period (1975-78 and 1987-90), minorities again were very slightly over-represented at 102 percent. In repeal states, after the repeals, in contrast, minority participation in apprenticeships fell to levels that seriously under-represented minorities (85 percent) and resembled the under-representation characteristic throughout the period of states that never had prevailing wage laws (83 percent). Non-union apprenticeship programs tend to be small and do not fall within the oversight of affirmative action guidelines – which may be why the repeals have led to an under-representation of minorities in apprenticeships.

had prevailing wage laws, minority representation rates averaged 83 percent throughout the period. Thus, both repealing states prior to repeal and "retaining" states throughout the period had minority participation in construction apprenticeships that mirrored the state population. In contrast, both repealing states after the repeal and states which never had prevailing wage laws had substantially under-represented minority participation in construction apprenticeships.

Summary

Employment in construction is inherently unstable, because the industry fluctuates cyclically and seasonally – and firms expand and contract their employment as they win and lose job bids. Unions have acted like a flywheel in the industry, creating career workers when there were only casual jobs. Unions did this by facilitating the movement of journeymen from employer to employer and minimizing the employers' transaction and screening costs for the training. Unions also lowered training turnover by providing a mechanism whereby employers and journeymen could rationally invest in the human capital of apprentices. This raised the wages of apprentices so they would stay with training and induced the union and employers to promote the passage of apprentices to journeymen in order to preserve their investment. Unions also encouraged the career attachment of trained journeymen by providing relatively high wages and additional wages in the form of health and retirement insurance, which are increasingly attractive to workers as they age. By creating career jobs in a casual labor market, unions created the institutions needed to make human capital investment a rational market activity.

With the decline of unions in Utah, the formation and preservation of human capital skills have become less-rational. Self-investment by apprentices becomes more precarious as the differential between the apprentices' wage and alternative wages in other industries widens. It simply becomes more reasonable for apprentices to leave construction if unforeseen personal budget problems emerge. The high turnover among non-union apprentices represents in the aggregate a considerable loss of human capital to the construction industry, even though it is not a loss the employer or the state pays for directly. With the lowering of construction wages, it becomes reasonable for young construction workers to limit the amount of human capital they invest in themselves. With the worker's slower stake in construction skills and with the disappearance of wages in the form of health and old-age insurance, it becomes more reasonable for journeymen construction workers to abandon the construction field when they start families. This represents an additional loss of built-up human capital.

Contractors in Utah have attempted to minimize the effect of this increased skill volatility within the industry by encouraging firm attachment. Still, despite initiatives, such as profit-sharing, 401K plans, and health insurance, designed to attach key workers to a firm, construction turnover remains well above the average for the Utah labor market. In short, union decline has meant the decline of the career worker within Utah construction, a diminution in incentives to invest in construction skills, and an increased loss of accumulated human capital as apprentices and journeymen leave the trades. Although the loss of human capital and career jobs in this industry does not appear as a private cost on the ledgers of any contractor, the industry and society at large pay a price for the loss of financially secure occupations in construction. Not only is quality in the industry put at risk when human capital stocks are allowed to dwindle, but the quality of social life is imperiled when we dismantle the institutions that generate stable jobs out of unstable working conditions.

This instability is mirrored in the continuing decline of construction wages in Utah. Despite a return to boom times in Utah construction, construction worker earnings continue to fall relative to average annual earnings in the state. Utah's construction boom has had to piggy-back on the training of California construction workers. Whether Utah can continue this free ride is uncertain. What is certain is that there is no free ride from the effects of a federal repeal of Davis-Bacon. Experience from state repeals indicates that formal apprenticeship training in construction will fall by about 40 percent if Davis-Bacon is repealed. If state experiences are predictive, this will hurt minority workers most. In states that repealed their prevailing wage laws, minority participation in apprenticeship programs fell from reflecting each state's minority population to significantly under-representing minorities. This pattern is consistent with states that have never had prevailing wage laws. Although states that retain their prevailing wage laws have minority participation in apprenticeships that reflects their state populations, states that have never had prevailing wage laws have minority participation rates that are only about 80 percent of the rates in which minorities are present in the state population.

From chapter II, we have seen that a repeal of the Davis-Bacon Act will lower construction wages and earnings. That finding is consistent with the case study of Utah presented in this chapter. We have also seen that a repeal will significantly reduce training in construction. It may well be that as the stock of human capital falls in construction and as the jobs market becomes casual and turbulent, more minority workers will obtain jobs. But they will not obtain training as they do now in the states that retain their prevailing wage laws and they will not be entering into occupations that offer a middle-class income with benefits.

IV. Construction Safety Put at Risk

Construction is dangerous work. In fact, it is the nation's most dangerous industry. According to the U.S. Bureau of Labor Statistics:

- More than 900 construction workers are killed each year — 3 to 5 per workday.
- 510,500 work-related injuries and illnesses occur annually — almost 2,000 cases per day.⁷⁷
- 204,800 cases involve lost work days, for a total of 4.6 million days lost from work per year.

A recitation of the hazards associated with construction work, however, cannot ignore the substantial variability of accidents and their consequences across job sites and institutional environments. Accidents and injuries are the product of a complex interaction between worker and environment, and injuries will be either fostered or limited, depending on how well this interaction promotes safety. This chapter focuses on the effect of the repeal of state prevailing wage laws on injuries in construction. The focus on safety rather than overall health, at this juncture, is strictly a concession to the paucity of reliable data on illnesses related to construction.

Why might the repeal of a state prevailing wage law affect the safety record in construction? How does the presence or absence of such a law alter the important interaction of worker and environment? Certain parameters are key to the incidence of injury. For instance, construction work is more dangerous when workers are untrained and inexperienced. Stresses associated with a lack of job security, the pace of work, and the possible avenues for grievance all feed into the critical interaction of work and environment on any job site.

In Utah, following the 1981 repeal of the state's prevailing wage law, training declined as the construction labor market was going into recession (see chapter III). The lack of training and widespread use of inexperienced workers began to surface as the construction economy rebounded. One experienced pipe fitter recalls of that era:

Contractors were using inexperienced people with no training. They had no training program to begin with, they were hiring people off the street with no experience in the trade. What they would do is everyone that got hired on one project that did not have a history or work experience on a construction job, they had to wear a red sticker on their hard hat. They had to wear that for 30 days. Well everywhere you would look there were red stickers everywhere. I estimate that about 40 or 50% of the people had one on their hat. They called them "hamburger kids."

— Pipe fitter, Salt Lake City, 1994

Lack of training and inexperience are not the only sources of work injuries. In Utah there was a greater sense of job insecurity after the repeal of the state's prevailing wage law and the related decline in union work. Without union security, ex-union workers with training and experience found themselves taking chances they would not have taken prior to the repeal. One union worker who was forced to take work in the open shop recalls:

I got hurt in 1986. There was a great deal of pushing to get the job done. I was working with an older man that came out of retirement. He was about 70 years old. We were waiting for a cherry-picker to move some pipe. We were waiting for a couple of hours, because they laid off some operators. After two hours of waiting, two hours of superintendents eyeballing us, I went and

walked under the piece of pipe, which weighed 253 lbs. I carried it over to the structure, but I didn't see because the snow was covering a hole in the ground. I stepped in it, it was about 14 inches deep and 2 feet across. I pulled muscles in my back, pulled some discs in my back. What I was thinking of at the time was, I can't afford to lose this job. All these guys walking by me looking at me, I thought we better get this pipe in there some way. I was nervous, I should not have done it but I did.

— Union pipe fitter, Salt Lake City, 1994

Why Prevailing Wage Repeals Lead to Increased Injury Rates

We can postulate, based on studies of safety and health in the construction industry, why repeal of the state prevailing wage laws is associated with increases in injury rates. Take as the first premise these telling facts:

- The rate of injuries "decreases substantially as length of service increases."⁷⁸
- Large, experienced employers in construction have injury rates that are 80% below small-to-medium-size contractors.

Repeals of state prevailing wage laws have altered construction labor markets in those states in several ways that affect job site safety:

1. The bidding process has become cutthroat.
2. Workers are less likely to make a career of construction work.
3. Even as experienced workers are leaving the industry in increasing numbers, apprenticeship training has declined.

Cutthroat competitiveness in contracting. In Utah, the repeal of the state's prevailing wage law led to a burgeoning of start-up contractors with limited track records (chapter II). These new entrants joined existing contractors in a heated bidding process for state contracts that resulted in lower bids, but ultimately higher costs, as a percentage of the state engineer's estimate of the job cost. Cutthroat competitiveness, in other words, resulted in increased cost overruns. Inexperience at the firm level, small size, and cost pressures all contribute to compromised safety on the job.

Because of their relative inexperience, new firms tend to face greater on-site coordination problems than firms with longer track records. Such problems can add to costs, but also directly endanger safety. Problems in coordination, perhaps related to delivery of materials and equipment, or in scheduling work with subcontractors, lead to greater uncertainty with respect to the construction schedule. Uncertainty is a breeder of safety risk, as workers can less easily anticipate and plan for the daily contingencies of work.

New entrants in the industry also are generally smaller in size than established firms. Smaller firms have worse safety records than larger firms, in part because of greater laxity of enforcement of safety rules and the relative absence of formal safety programs.

Of greatest importance, however, is the firm's reaction to increased pressure to cut costs in the face of intensified competition and cost overruns. There is a tendency to speed up work and cut back on safeguards in the face of such pressures.

Workforce turnover. When state prevailing wage laws were repealed, worker turnover increased significantly, as the industry found it harder to retain workers for long-term careers (see chapter III). Repeals resulted in a decline in the union share of the construction labor market, driving down average construction wages in the state and decreasing union apprenticeship training for

construction. In response to the decline in union membership and training, contractors attempted to reduce turnover — to retain skilled workers and to minimize screening and training costs. Still, the decline in wages and in health and pension benefits drove experienced construction workers from their trades for careers in other industries. Thus, while construction firm turnover is on the decline, turnover in the whole industry is on the rise.

Those who now work on federally funded Davis-Bacon projects are more likely to be union trained because of the demanding nature of these large, civil engineering jobs. They are likely to know more about new processes and changes in technology, and they are more likely to have graduated from certified apprenticeship programs.

In states that retain their prevailing wage law — compared with those that never had such a law or repealed such a law — the proportion of construction workers receiving training is higher and injury rates are lower. A decline in wages and benefits leads to a flood of inexperienced workers into the industry as well as a decline in skilled, experienced workers needed to supervise the recruits and to assure that they work safely.

Decline in the skill base of the construction labor market. Experience is a major determinant of safe work performance — and productivity. Training of skilled construction workers is normally conducted through apprenticeship training programs, most of which are operated by unions and employers through joint trust funds. An integral part of this training is learning on the job while properly supervised. In that way, workers learn from experience while on a variety of projects. Among other things, apprentices are trained to identify and correct ergonomic problems, to detect physical hazards, and to detect the presence or release of hazardous chemicals. Knowledge about safety and health hazards, appropriate protective measures, and hazard communication methods are all important elements that apprenticeship programs provide.

When little Davis-Bacon acts are repealed, training and apprenticeship programs decline and the skill base of workers erodes (chapter III). Without employer incentives to continue apprenticeship programs, knowledge of proper safety and health procedures declines as well.

Summary. The combination of these factors — cutthroat competition, a decline in training, and an erosion of career attachments to the industry — affects the safety-related skill and experience base of the construction labor force. Workers become more injury-prone and know less about the kinds of risks they are taking. Furthermore, as the workforce becomes less skilled and its wages in construction decline, workers are forced to take more safety risks to simply make a living. Furthermore, contractors caught in the competitive speed-up often press their workers to speed up and take more chances. Workers are put at increased risk in an already hazardous industry.

A Comparison of Injury Rates

The U.S. Bureau of Labor Statistics' annual *Occupational Injuries and Illness Survey* reports accidents by state and year. Construction injuries vary by the type of work being done. We will analyze these BLS data for plumbers and pipe fitters employed by specialty contractors in the Standard Industrial Classification (SIC) 171. This specialty trade has injury rates in the mid-range of rates for construction and this trade is often employed on public works.

For pipe fitters in 1978-91, states that had state prevailing wage laws averaged 13.83 injuries for every 100 workers employed (fig. 4.1). In addition, in the states that repealed prevailing wage laws, injury rates for plumbers and pipe fitters before repeal was slightly less (13.54 per 100 workers) than the injury rates in other states with state prevailing wage laws. By contrast, states that never had state prevailing wage laws had higher injury rates (14.74 per 100 workers) and the repeal states, after they repealed the prevailing wage laws had the highest injury rates of 15.41 per 100 workers. These increases in injuries resulted in a similar increase in workdays lost per worker.⁷⁹

It is possible that injury rates might differ between states for reasons other than changes in legal status. The union pipe fitter who got hurt in Utah in 1986 slipped partly because of snowy conditions. Perhaps factors associated with safety unrelated to repeal coincidentally worsened after repeal. We controlled for factors such as regional differences in weather, time trends in injury rates, and the effects of unemployment in a multiple regression analysis of construction injuries among plumbers. This approach permitted us to isolate the effect on safety of changes strictly associated with the repeal of state prevailing wage laws.

We modeled injury cases per worker as a function of geographic regions, the unemployment rate, a time trend, and the legal status of state prevailing wage laws (table 4.1). Three measures of injury rates are reported: injury cases per worker (col. 2); serious injury cases per worker, defined as injury cases that required time off from work (col. 3); and the number of lost work days per worker (col. 4). In all three models, our focus variable, the act of repealing a state prevailing wage, has a positive coefficient. This means that as the states repealed their prevailing wage laws, injury rates went up according to all three measures.

In our model, the dependent variables are logged. This allows for a straightforward interpretation of the repeal variable as a percent increase in injury rates. So, as these states repealed their laws, the injury case rate went up by 14 percent, the serious injury case rate went up by 15 percent and the work days lost per worker per year went up by 12 percent. All of these findings are statistically significant.

All other things being equal, states that have never had prevailing wage laws also have higher injury rates for plumbers and pipe fitters in the construction industry. In terms of injuries per worker and serious injuries per worker, our results indicate that states that never had prevailing wage laws affecting construction had a statistically significant 5 to 9 percent higher rate compared with states that have prevailing wage laws.⁸⁰

The Cost of Injuries

The costs of injuries in the construction industry are staggering. Of the nation's \$62 billion spent on workers' compensation, approximately 30% goes for construction-related injuries and illnesses,

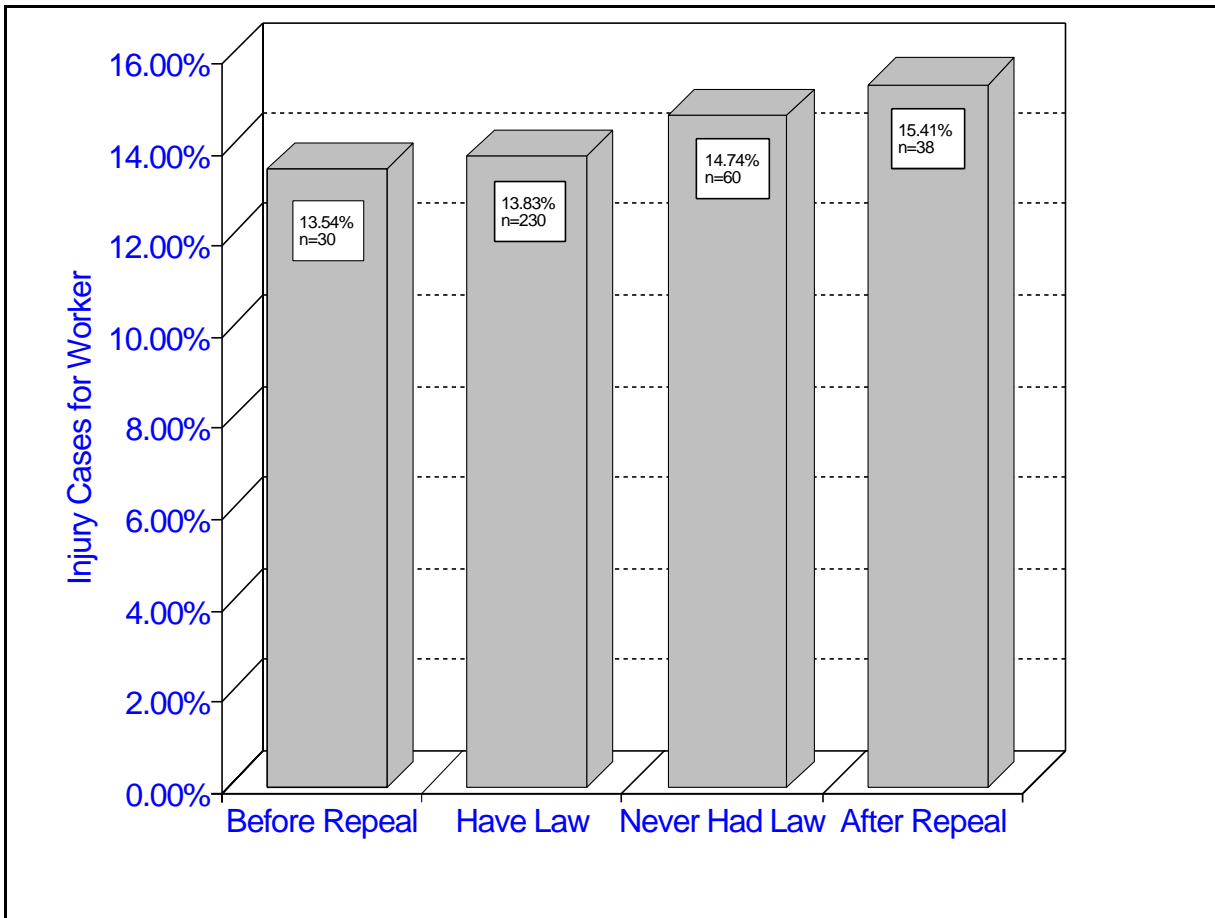


Figure 4.1 Injury rates in construction by status of prevailing wage law
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Injury rates in construction were relatively low in the nine repeal states prior to repeal (13.54 percent). After the various repeals, injury rates, on average, rose to 15.41 percent. In the 32 states that have retained prevailing wage laws, injury rates have been and remain relatively low. In nine states that have never had state prevailing wage laws, injury rates were and remain relatively high. The notation "n" refers to the numbers of state-year observations in each group. For instance, there were 230 state-year combinations for states that had prevailing wage laws in 1978-91.

Table 4.1 Regression model of the effect of state repeals on injury rates for plumbers and pipefitters

Source: US DOL, BLS.

Dependent variable: log of injury rate for plumbers and pipe fitters
(by year and state)

	Cases Per Worker	Serious Cases Per Worker	Days Lost Per Worker
(1)	(2)	(3)	(4)
(Constant)	-1.21	-2.16	-6.85
Region 1	-0.39	-0.41	-0.10*
Region 2	-0.27	-0.29	0.14*
Region 3	-0.46	-0.70	-0.35
Region 4	-0.40	-0.65	-0.44
Region 5	-0.34	-0.49	-0.29
Region 6	-0.33	-0.40	-0.13*
Region 7	-0.32	-0.64	-0.43
Region 8	-0.18	-0.26	-0.25
Time Trend	-0.02	0.00*	0.01
Unemployment	-0.18	-0.19	-0.04*
Never Had Law	0.09	0.07	0.05*
Repealed Law	0.14	0.15	0.12
Adjusted R ²	35%	49%	16%
Observations	350	313	350

* Not statistically significant.
(Regions are standards BLS categories).

In columns (2), (3) and (4), we report three models of injury rates, the first for injury cases per worker (2), the second for serious injuries per worker (3) and the last for days lost per worker (3). Controlling for regional differences in injury rates, general trends in injuries over time and variations in state unemployment rates, all three types of injuries are higher in states that have repealed their prevailing wage laws and states that never had such laws. In repeal states, injury rates climb from 12 to 15 percent compared to the rates prior to repeals.

or roughly \$20 billion. This, for a construction labor force which represents but 5 to 6 percent of the whole U.S. labor force. In addition to the direct costs of workers' compensation, there are numerous industry-related indirect costs connected to work-related injuries or deaths. These include job shutdowns and retraining of workers.

According to the Construction Industry Institute, "even when the estimates of claims are deleted from cost data, indirect costs still exceed the direct costs."⁸¹

Based on the our regression model of the experience of the nine states that repealed their prevailing wage laws, we project that national injury rates⁸² will increase by around 15% if the Davis-Bacon Act is repealed. What this will mean in terms of safety is:

- There will be 30,000 new cases of lost-time injuries each year, accounting for 675,000 days lost from work.
- Workers' compensation costs will increase by about \$3 billion per year.
- Because Davis-Bacon construction accounts for approximately 10 percent of all construction, it is estimated that repeal of the Davis-Bacon Act would increase federal construction costs by \$300 million per year in direct, workers'-compensation-related costs alone, and indirect costs would double this figure.

The numbers might prove larger, because a Davis-Bacon repeal in the wake of state repeals may have a larger impact on the construction industry.

Summary

The institutional context of work is critical to worker health and safety. State prevailing wage laws, on the surface, have little to do with worker health and safety. But such repeal has fundamentally altered an institutional context that was more conducive to workplace safety.

Repeals of state prevailing wage laws, therefore, have had hidden effects. Because the bidding process becomes overheated; because contractors, as a group, take less responsibility for training and safety; because workers feel less secure on the job; and because the workforce becomes less attached to and experienced with construction work; construction becomes more dangerous. Safety in an already relatively dangerous industry is put at risk by the repeal of prevailing wage laws.

V. Conclusion

The Effects of the Repeal of Prevailing Wage Laws

The federal system of government in the United States is sometimes called "democracy's workshop." The diverse experiences of the 50 states afford a valuable window for assessing the successes and failures of public policies. Between 1979 and 1988, nine states repealed their prevailing wage laws regulating the construction of public works. These legislative changes enable us to examine the before-and-after pictures of the effects of such repeals. Nine other states never had prevailing wage laws governing public construction, while the remaining thirty-two states retained prevailing wage laws. These "never-had" states and "retaining" states give us additional perspectives on what it means to keep or repeal prevailing wage laws.

Legislators are often forced to act on theory; this is one instance where they can act on facts and experience. The experience of the last 20 years in the application and removal of state prevailing wage laws on public construction offers insight into the prospective effects of further state repeals or the proposed repeal of the federal Davis-Bacon Act.

The Goals of State Prevailing Wage Laws

Prevailing wage laws were first enacted at the state level. Kansas passed the first prevailing wage law on public works in 1891 as part of legislation mandating the eight-hour work day. Prevailing wage laws were central to a larger effort to improve working conditions for American citizens. The notion was that child labor laws should enable children to be in school and the eight-hour work day should help allow workers time to spend with their families.

The proponents of prevailing wage legislation wanted to prevent the government from using its purchasing power to undermine the wages of its citizens. It was believed that the government should set an example, by paying the wages prevailing in a locality for each occupation hired by government contractors to build public projects.

Before the Great Depression, Arizona, Idaho, Kansas, Massachusetts, Nebraska, New Jersey, New York, and Oklahoma passed prevailing wage laws regulating state building and road construction. In 1931, Congress passed the Davis-Bacon Act. Soon thereafter, 18 additional states adopted prevailing wage laws. After World War II and until 1982, 15 more states passed prevailing wage laws. All of these laws raised the question: what was meant by a prevailing wage?

The Definition of a Prevailing Wage

Wages in local labor markets often have a peculiar distribution. Particularly where there are unions, but also in other circumstances, the highest wage in a local labor market is often the most commonly found wage rate. Even when the highest wage occurs most often, however, it will not be the average wage simply because the lower wages — however few or many — for that occupation will bring the average wage down.

Prevailing wage laws are intended to get the government out of the business of pulling down wages. The dilemma is that if the state pays the average wage, it will automatically undercut the most commonly found wage. Alternatively, if government pays the highest wage found, it will always be pulling the average wage up. When is the highest wage sufficiently common that it should be called the prevailing wage rate, even though it will never be the average wage?

In the federal law, this dilemma was resolved by a threshold rule. This rule stated that if the most commonly found wage rate, to the penny, accounted for more than 30 percent of all wages for an occupation in a local labor market, that was the prevailing wage even though it was not the average wage. On the other hand, if the most commonly found wage rate accounted for less than 30 percent of all wages for an occupation in a local area, the average wage rate prevailed.

In 1985, the Reagan administration revised the rule and raised the threshold to 50 percent. Today, Davis-Bacon wage rates are the average rate for an occupation in a local labor market except, in roughly one-third of the cases, where 50 percent of the wages in that area are precisely the same. If more than half of all workers in an occupation in an area make the same wage, that wage rate — even if it is above the average — is said to prevail. But two-thirds of the time the average wage prevails.

Modern opposition to prevailing wage laws is usually founded on one of two objections. Some people oppose the idea of the government agreeing in advance to pay the average wage rate for workers in specific occupations in a local area. This criticism is completely at odds with the original purpose of prevailing wage legislation, which was to prevent the government from hiring labor at below-standard rates. Other critics object to paying a prevailing wage that is greater than the average wage in the locality. The premise of this second objection has lost a great deal of its force in recent decades. As a result of the adoption of the 50 percent threshold, and the additional fact that unionization in the construction labor market has fallen from 70 percent to about 25 percent in the last three decades, there are far fewer cases in which the wages rates determined as prevailing are greater than the average rate.

The Financial Costs of State Repeals

Lower wages for all construction workers. Supporters of Utah's 1981 repeal of its prevailing wage law recognized that repeal would lower construction wages. They maintained, however, that the money saved on public works construction justified the government's indirectly lowering the wages and earnings of some of its citizens. And, indeed, construction earnings did fall. In Utah, construction workers, who through the 1950s, 1960s, and 1970s earned 120 to 130 percent of the average non-agricultural wage in the state, saw their wages fall steadily after repeal. By 1993, Utah construction workers were earning only 103 percent of the average annual earnings in Utah, even though Utah was then experiencing a massive construction boom, in which construction wages normally go up. This earnings decline affected all Utah construction workers — whether union or non-union, whether employed on publicly or privately financed projects.

Taking the nine repeal states as a whole, the average annual earnings of construction workers in these states fell from \$24,317 (in 1991 dollars) per year before the repeals to \$22,148 after the repeals. This is simple but compelling evidence that repeals of state prevailing wage laws have lowered construction wages.

A more complex analysis confirms this general observation. Using multiple linear regression analysis, we isolated the earnings effects of the state repeals while controlling for the business cycle, regional differences in wages and unemployment, and long-term trends in earnings and employment that are not associated with repeals of prevailing wage laws. We found that the nine repeals cost construction workers in those states \$1,477 (in 1994 dollars) per worker every year since state repeal. This was about a 5 percent drop in construction earnings attributable to each state's repeal of its prevailing wage law on public works.

A slight increase in construction employment. Proponents of state repeals maintained that the lowering of wages would be offset by an increase in construction employment. While high-paid,

high-skilled workers would be hurt by a repeal, it was believed, low-paid, low-skilled workers would have more job opportunities in construction.

Repeal proponents were right that cheaper construction labor would lead to an increase in construction employment. Again using regression analysis, we found that the repeal states experienced a 1.7 percent increase in construction employment that would not have occurred without these repeals. This was an unfavorable trade-off from the standpoint of workers, however, as their wages fell by 5 percent overall while their employment rose by less than 2 percent. It turned out to be a tough trade-off for government budget-watchers as well.

Lost tax revenues. As a group, construction workers lost income, because their wages dropped by 5 percent and their total employment rose by less than 2 percent. This caused the government to lose substantial tax revenues. In recent years, the state of Utah has lost \$3 million to \$5 million annually in sales tax and income tax revenues because it repealed its prevailing wage law in construction.

Increased construction cost overruns. Cost overruns are a hidden cost of repealing prevailing wage laws. In Utah, cost overruns resulted from an over-heated bidding process in which contractors, shaved their bids in an urgent effort to obtain government contracts. After the repeal, winning bids on state jobs came in lower than ever before, but the final job costs were a higher percentage of original estimates than ever before (chapter 2, fig. 2.3). Having underbid jobs, contractors and subcontractors would arrange change orders to get the jobs done or simply walk away from badly underbid jobs and leave the state to pick up the pieces. In Utah, cost overruns on the construction of state roads tripled in the 10 years after repeal, compared with the 10 years before.⁸³

The bottom line for Utah's budget. The Congressional Budget Office estimates that, should the federal Davis-Bacon Act be repealed, the federal government might save a total of 1.7 percent on its construction costs. This savings might even be less.⁸⁴ Using an even more conservative figure of 3 percent to estimate what Utah saved in construction costs by repealing its prevailing wage law, we calculate that the Utah state budget almost — but not quite — broke even. Balancing construction cost savings against lost tax revenues, in two of the years since 1987 the Utah budget saved more money in construction costs than it lost in tax revenues. In five of the years since 1987, the state lost more in tax revenues than it saved in construction costs (fig. 5.1). In either case, the net savings or losses were small compared with the lost earnings of Utah's citizens (table 2.6, row 3). But construction workers — and the industry — were to lose more than money when these repeals were enacted.



Figure 5.1 Average annual income-tax revenue loss and construction cost savings and net effect of repeal for Utah, 1987 to 1993, in 1994 dollars
 Source: Table 2.6.

On average, the repeal of Utah's prevailing wage law has cost the state budget \$400,000 per year from 1987 to 1993. This figure has been rising and reached \$1 million in 1993. Should the federal prevailing wage law be repealed, the gap between lost federal tax dollars and construction cost savings will be greater. This is partly because a Davis-Bacon repeal would affect more construction and more workers, but also because the federal government income tax rate is higher than Utah's. Obviously, the higher the income tax rate, the greater the tax

Other Costs of State Repeals

A less-skilled labor force. Unions and union contractors do the lion's share of worker training in the construction industry. Some very large non-union contractors do their own training, but most non-union contractors hire out-of-work union-trained construction workers and workers who have learned a trade on a catch-as-catch-can basis. Most non-union contractors are not big enough to afford to train and retain their own labor force. Contractors, understandably, are afraid that in the first slack period, the workers they trained will leave them and work for their competitors. Unions historically have compensated for this market failure by inducing union contractors to share the burden of training and to share each other's apprentices.

In Utah, the repeal of the prevailing wage law led to a dramatic decline in union apprenticeship programs because the repeal led to a dramatic decline in local construction unions. Having repealed the prevailing wage law, the state was not inclined to pour money into local community colleges and vocational training centers to make up the difference. At first after the repeal in 1981, the Utah construction economy limped along in the trough of a business cycle so the absence of quality training systems was not strongly missed. Non-union contractors hired out-of-work union members and the older generation of construction workers provided a relatively skilled labor force in the open shop of non-union construction.

In the last three years, however, Utah has experienced a massive construction boom. Few training systems were in place to meet this boom. Utah has filled the gap by relying on traveling construction workers from California, which is in a construction slump. Utah has also relied on a less-skilled labor force. Whether Utah will be able to continue to rely on California workers remains to be seen; if California's economy picks up, many of the skilled California travelers will likely return home to the increased wages there.

Utah's experience with declining availability of construction training was not unique. Comparing the decade before repeals to the decade after repeals, union and non-union apprenticeship rates in construction fell by more than half in the nine states that repealed their prevailing wage laws. States that retained their prevailing wage laws did not lose ground in apprenticeship training and states that never had prevailing wage laws had relatively low training rates in construction throughout the period.

The repeal of prevailing wage laws thus had the indirect effect of reducing training and hindering the formation of a skilled labor force. When unions declined in the wake of repeal, only state government could have picked up the pieces. The cost of expanded state-financed vocational training is a hidden cost of repealing prevailing wage laws. So far, it is a hidden cost that few repeal states have been willing to pay.

Slowed economic gains by minority workers. A faltering stock of human skills in construction is not the only nonmonetary cost that resulted from state repeals of prevailing wage laws. Construction used to be one of the few blue-collar occupations left where a worker lacking a college education could earn a middle-class income. Nationwide, the average construction income in 1994 was \$27,500. Becoming a skilled construction worker was a road out of poverty for minority workers. Before the nine state repeals, participation by minority group members — male and female nonwhites — in construction apprenticeships mirrored the minority populations in each state.

In the repeal states before the repeal of their prevailing wage laws, minorities accounted for almost 20 percent of all construction apprentices. After repeal, minority participation fell to 12.5 percent of all construction apprentices. Thus, after these repeals, minorities became significantly under-represented in construction apprenticeships.

One reason for this decline is that union apprenticeship programs usually enrolled dozens of

apprentices. Non-union apprenticeship programs tied to single employers tended to be smaller, often involving no more than one, two, or three apprentices. Affirmative action regulations do not cover apprenticeship programs of fewer than five apprentices. So the union programs had to fill out affirmative action plans and follow affirmative action guidelines, while the smaller programs did not.

When the repeals drove the union programs into decline, minority workers lost the most. For instance, the percentage of minority apprentices in construction, which reflected the minority proportion in each state's population before repeal, declined in the repeal states (fig. 5.2). Minority construction workers may still enter the industry but they are less likely to receive full formal training in the absence of prevailing wage legislation. Although it has been suggested that repeal of Davis-Bacon would lower black unemployment relative to white unemployment by opening up jobs for less-skilled black labor,⁸⁵ the data do not support such a claim (see chapter 3, figs. 3.3 and 3.4). Nor is there evidence suggesting that a repeal would increase the proportion of minorities in the construction labor force. In 1990, the percentage of minority construction workers among all construction workers was virtually the same in the 32 states with prevailing wage laws compared to the 18 states without prevailing wage laws.

Thus, repeal means that minority workers will begin construction work in unskilled jobs and get their training, if at all, on a catch-as-catch-can basis. Furthermore, minorities will enter an industry that is less able to provide a secure blue-collar, middle-class income. Repealing prevailing wage laws has therefore cut off an important road for minorities into the middle class. Without skills training, workers are less productive; without safety training, they are at greater risk of injury in an already dangerous profession.

Increased work-related injury rates. All construction workers in the nine repeal states have been put at increased physical risk by the repeal of the several state prevailing wage laws. Injury rates in construction in the nine repeal states have risen by 15 percent after repeal, even controlling for other factors such as unemployment, trends in construction safety, and differences in work safety experiences by region. The decline in apprenticeship training and the rise in construction career turnover are probable causes of this increased injury rate. Other research has found this to be so. The Department of Labor found that the rate of injuries "decreases substantially as length of service increases."⁸⁶ Construction firms in Utah (and perhaps elsewhere) have sought to stem the tide of increased injuries by reducing firm turnover at least for key workers. This may have dampened the deleterious effects of less formal training and increased career turnover, but on net, injuries are still rising.

If the experience in these states can be extended to the nation, a repeal of Davis-Bacon would result in 76,000 additional construction workplace injuries annually. About 30,000 of these injuries would be serious, requiring time off to recover. More than 675,000 work days would be lost. These new injuries would occur because workers would be less well-trained and because they would have fewer on-the-job protections against contractors who are in a hurry.

Workers, of course, suffer directly from these occupational injuries — in their physical well-being and in their wallets. Increased injury rates also lead to increased costs for contractors, who must pay higher worker's compensation premiums. And, as consumers of construction services, local, state, and federal governments pay a share of those higher worker's compensation premiums.

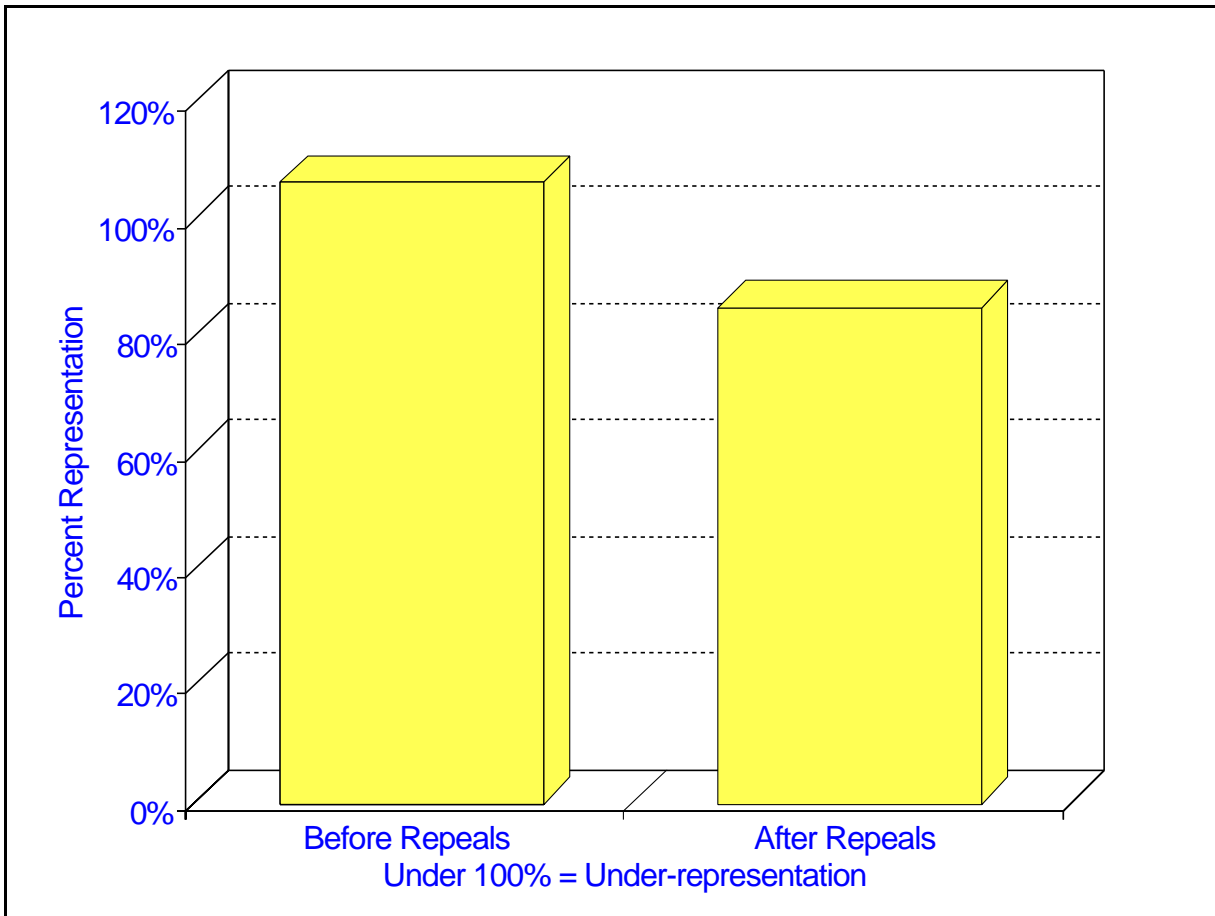


Figure 5.2 The percentage of minority construction apprentices, divided by the percentage of minority state population state--the minority reflection percentage--for nine repeal states

In the nine repeal states where separate data were available on minority populations, in the decade before repeal, minority apprentices were slightly over-represented relative to their proportion of the state population. The minority reflection percentage was 107 percent. In the decade after the repeals, the minority reflection percentage fell to 85 percent, indicating significantly under-represented minorities. Source: Figure 3.10.

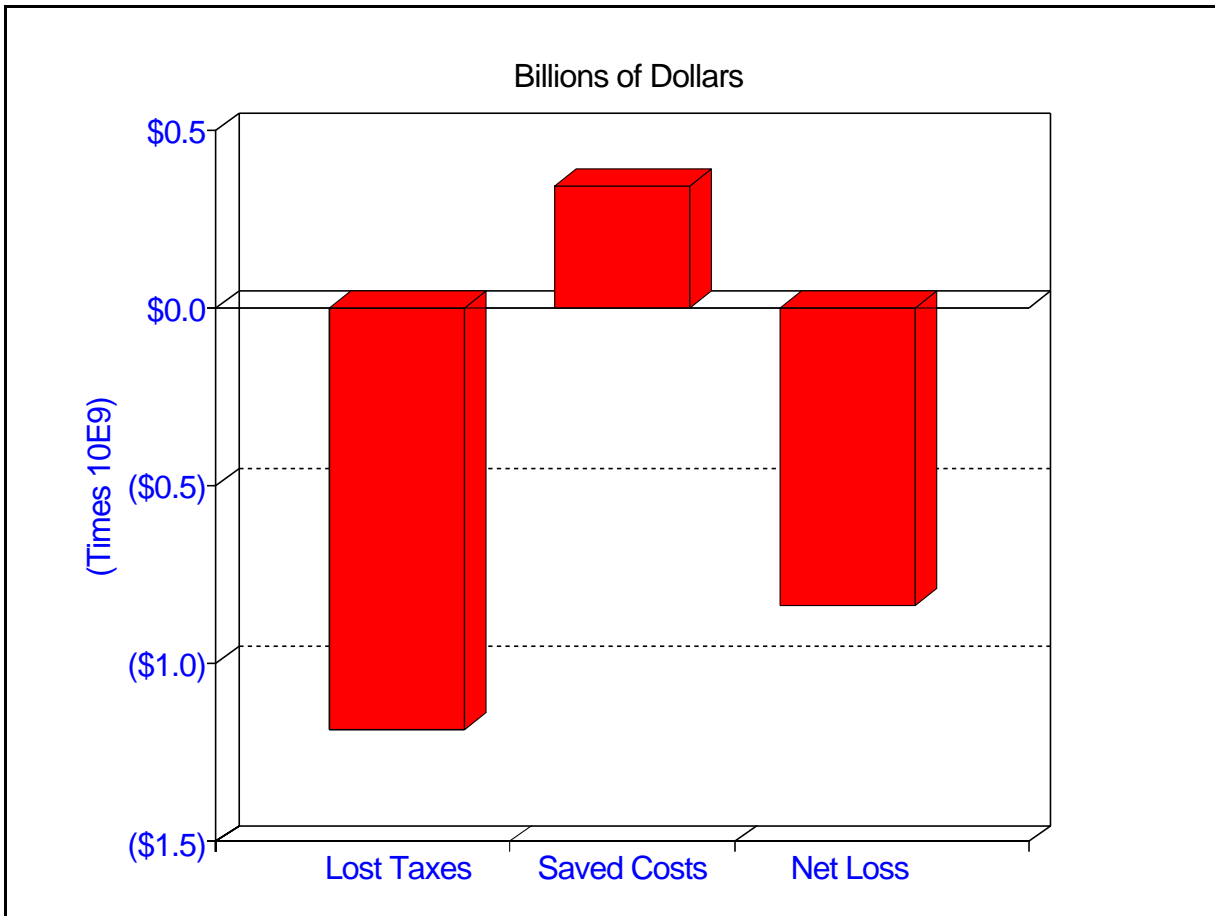


Figure 5.3 Estimated effect of a repeal of the Davis-Bacon Act on income-tax revenues, construction costs and total budget
 Source: Table 2.7.

The Congressional Budget Office estimates that the federal government would save a total of 1.7 percent in construction costs from a repeal of Davis-Bacon. This chart uses the more conservative cost savings estimate of 3 percent. At a 3 percent construction cost savings, with a marginal income tax rate of 20 percent and federal construction expenditures at their 1991 level (in 1994 dollars), a repeal of Davis-Bacon would cost the federal government \$1.2 billion in income tax revenues. The federal government would save \$346 million in construction costs and the federal budget would lose, on net, \$838 million.

Estimated Effect of A Davis-Bacon Repeal

Democracy's workshop has given us an opportunity. The nine states that repealed their "little" Davis-Bacon Acts offer a chance to estimate the likely consequences of the repeal of the federal Davis-Bacon Act. Based on this study, we project the following.

First, construction earnings would drop if the federal law was repealed. Collectively, for all construction workers, this would mean a loss of almost \$5 billion per year in real terms every year. As a result of lower wages in construction, federal income tax collections would fall by roughly \$1 billion per year. Projected cost savings on federally purchased construction almost certainly would be less. (fig. 5.3).

Second, we estimate that formal training in construction could fall by 40 percent. The industry would move from one of skilled blue-collar workers earning a middle-class income to a much-less-skilled labor force earning substantially lower wages. Minority access to good training likely would fall even farther than overall training rates. Contractors would be using more construction workers and paying less for them, but the less-skilled workers would be building less and adding less value to building projects. Purchasers of construction services would not necessarily profit from lower-wage labor if that labor is also less skilled. This is a potential lose-lose situation.

Utah was able to patch together a large-enough construction labor force after its repeal of prevailing wage law. Contractors in Utah rode freely on the training systems in place in California. But the country as a whole cannot go on a similar free ride. If Davis-Bacon is repealed and construction training nationally declines sharply, the United States will not be a small state like Utah turning to California for its rescue. Nationally, there will be no place to turn. Is the federal government prepared to spend the money to establish its own apprenticeship programs in construction? Alternately, will the government induce or require contractors to join into cooperative training programs? If prevailing wage legislation is repealed, it is likely that some additional measures will be needed to ensure occupational training for the construction industry.

Last, but not least, we estimate that the construction job site would produce 30,000 additional serious injuries yearly. These injuries would add a large but still-undetermined financial cost to the ultimate price of repeal.

It goes without saying that the public benefits from a bidding process that lowers construction costs. But the bidding process must be kept within certain bounds, to prevent consequences that could lead to increased — rather than decreased — public and societal costs. Competitive pressures tempt contractors to cut corners on quality. States and communities employ building inspectors to assure that quality is maintained. Historically, unions have assumed the role of "building inspector" for safety and training in the construction industry.

The role of unions. Employment in construction is inherently unstable because the industry fluctuates cyclically and seasonally. Firms expand and contract employment as they win and lose job bids. A worker rarely has a long-term attachment to one employer in the industry, and the construction union may be the only stable, work-related institution the worker knows. Construction unions act like a flywheel in the industry, creating career opportunities out of a casual labor market. Unions do this by facilitating the movement of journeymen from employer to employer and minimizing the employers' transaction and screening costs.

Unions lower training turnover by providing a way for employers and journeymen to rationally invest in the human capital of apprentices. Collectively bargained agreements create wage incentives for apprentices to stay with training programs, and also cause their employers to promote the workers' passage to journeyman status. Unions also encourage the career attachment of trained

journeymen by providing relatively high wages and health and retirement insurance, which is increasingly attractive to workers as they age. By creating career jobs in a casual labor market, unions create the institutions needed to make human capital investment a rational market activity.

With the lowering of construction wages, young construction workers will limit the amount of human capital they invest in themselves. With a lower stake in construction skills and the disappearance of wages in the form of health and old-age insurance, it becomes more reasonable for many journeyman construction workers to abandon construction work entirely when they start families. This is an additional loss of built-up human capital.

The loss of a career. Contractors have attempted to minimize the effect of this increased skill volatility in the industry by encouraging attachment of workers to their firms. Still, despite initiatives such as profit-sharing, 401K plans, and health insurance to bind key workers to the firm, construction firm turnover remains high. It appears that the decline of unions has been associated with the decline of the career worker in construction, a diminution in incentives to invest in construction skills, and an increasing loss of accumulated human capital as apprentices and journeymen leave the trades.

The loss of human capital and career jobs in this industry does not appear as a private cost on the ledgers of any single contractor. Nonetheless, the industry and society at large pay a price for the loss of middle-class occupations in construction. Not only is quality in the industry at risk when human capital stocks are allowed to dwindle, but the quality of our society is imperiled when we dismantle the institutions that generate stable employment out of unstable working conditions.

* * *

The construction industry is turbulent. Caught in a perennial boom-bust cycle, characterized by fleeting relationships between small contractors and subcontractors, and driven by short-term strategies of free-riding on the training of others, the construction industry is a market failure waiting to happen. The turmoil in the construction labor market has traditionally been tempered by prevailing wage legislation and labor unions. Absent these institutions, it is unclear how — or whether — the market will regularly and carefully train workers, or assure safety and health on the job site, or provide training opportunities for minority workers, or offer the incomes needed to make construction an attractive career. Government purchases account for 20 percent of all construction in the United States. For the last six decades and more, the government has contributed to the stability in construction labor markets by requiring contractors to pay the wage rates that already prevail in a local areas. Today, voices are urging the government to use its purchasing powers to reduce construction costs at the expense of worker incomes. Such a strategy has a very real cost for workers, the industry, and the government. When nine states chose this path, the results were significantly lower construction wages, slightly higher construction employment, a tripling of cost overruns on public works, an across-the-board 15-percent increase in construction injuries, a 40 percent decrease in apprenticeship training, and an even further decline in minority apprenticeship training. All this was sacrificed to save an estimated 1.7 percent in state construction costs. Even that savings was squandered by the loss in state tax revenues from an impoverished construction labor force — a poor bargain indeed.

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Chapter III

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1. *Topeka State Journal*, February 24, 1891, col.4, p. 4.
2. *Topeka Daily Capital*, February 25, 1891, p.1.
3. *Topeka State Journal*, February 25, 1891, col. 3-4, p.1.
4. *Sixth Annual Report of the Bureau of Labor and Industrial Statistics*,126.
5. *Sixth Annual*, 215.
6. *Sixth Annual*, 124.
7. L. 1891 Ch. 114 p.192-193.
8. In reply to the question of needed legislation, most workers polled by the Kansas Bureau of Labor and Industry, cited a lack of enforcement of the eight-hour law or complained of long hours. (*Twelfth Annual Report* of the Kansas Bureau of Labor and Industrial Statistics, 1896, 88-89.) Similarly, the Kansas Bureau of Labor and Industrial Statistics reported complaints of noncompliance with the eight-hour law. P.E. Cook, of the A.R.U. Local No.57, stated that the "[eight hour] law is being openly violated by the corporate and private parties on public work...." (*Fourteenth Annual Report* of the Kansas Bureau of Labor and Industrial Statistics, 1898, 204.)
9. *Sixteenth Annual Report*,272-78. From July 1900 to June 1901, 33 cases were won upholding the law.
10. *Thirteenth Annual Report of the Bureau of Labor Statistics of the State of New York*, 1895, 515-37; *Fourteenth Annual Report of the Bureau of Labor Statistics of the State of New York*, 1896, 802.
11. U.S. Congress, 1927. Although it has recently been asserted that the Alabama workers were black, there is no direct evidence supporting this claim. Evidence to support this claim comes from third-hand sources, several years after the fact and not referring directly to this incident at all. (See George F. Will, "It's time to repeal the Davis-Bacon Act," *Deseret News*, Feb. 5, 1995.) In Alabama, in 1930, only 34 percent of all brick and tile layers, carpenters, electricians, painters, plasterers, cement masons, plumbers and construction laborers were black. Thus, absent direct evidence to the contrary, the odds are that these Alabama workers were primarily white. U.S., Bureau of the Census, *Fifteenth Census of the United States, Population Volume IV "Occupations by States"*, G.P.O., 1933, Table 12, p. 121.
12. *Hearings Before the Committee on Labor, House of Representatives-Seventy-First Congress*. January 31, 1931. Bacons proposal was re-introduced in 1930 as H.R. 9232 by Congressman Elliot W. Sproul from Illinois, while Bacon proposed a complementary bill.
13. Armand J. Thieblot Jr., *Prevailing Wage Legislation: The Davis-Bacon Act, State "Little Davis-Bacon Acts," The Walsh-Healey Act, and The Service Contract Act*. Philadelphia: The Wharton School,1986, p. 8.
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15. Thieblot, 163.
16. Laws of Alabama 1979 Act no. 79-123 H362 Letson.
17. Thieblot, 151.

18. Mark Erlich, *Labor at the Ballot Box: The Massachusetts Prevailing Wage Campaign of 1988* (Philadelphia: Temple University Press, 1989), 33.
19. Nelson, Richard R. "State labor legislation enacted in 1981" U.S. Department of Labor Employment Standards Administration Division of State Employment Standards, p. 1 (office memo).
20. *Salt Lake City Tribune*, Jan. 23, 1981, B2.
21. *Salt Lake City Tribune* January 23, 1981 B2.
22. *Salt Lake City Tribune* Jan. 16, 1981, A6, col 1.
23. *Salt Lake City Tribune*, January 16, 1981 (A6, col 1).
24. Arizona laws 1984 S.C.R. No.1001.
25. *The Phoenix Gazette*, "Little Davis-Bacon Act is Ruled Unconstitutional," Sept. 12, 1979, p. A-1.
26. Thieblot, 12.
27. Idaho Session Laws Ch 3 HB7.
28. Thieblot, 165.
29. Colorado Revised Statutes 1985 Article 16,8-16-101.
30. Thieblot, 159-60.
31. New Hampshire Ch 117(SB71).
32. Thieblot, 184.
33. Kansas Ch 186 S.B.112.
34. Louisiana Act No.18 H.B.2.
35. Erlich, 4 and 6.
36. Erlich, 7.
37. Regional Information Group of Data Resources, "Executive Summary of the Study of the Economic Impact of Repeal of the Massachusetts Prevailing Wage Law" Lexington, MA, August 1988.
38. The Massachusetts Foundation for Economic Research, *The Peculiar Prevailing Wage Law* (111 Cabot Street Needham, MA 02194), March 1988.
39. Massachusetts Foundation for Economic Research, 10.
40. Data Resources, 1.
41. Data Resources, 4.

42. Erlich, 101, 111, and 112..

43. Senator Harrison Williams, United State Senate Hearing Before the Subcommittee on Housing and Urban Affairs, *First Session on Oversight to Examine the Administration of the Davis-Bacon Act*, Washington:GPO,1979, 1-2.

44. With the increasing prevalence of market-recovery agreements between unions and contractors, more often there are multiple union wage rates for a single occupation in a local labor market. This means that, even when unionization rates are above 50 percent, there is not always a single union wage rate that counts for 50 percent of workers in the market. Thus it is even less likely that the union rate will be the prevailing rate.

45. Steven Allen, "Declining Unionization in Construction: The Facts and the Reasons," *Industrial and Labor Relations Review*, 41, No. 3 (April 1988), 343-59.

46. Further research in this area is required. We will not know for certain that the Utah repeal of its prevailing wage law was the cause of the subsequent cost overruns until road construction costs in other repeal states are studied. Then the regression modeling that is used elsewhere in this study can be applied to the issue of cost overruns.

47. *Current Population Survey*.

48. Let us first investigate this issue using an example. Assume that union wages are \$16.30 per hour and non-union wages are \$10 per hour. When average wages decline by 7.5 percent, and if non-union wages remain the same, what is the percentage decline in union wages?

W_u	r_u	W_n	r_n	W_{avg}	7.5% overall decline in W_{avg}	Union Wage Percent Decline	Non-Union Wage Percent Decline
\$16.30	0.13	\$10.00	0.87	\$10.82	\$10.00		
\$10.00	0.13	\$10.00	0.87	\$10.00		38.7%	0%

Here W_u is the union wage, r_u is the percentage of the construction workforce that is unionized, W_n is the non-union wage, r_n is the percentage of the construction workforce that is not unionized, and W_{avg} is the average wage in construction. This table shows that the percentage decline in union wages must be almost 40 percent.

49. Assume that non-union wages are \$10 per hour and there is initially a wage differential of 20 percent between the union and non-union workers. This implies that the union wages are \$12 per hour. If unions represent 13 percent of the construction labor force, average wages decline by 7.5 percent, and the wage differential is eradicated, what is the percentage decline in non-union wages?

W_u	r_u	W_n	r_n	W_{avg}	7.5% decline in W_{avg}	Percent Decline in Union Wage	Percent Decline in Non-Union W.
\$12.00	0.13	\$10.00	0.87	\$10.26	\$9.49		
\$10.00	0.13	\$10.00	0.87	\$10.00			
\$9.49	0.13	\$9.49	0.87	\$9.49		21%	5.1%

The percentage decline in union wages must be 5 percent (from \$10 per hour to \$9.49 per hour).

50. Assume there is an initial wage differential of 20 percent between the union and non-union sectors. After the repeal of a prevailing wage law, assume the union–non-union wage differential decreases to 10 percent. Now let us investigate the effect of a 7.5 percent overall fall in wages. Assume that non-union wages are \$10 per hour and the wage differential between the union and non-union workers falls to 10 percent. This means that the union wages are about \$11 per hour. If average wages decline by 7.5 percent and the wage differential remains unchanged, what is the percentage decline in union and non-union wages?

W_u	r_u	W_n	r_n	W_{avg}	7.5% decline in W_{avg}	Percent Decline in Union Wage	Percent Decline in Non-Union W
\$12.00	0.13	\$10.00	0.87	\$10.26	\$9.49		
\$11.00	0.13	\$10.00	0.87	\$10.13			
\$10.31	0.13	\$9.37	0.87	\$9.49		14.1%	6.3%

The percentage decline in union wages is 14 percent (from \$12 per hour to \$10.31 per hour), and the percentage decline in non-union wages is 6 percent (from \$10 per hour to \$9.37 per hour).

51. Unless described differently, figures are given in 1991 dollar amounts.

52. The data are provided in four-digit detail of the Standard Industrial Classification (SIC) code. Data are from U.S. Department of Labor, Bureau of Labor Statistics, Office of Earnings and Employment Statistics, Data Analysis Section, Special Tape XC4057, provided by Darrell E. Carr.

53. "Secular" trends refers to trends in earnings that are not due to fluctuations in the business cycle nor due to the state repeals of prevailing wage laws.

54. Controlling for contractor type is a conservative procedure. Overall construction earnings may decline as a result of a shift in the mix of construction worker type. We are focusing on the decline of earnings within trades instead of any decline resulting from a shift in the mix of trades. Additional earnings losses may be calculated associated with a shift to a mix of less skilled workers. This is one reason why the regression estimate of earnings decline is lower than the simple estimate which does include the effect of changing crew mixes within the states construction industries. Unemployment rates are for each state for each year.

55. This is an annual earnings average by SIC group. When earnings are weighted by the number of workers in each group, earnings fall to slightly below \$25,000.

56. *Technical details:* This regression model was tested on 27,778 observations. Control (dummy) variables for 26 detailed 4-digit standard industry code (SIC) classifications were included in the regression model but not reported in the table. Each coefficient reported in column (2) of the table is statistically significant except the control for the mountain states region. (This means that the estimated regional effect on annual construction earnings for the mountain region of -\$79 is small and probably not different from zero.) The unemployment rates for 1991 for the example states shown in table 2.3 were 4.9 for Utah, 5.0 for Georgia, and 5.9 for Maryland. The model is a generalized least-squares weighted regression with the weight being the square root of the annual average employment in each SIC industry for that year. The R^2 is 0.73, which means the model is a good fit of the data.

57. The model also estimates a negative effect on annual earnings of \$1173 associated with raising the threshold for construction contracts covered by a prevailing wage law to \$500,000 or more. This suggests that at some point raising the threshold has a similar effect to repealing the law altogether. However, this result is based on experience from only two states, Maryland with a \$500,000 threshold and Oklahoma with a \$600,000 threshold. We could not find negative effects on earnings from lower thresholds in the \$100,000 to \$400,000 range which leads us to be cautious about this result. A conservative interpretation of this result may be that thresholds below \$500,000 have a minimum impact on construction earnings while thresholds above \$500,000 have progressively more negative effects on earnings.

58. The Standard Industrial Classification (SIC) code for construction consists of detailed categories of general contractors such as commercial and residential general contractors, detailed categories of heavy and highway contractors, and detailed categories of specialty subcontractors such as masonry and carpentry.

59. Robert D. Reischauer, Congressional Budget Office Testimony, before the Subcommittee on Labor Standards, Occupational Health and Safety, Committee on Education and Labor, U.S. House of Representatives, May 4, 1993, p. 4.

60. Robert D. Reischauer, Congressional Budget Office Testimony, before the Subcommittee on Labor Standards, Occupational Health and Safety, Committee on Education and Labor, U.S. House of Representatives, May 4, 1993, p. 4-5.

61. U.S. Department of Labor, Bureau of Statistics, Employment and Earnings, December, 1994, Table B-3 for November 1994, p. 55.

62. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census, Government Finances, 1990-91, Series GF/91-5, Table 8, column 6, p. 9.

63. Some of the material in this chapter concerning the Utah case originally appeared in Hamid Azari-Rad, Peter Philips and Anne Yeagle, "The Effects of the Repeal of Utah's Prevailing Wage Law on the Labor Market in Construction," in Sheldon Friedman, et al., eds., *Restoring the Promise of American Labor Law*, Cornell University, ILR Press, Ithaca, New York, 1994, 207-22.

64. These data are based on quarterly per capita dues contributions to the Utah AFL-CIO Building and Construction Trades Council. These payments underestimate union membership because of under-reporting of membership from participating locals as well as other exemptions and withdrawals of locals.

65. George F. Will, "It's time to repeal the Davis-Bacon Act", *Deseret News*, February 5, 1995.

66. Indeed, an unreported multiple linear regression model tested whether changes in the male black-white unemployment ratio could be associated with state repeals of prevailing wage laws or the fact that a state never had such a law. This model controlled for time trends in the male black-to-white unemployment ratio, regional differences in unemployment ratios, and changes in the level of unemployment. While the model found a strong time trend in the black-to-white unemployment ratio and significant regional differences in the ratio, there was no statistically significant relationship between either the repeal of prevailing wage laws or the complete absence of prevailing wage laws and the black-to-white unemployment ratio. In short, there is no statistical connection one way or the other between the status of prevailing wage laws and the relative unemployment of blacks and whites.

67. These state demographic unemployment rates are from U.S. Department of Labor, Bureau of Labor Statistics, *Geographic Profile of Employment and Unemployment*, 1974 to 1992.

68. U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population, Detailed Population Characteristics and General Population Characteristics, GPO, 1992.

69. Data available on request.

70. Utah Department of Employment Security, Labor Market Information and Research, *Annual Report of Labor Market Information*, 1993, table 5, Salt Lake City, 1994.

71. Hamid Azari-Rad, Peter Philips and Anne Yeagle, "The Effects of the Repeal of Utah's Prevailing Wage Law on the Labor Market in Construction," in Sheldon Friedman et al., eds., *Restoring the Promise of American Labor Law*. Cornell University, ILR Press, 1994, 207-22.

72. U.S. Bureau of the Census, *1970 Census of Population*.

73. U.S. Bureau of the Census, *1970 Census of Population*.

74. Figures 3.7 and 3.8 include all states for which any data are available, except California, Delaware, the District of Columbia, Hawaii, and Rhode Island – for which there are no Bureau of Apprenticeship Training data for the second period. We exclude these states and the District of Columbia (for the same reason).

12. We do not know what accounts for the unusually high training rate for "never-had" states in 1976. This anomaly disappears when average training rates by decades are compared.

76. This transformation into the log of an odds ratio meets the normality assumptions of linear regression analysis. The technique used is generalized least-squares regression, with the regression weighted by the square root of (percent trained) times (one minus percent trained) times (state employment).

77. Latent illnesses resulting from exposure to toxic materials are responsible for an uncounted and thus undetermined additional number of injuries and illnesses – the costs of which are borne as reduced productivity, ruined lives for workers and their families, and burdens on workers' compensation and other social security systems. For a mix of reasons, there are no reliable estimates on the number of such illnesses.

78. C. Culver, M. Marshall, and C. Connolly, *Construction Accidents: The Workers' Compensation Data Base, 1985-1988*, Washington, DC, OSHA Office of Construction Engineering, 1992.

79. In figure 4.1, n refers to the number of observations in each state-law category. For instance, there were 230 state-year combinations for states that had prevailing wage laws throughout the period.

80. In the case of lost workdays per injury, the reported result is of the expected sign, but not statistically significant.

81. Jimmie Hinze, *Indirect Costs of Construction Accidents*, Seattle: The University of Washington, 1992, 14.

82. Because of small numbers, there are no reliable estimates on how repeal would affect death rates. Thus, we cannot calculate the projected increase in fatalities due to repeal. If, however, they were to be affected at the same magnitude as are injuries, we would expect an increase of 130 to 150 fatalities per year.

83. Utah, Department of Transportation, "Final Estimates Processed for Payments, 1970-74 data published in 1985 and 1994 reports.

84. The savings are so small because labor costs on public works are only roughly 25 percent of total costs. If you cut those labor costs by 10 percent, you have cut total costs by only 2.5 percent.

85. George F. Will, "It's time to repeal the Davis-Bacon Act", *Deseret News*, February 5, 1995.

86 Charles Culver, Michael Marshall, and Constance Connolly, *Construction Accidents: The Workers' Compensation Data Base, 1985-1988*. Office of Construction and Engineering, OSHA, 1992.