STATE PREVAILING WAGE LAWS AND CONSTRUCTION LABOR MARKETS

by

Mark Price

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THE UNIVERSITY OF UTAH GRADUATE SCHOOL

SUPERVISORY COMMITTEE APPROVAL

of a dissertation submitted by

Mark Price

This dissertation has been read by each member of the following supervisory committee and by majority vote has been found to be satisfactory.

10/15/2004 — Chair: Peter Philips

10/15/2004 — Cihan Bilginsoy

10/15/2004 — Thomas Maloney

10/15/2004 — Norman Waitzman

10/15/2004 — Richard Chapman

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To the Graduate Council of the University of Utah:

I have read the dissertation of Mark Price in its final form and have found that (1) its format, citations, and bibliographic style are consistent and acceptable; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the supervisory committee and is ready for submission to The Graduate School.

10/15/2004
Date

Peter Philips
Chair: Supervisory Committee

Approved for the Major Department

K. Erturk

Korkut Erturk
Chair/Dean

Approved for the Graduate Council

David S. Chapman
Dean of The Graduate School

ABSTRACT

State prevailing wage laws are the subject of much public policy debate in state legislatures throughout the country. These debates and most research on this subject focus primarily upon the relationship between these laws and the cost of public construction. Comparatively little is known about how repeal reshapes construction labor markets. The repeal of some state laws mostly in the 1980s has provided researchers with a natural experiment where construction labor markets in states that eliminated their law can be compared to the same markets in states that did not repeal or enact these laws. Using data collected in the Current Population Survey between 1977 and 2002 this dissertation takes advantage of this natural experiment to examine how repeal affects union density, hourly wages, benefits coverage, and the accumulation of human capital in the construction labor market. I also examine how the effect of repeal on each of these factors differs by race and construction occupation.

Repeal on average lowers union density, average wages, rates of coverage by pension and/or health insurance, and the quantity of human capital. Relatively less-skilled construction occupations are the primary group of workers for whom hourly wages and the level of human capital decline the most. Less-skilled but unionized construction occupations do not lose relative to their higher-skilled unionized counterparts in terms of wages, but they do experience larger declines in union density as a result of repeal. Also related to repeal, less-skilled nonunion workers experience a decrease in their hourly

wages relative to higher-skilled nonunion workers. Although there is no evidence that Black construction workers gained in terms of hourly wages or benefits coverage as a result of repeal, their relative concentration in less-skilled construction unions lead to a disproportionate decline in Black union density.

To mom and dad

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CHAPTER 1

INTRODUCTION

In 1931, Congress passed and President Hoover signed the Davis-Bacon Act, a law which requires construction projects financed by federal money to pay wages and benefits which prevail in the local labor market. Currently, the definition of the wage and benefits package that prevails in the local labor market is the wage and benefit paid to the majority of workers in an occupation or, in the absence of a majority, the average wage in the occupation. Between 1891 and 1970, all but nine state governments passed what are often referred to as "Little Davis-Bacon Acts" which require the payment of prevailing wages on state-financed construction projects.[1] Between 1979 and 1988, nine states – primarily in the South, Plains and Mountain West – repealed their prevailing wage laws. In addition in 1995, Oklahoma's law was judicially annulled, and between 1994 and 1997 Michigan's law was suspended. Although the federal law remains enforce in all 50 states for federally funded projects, in 2004, the purchase of construction services by governments in 19 states are not covered by a prevailing wage law.

This dissertation aims to answer three broad questions: First, how has state prevailing law repeal changed union density within the construction labor market? How has repeal influenced total compensation, specifically hourly wages and access to

[1] The method of determining the prevailing rate varies widely across states.

employer-provided pensions and health insurance? Finally has repeal changed the composition of human capital within the construction labor market?

The defining feature of the construction labor market is balkanization by trade, with a wide variation of skill and experience within and across trades. These differences are heavily influenced by tradition and technological change. The primary factor shaping these differences is how contractors compete for work which, in turn, is determined by the presence or absence of collective bargaining. Under collective bargaining apprenticeship programs exist in every trade with even laborers receiving extensive training designed to raise their productivity (Aronson et al. 1999). Spending on wages, benefits and training is all fixed in a common labor contract, with all the signatories accessing a common pool of labor. Rather than competing on compensation and training costs, contractors compete in this segment for work based upon factors like the quality of physical capital and organizational efficiency.

In the absence of collective bargaining the principal problem that contractors face is the need to have access to skilled craftsman but also to keep total compensation relative to their competitors as low as possible. There are no multiemployer institutions to train a common labor force, thus leaving contractors to cultivate the skills needed in their individual work forces. Contractors in the open shop that finance general training are unlikely to recoup their investment as competing contractors lure away their workers, thus making extensive apprenticeship programs rare. To overcome this problem open shop contractors divide their workforce in two, establishing long-term relationships with key workers effectively using accumulated on-the-job experience as a substitute for

formal training.[2] The rest of their workforce policy is structured to achieve downward wage flexibility.

Prevailing wage laws influence the relative success of these two sectors. Due to rapid labor turnover in construction, the process of construction subcontracting, and the ephemeral nature of specific construction sites, National Labor Relations Board (NLRB) elections are uncommon in this industry. Furthermore, the Taft-Hartley Act provides an exception in construction permitting contractors to sign collective bargaining agreements without a prior representation election. In the absence of NLRB elections, "top-down" organizing – namely, unions convincing contractors to become signatories to local collectively bargained agreements – is the primary mode by which union coverage in this industry is created and extended.

Prevailing wage regulations encourage contractors to sign collective bargaining agreements and promote collective bargaining to the extent that proclaimed prevailing wages and benefits are similar to local collectively bargained wages and benefits. Under these circumstances, contractors feel they can sign collective agreements and still effectively compete for public work, which often accounts for about 20 percent of construction demand. Unencumbered by the cost of providing for either training or benefits nonunion contractors are expected to gain market share at the expense of union contractors as a result of prevailing wage law repeal, thus leading to a long-run decline in union density.

In the trucking (Belzer 2001) and meat packing (Schlosser 2001) industries employers have pursued a competitive advantage through labor market strategies which have transformed employment from a career to a job. These "low road" strategies

[2] These workers are also sometimes former union members that completed an apprenticeship program.

include low wages, reduced or eliminated benefits, and when possible plant relocation. At their core, employers substitute a low-skill workforce with a very high degree of churning for a union workforce with a high degree of experience and a moderate to low level of skill. These substitutions typically require both organizational and technical innovation in order to be successful.

In many respects the occupational mix of the construction industry is a microcosm of the larger economy characterized by a diversity of low (laborers), medium (operating engineers) and high-skill (iron workers) occupations. The success of low road labor market strategies will be limited by the same force that made construction unions among the first successful labor unions in the late 19th and early 20th century, that force is skill. Low human capital intensive workers are much poorer substitutes for high-skill occupations like electricians, plumbers and structural metal workers than they are for lower-skilled occupations like laborers, painters and roofers. As long as wages are sufficiently low additional hours of work can more easily substitute for the accumulated skill and experience involved in painting, plastering, and roofing. In more technically challenging activities like electrical or iron work, employers pursuing a low road strategy face a much greater risk that low wages will not compensate for the additional costs of rework, the destruction of expensive raw materials and capital equipment, not to mention the loss of future business resulting from poor quality work. The higher the skill, the greater the chances that technologies do not exist to compensate for human judgment and precision in work environments which change from project to project. Furthermore the greater the skill involved, the less likely employers will be able to cost effectively have skilled craftsman supervise a larger crew of unskilled laborers. Therefore it is our

expectation that the magnitude of the reduction in union density associated with repeal will differ according to skill level with union density falling more among low skill occupations than among higher-skilled occupations. This dissertation will investigate the impact of repeal upon differently skilled occupations.

As others have found (Kessler and Katz 2001) state prevailing wage law repeal will also put downward pressure on the union wage scale. Prevailing wages are determined by occupation as are differentials in wages across different craft unions. Does prevailing wage law repeal change these differentials; specifically does repeal increase the gap between the wages of high-skilled union members and lower-skilled union members? In the open shop higher-skilled occupations are the key workers that contractors seek to keep employed throughout the year. How does prevailing wage law repeal shape differences between differently skilled occupations in the open shop?

Because prevailing wage laws also mandate the payment of benefits, repeal is associated with smaller contributions to pension plans and health coverage (Petersen 2000, Petersen and Godtland 2004). What if any impact does repeal have upon pension and health insurance coverage? Does union status or skill make a difference?

The different labor force strategies that the union and open shop sectors pursue lead to different levels of formal educational attainment between these sectors. Does the impact of repeal on formal educational attainment in the construction labor force differ by occupation? Do unions respond to repeal by seeking workers with less formal education?

Some have argued that the intent of the federal Davis-Bacon Act and by implication the “Little Davis-Bacon Acts” that cover state-funded construction projects

was to exclude Blacks (Thieblot 1975, Bernstein 1993); others have challenged this assertion (Azari-Rad and Philips, 2004). Still others have argued that whatever the intent of the law it as a wage mandate operates to disadvantage minorities by discouraging the employment of the less skilled (Vedder and Gallaway 1995, Bloch 2003). The opponents of prevailing wage laws in essence characterize repeal as a means to achieve more racial equity. The repeal of prevailing wage laws provides a unique opportunity to test this view and to examine the racial composition of an industry with less than a sterling history of race relations. Does the impact of repeal upon union density, total compensation, and years of schooling differ by race?

This dissertation includes six chapters. The introductory chapter is followed by a review of the prevailing wage literature. Chapter 3 covers the data and methods used to answer the questions posed in this chapter. Chapter 4 explores the impact of repeal on union density between 1977 and 2002. Chapter 5 examines the effect of repeal on real hourly wages between 1977 and 2002 for all construction workers and then examines how the effect of repeal differs by race, union membership, and skill level. Also included in this chapter is an analysis of the effect of repeal upon health and pension coverage overall, by race and skill between 1979 and 2001. Chapter 6 investigates the effect on the employment of high school dropouts in the construction industry between 1977 and 2002 with additional analysis conducted by race, union status and skill.

CHAPTER 2

LITERATURE REVIEW

2.1 Union Density

Construction union density at 21 percent in 2002 was less than half the rate it was in 1966, a trend which up to at least 1983 was (Allen 1988) attributed to declining contractor profitability, with the causal factor being a rapid rise in union-nonunion wage differentials and the erosion of the union contractor productivity advantage. Another explanation which Allen raises but does not test is legal reform which lowered the cost faced by union contractors in going double-breasted, a term which means the firm establishes a nonunion subsidiary. Philips et al. (1995) in a case study of the effect of the repeal of Utah's state prevailing wage law reports anecdotal evidence that with repeal union contractors went double-breasted first and then eventually completely nonunion. Going double-breasted in that case was a mechanism by which contractors could, with little cost to productivity, transition between relying upon a union workforce to an exclusively nonunion workforce. To what extent double-breasting is a causal factor in the decline in union density remains an open question.

With respect to the link between union density and prevailing wages, both Allen (1983) and Bloch (2003) find a positive correlation between union density and prevailing wage rates. Such correlations are uncontroversial and unsurprising since the intent of

prevailing wage laws is to reflect in government-funded work the local wage scale which will look more like the union wage scale the greater the share of the labor force is unionized. The key question is to what degree prevailing wage laws promote collective bargaining. The repeal of some state prevailing wage laws has allowed for the measurement of the extent to which the removal of these laws in turn lowers union density. To date only Kessler and Katz (2001) have attempted to directly link changes in union membership to state prevailing wage law repeal, and they could find no support for such a linkage. This dissertation will reexamine whether there is a link between repeal and union density.

In an analysis of union membership by race, Ashenfelter (1972) found that the ratio of Black to White wages was the same within construction unions as prevailed in the unorganized portion of the construction labor market. Furthermore the union density of Black construction craftsman and operatives in 1967 was half the rate of union density for White craftsman and operatives. Among construction laborers union density was 35 percent compared to 28 percent for White construction laborers. Both in terms of union-nonunion wage differentials and union density Ashenfelter found that unionized Black construction workers were worse off compared to their counterparts in nonconstruction industries. These findings confirmed the already well-known racial disparities within the construction industry, disparities which gave birth to the first aggressive efforts by the Justice Department to force private sector employers to implement affirmative action programs. An interesting question this dissertation addresses is how prevailing wage law repeal altered union density among Black construction workers and how the skill composition of the Black construction labor force has changed.

A further unique contribution of this study is to explore the effect of repeal upon different skill groups. A key innovation in this dissertation is the aggregation of construction occupations into four distinct skill groupings. Whether it is union density in Ashenfelter (1972) or the estimation of labor demand in Bloch (2003), most analysis of the construction labor market by skill has been restricted to the broad occupational categories craftsman and laborers, categories which obscure important differences between the various occupations employed in the construction industry. This analysis by taking into account the craft organization characteristic of the building trades will explore how repeal has altered union density among different skill groupings.

2.2 Prevailing Wage Laws and Compensation

The literature on the effect of state prevailing wage law repeal upon compensation is more robust. Petersen (2000) constructed a data set covering the period between 1982 and 1992 and directly measured the effect of repeal on total compensation including payments into pension plans and for health insurance. He found that repeal lowered both wages and the level of pension contributions in repeal states. Specifically repeal reduced wages by 5 percent and pension benefits by 67 percent in repeal states. After extending the time period of analysis to include data collected up to 2000, Petersen and Godtland (2004) again find that repeal lowers total compensation and shifts the mix of compensation away from benefits towards wages. One potential concern with this and the previous paper is that it is based upon data for construction workers only and thus raises the possibility that it attributes to repeal trends in hourly wages and contributions to benefit plans affecting all (not just construction) workers in repeal states.

Addressing this limitation Kessler and Katz (2001) using primarily the Current Population Survey (CPS) and the Decennial Census (Census) measured the effect of repeal, between 1977 and 1993 (1990 in the Census), upon the hourly wages of construction workers relative to all workers including nonconstruction workers in all other states. Despite the addition of a more complex model and more detailed controls, these authors find a result similar to Peterson; overall repeal lowered the wages of construction workers in repeal states between 2 and 4 percent. Going beyond Peterson these authors do find that repeal lowered the wages of construction union members in repeal states relative to nonunion members by 10 percentage points. Additionally they examine trends by race, finding that repeal did not lower and in some cases increased the relative wages of Black construction workers while lowering the relative wages non-Black construction workers.

This dissertation will attempt to replicate Kessler and Katz's analysis of hourly wages extending the time period covered to include additional years and applying their methodology to measure the differential impact of repeal by skill. Furthermore I will attempt to measure the impact of repeal on pension and benefits coverage rather than levels as in Petersen, an adjustment which will allow us to examine the impact of repeal on pension and health coverage by race as well by skill.

2.3 Prevailing Wage Laws and Human Capital

Belman and Belzer (1997) and Philips (2003) argue that the accumulation of human capital within the construction industry is hampered by persistent market failures. Industry agents whether its workers, contractors, or owners each face incentives in the

open shop which under-provide for human capital accumulation, a phenomenon which generates widespread concern throughout the industry over skill shortages. It is argued that collective bargaining overcomes these markets failures by embedding in construction prices the long term costs associated with attracting, training, and maintaining a sufficient stock of human capital. With respect to the efficacy of collective bargaining in encouraging training, Bilginsoy (2003) has found that a majority of construction apprentices are enrolled in union-sponsored apprenticeship programs. Furthermore he has found that apprentices enrolled in open shop training programs are more than twice as likely to quit training as their counterparts in union sponsored programs. Bilginsoy (2004) has also explored the relationship between apprenticeship programs and state prevailing wage laws finding that the supply of apprenticeship opportunities is higher in prevailing wage states than in states without the law; he also finds that apprentices in states without a law also take longer to graduate, suggesting inefficient training programs.

Because training is investment in which returns are contingent upon the length of recoupment (Kaufman and Hotchkiss, 1999), investment in training in the construction industry under collective bargaining seeks out younger workers. This willingness to invest in the young in turn alters the kind of workers attracted to the industry. Specifically young workers who are willing to invest in themselves are attracted to the building trades, phenomenon evidenced by less formal education among open shop workers than their union counterparts (Philips 2003). This dissertation will examine how prevailing wage law repeal has altered the level of formal education in the construction labor market. As was the case with the previous two questions the examination of the effect of repeal requires that I examine if those effects differ by either race or skill.

Keyes (1982) argues that wage mandates including prevailing wage legislation through interference with the freedom to contract restrict the ability of Blacks to compete with Whites. Explicitly he argues that wage mandates prevent Black workers from offering to work for employers at wage rates lower than employed Whites earn. Prevailing wage laws also restrict the use of low-skill construction workers by requiring contractors to pay these workers at the journeyman rate for painters when these low-skill workers paint and the journeyman wage for carpenters when these same workers do carpentry. Again interfering with the freedom to contract prevailing wage laws prevents low-skill construction workers from offering to work at wages lower than higher-skilled workers. Relatively less-skilled Black youth are thus doubly hurt by prevailing wages because the laws prevent them from underbidding less-skilled White youth and more importantly generally underbidding more-skilled construction craftsman.

Empirical work by Vedder and Gallaway (1995) and Bloch (2003) suggests that these laws decrease the participation of Blacks in the construction industry through the exclusion of less-skilled Blacks. Belman (2004) after adjusting for the correlation between the American South, a region with a high proportion of Blacks, and a region more than any other characterized by the absence of prevailing wage laws found no evidence of a correlation between the existence of prevailing wage laws and Black employment. Kessler and Katz (2001) in analysis of Black employment based upon the Decennial Census find that overall Blacks are less likely than non-Blacks to be employed in the construction industry and that this differential in repeal states decreased relative to non-Repeal states by 1 percent. However supporting Belman's findings this effect was no longer significantly different from zero when Kessler and Katz included state*Black

interactions. In their analysis of CPS data these authors found no evidence of changes in the Black employment differential across repeal and nonrepeal states.

This dissertation will examine how repeal changed the participation of less educated Blacks in the construction labor market of repeal states relative to the participation of less-educated non-Blacks. Furthermore this dissertation will explore the impact of repeal upon formal educational attainment by occupational-based skill groups.

CHAPTER 3

DATA AND METHODS

3.1 Introduction

In this chapter I will discuss the data and methods used to analyze the effect of state prevailing wage law repeal. In the first section I will discuss the two different methods of grouping states according to the existence of prevailing wage laws. In the next four sections of chapter I layout the data and methods used in Chapters 4, 5, and 6. The final section of this chapter explains the methods used in all three chapters to examine differences in the effect of repeal on workers with different degrees of skill.

3.2 State Groupings

Throughout this dissertation I will refer to two alternative groupings of states based upon the presence or absence or repeal of a state prevailing wage law. The first state grouping includes three categories: law, repeal and never states: Law states including the District of Columbia had a prevailing law over the entire period between 1977 and 2002. Repeal states had a prevailing wage law in 1977 but no law by 2002. Never states are those that did not have a state prevailing wage law at any point between 1977 and 2002. The states classified under these three categories are listed in Table 3.1.

Table 3.1 State Prevailing Wage Laws

Law	Never	Repeal (year of repeal)	
Alaska	Georgia	Alabama	1980
Arkansas	Iowa	Arizona	1979
California	Mississippi	Colorado	1985
Connecticut	North Carolina	Florida	1979
Delaware	North Dakota	Idaho	1985
Hawaii	South Carolina	Kansas	1987
Illinois	South Dakota	Louisiana	1988
Indiana	Vermont	Michigan*	1994
Kentucky	Virginia	New Hampshire	1985
Maine		Oklahoma	1995
Maryland		Utah	1981
Massachusetts			
Minnesota			
Missouri			
Montana			
Nebraska			
Nevada			
New Jersey			
New Mexico			
New York			
Ohio			
Oregon			
Pennsylvania			
Rhode Island			
Tennessee			
Texas			
Washington			
Washington, D.C.			
West Virginia			
Wisconsin			
Wyoming			

Note: *Michigan's law was suspended in 1994 and reinstated in 1998.

One complication in this scheme is introduced by Michigan where the states law was suspended between 1994 and 1997. Because I begin Chapters 4, 5, and 6 with simple descriptives where I compare just two points[1] in time at the beginning and end of the period of analysis I assume in all of those tables that Michigan is a law state.

The second classification of states has only two categories: experimental and non-experimental states where experimental states are the equivalent of repeal states in Table 3.1. Nonexperimental states include both law states and never states. Again because each of the initial descriptive tables in Chapters 4, 5, and 6 compare only two points at the beginning and end of the period of analysis Michigan is classified as a non-experimental state in each of these tables.

In my regression analysis which I describe in the subsequent three sections of this chapter I apply the experimental and nonexperimental state groupings. Michigan here is treated as an experimental state. Observations collected after the law was reinstated are thus mixed with observations collected before the law was suspended. Although this mixing complicates discussing the period before and the period after repeal somewhat, ultimately I have found that excluding Michigan from my regression analysis does not alter my conclusions with regard to the effect of repeal.

3.3 Union Density

My analysis of union density is based on a data set of 1,236,632 individuals drawn from a combination of the May Supplement (1977-81) and Monthly Outgoing

[1] In some analysis I compare a pool of three years of data at the beginning of the period to a pool of three years at the end.

Rotations (1983-2002) of the Current Population Survey (CPS). The sample is limited to blue-collar nonagricultural private wage and salary workers, aged 16 to 64.

Union membership is modeled as a function of individual characteristics, coverage by a state prevailing wage law, state-fixed-effects, and time-fixed-effects. Non-construction workers are included in the sample in order to separate the effects of repeal upon construction workers and unexplained labor market trends that might be correlated with repeal.

One observation in these models corresponds to an individual i=1 ,…, N_{st}, living in year t=1,..., T, and residing in state s=1, .., S. The vector of controls X_{ist} identifies the following binary variables: age (16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65), years of schooling[2] (less than high school, 12^{th} grade, some college, college graduate), occupation (craftsman, operatives, transport, laborers, service), gender, marital status (unmarried, married), race, and an interaction term for each of these variables for data collected after 1985. The race control unless specified otherwise compares Black non-Hispanics to all other racial and ethnic groups. Throughout this study I will refer to the two groups in this control as Black and non-Black. The variable C_{ist} is equal to 1 for workers in the construction industry and 0 otherwise. The impact of repeal is measured with an interaction term where R_s is equal to 1 if the individual observed in time t lived in a state that repealed, annulled, or suspended its prevailing wage law between 1977 and 2002. This variable is interacted with A_{st}, which is equal to 1

[2] Due to changes in the collection years of schooling data I used procedures developed by Jaeger (1997) which make the educational variables comparable over time.

if the individual was observed living in a state in any year after which the repeal of the state prevailing wage law became effective:[3]

$$Ln(\frac{U_{ist}}{1-U_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * C_{ist}\beta_2 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.1)$$

where τ_t is a time-fixed effect, κ_s is a state-fixed-effect, ε_{ist} is an error term. The coefficient on the interaction term $R_s * A_{st} * C_{ist}$ describes the logged odds of union membership for construction workers living in repeal states a year or more after repeal became effective.

The impact of repeal will differ across time because in short term the impact of law repeal will be muted by existing collectively bargained contracts. The impact of repeal on union density will be greater as collectively bargained contracts expire. Therefore a second specification divides the period after repeal into a short- and long-run effect.

$$Ln(\frac{U_{ist}}{1-U_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * SA_{st}\beta_1 + R_s * SA_{st} * C_{ist}\beta_2 + R_s * LA_{st}\beta_3 + R_s * LA_{st} * C_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.2)$$

[3] In this specification it is assumed that the effective date of repeal is the year following the legislative repeal; judicial annulment or suspension was decided. In the case of suspension the variable Ast is equal to a year after the effective date of suspension and equal to 0 a year after the effective date of reinstatement of the prevailing wage law.

where SA_{st} is equal to 1 if the worker is observed living in a repeal state one to two years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state three or more years after repeal became effective and 0 otherwise. Alternatively the variable SA_{st} is equal to 1 if the worker is observed living in a repeal state one to four years after repeal became effective and 0 otherwise. The variable LA_{st} if the worker is observed living in a repeal state five or more years after repeal became effective and 0 otherwise. The coefficient on the interaction term $R_s * LA_{st} * C_{ist}$ identifies the logged odds of union membership for construction workers living in repeal states long after repeal.

The differential impact of repeal on union membership by race is measured by the following model:

$$\begin{aligned} Ln(\frac{U_{ist}}{1-U_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\ &+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * B_{ist}\beta_2 \\ &+ R_s * A_{st} * C_{ist}\beta_3 + R_s * A_{st} * C_{ist} * B_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \end{aligned} \tag{3.3}$$

where the variable B_{ist} is equal to 1 if the worker is Black and 0 otherwise. The differential impact of repeal on union membership by race is also analyzed shortly and long after repeal:

$$
\begin{aligned}
Ln(\frac{U_{ist}}{1-U_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\
&+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} \\
&+ R_s * SA_{st}\beta_1 + R_s * LA_{st}\beta_2 \\
&+ R_s * SA_{st} * B_{ist}\beta_3 + R_s * LA_{st} * B_{ist}\beta_4 \\
&+ R_s * SA_{st} * C_{ist}\beta_5 + R_s * LA_{st} * C_{ist}\beta_6 \\
&+ R_s * SA_{st} * C_{ist} * B_{ist}\beta_7 + R_s * LA_{st} * C_{ist} * B_{ist}\beta_8 \\
&+ X_{ist}\lambda + \varepsilon_{ist},
\end{aligned}
\tag{3.4}
$$

where the coefficient of interest is on the interaction term $R_s * LA_{st} * C_{ist} * B_{ist}$ which describes the logged odds of union membership for Black construction workers working in repeal states long after repeal. The differential impact of repeal by skill also uses equations 4.3 and 4.4 with the variable L_{ist} substituted for B_{ist} where L_{ist} is equal to 1 for laborers and 0 otherwise. A full discussion of the procedures used to define skill is in the final section of this chapter labeled "Occupation Based Skill Groupings". This and all subsequent regressions are weighted with an adjusted CPS sample weight (ω_{ist}) where the unadjusted CPS sample weight Ω_{ist} for individiual *i* in state *s* during year *t* is adjusted as follows $\omega_{ist} = \frac{\Omega_{ist}}{\sum_{i,s} \Omega_{ist}}$.

3.4 Wages

Our analysis of real hourly earnings is based on two CPS samples; the first includes 1,499,900 individuals drawn from a combination of the May Supplement (1977-78) and Monthly Outgoing Rotations (1979-2002) of the CPS.[4] The second sample with 1,236,632 observations is a subset of the previous that allows for measurement of the

[4] Data provided by the National Bureau of Economic Research - http://www.nber.org/data/cps_index.html

impact of repeal on wages by union status.[5] All samples are limited to blue-collar non-agricultural private wage and salary workers, aged 16 to 64.[6] Wages are deflated using the Consumer Price Index for all urban consumers.[7]

The formal models for the impact of repeal on real hourly earnings are the same as those used and described by Katz and Kessler (2001) as the difference-in-difference-in-difference approach. Real hourly earnings are modeled as a function of individual worker characteristics, coverage by a state prevailing wage law, state-fixed-effects, and time-fixed-effects. Nonconstruction workers are included in the sample in order to separate the effects of repeal upon construction workers and unexplained labor market trends that might be correlated with repeal.

One observation in these models corresponds to an individual worker i=1 ,…, N_{st}, living in year t=1, .., T, and residing in state s=1, .., S. The vector of controls X_{ist}, identifies the following binary variables: age (16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65), years of schooling (high school dropouts, 12th grade, some college, college graduate), occupation (craftsman, operatives, transport, laborers, service), gender, marital status (unmarried, married), race and an interaction term for each of these variables for data collected after 1986. The race control unless specified otherwise compares Black non-Hispanics to all other racial and ethnic groups. Throughout this study I will refer to the two groups in this control as Black and non-Black. The variable C_{ist}, is equal to 1 for workers in the construction industry and 0

[5] Data on union status are available in the May Supplement between 1977 and 1981 and in the Outgoing Rotations between 1983 and 2002.

[6] In samples based on the May Supplement and Outgoing Rotations workers earning in 1982 constant dollars hourly wages less than $1.65 or greater than $50 per hour were excluded from the sample.

[7] Before calculating hourly wages, weekly wages top-coded in the CPS prior to 1989 at $999 were recoded to $1,400 per week.

otherwise. The impact of repeal is measured with an interaction term where R_s, is equal to 1 if the individual observed in time t lived in a state that repealed, annulled, or suspended its state prevailing wage law between 1979 and 2002. The second variable A_{st}, is equal to 1 if the individual was observed living in a state in any year after which the repeal of the state prevailing wage law became effective.[8] Formally our model is as follows:

$$Ln(W_{ist}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * C_{ist}\beta_2 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.5)$$

where τ_t is a time-fixed effect, κ_s is a state-fixed-effect, ε_{ist} is an error term. The coefficient on the interaction term $R_s * A_{st} * C_{ist}$ describes the percent change in real hourly wages for workers living in repeal states a year or more after repeal was enacted.

The impact of repeal will differ across time because in short term the impact of law repeal will be muted by existing collectively bargained contracts. As these contracts expire and are renegotiated I would expect the impact of repeal to emerge more strongly. The impact of repeal on hourly earnings will be greater as collectively bargained contracts expire. Therefore a second specification divides the period after repeal into a shortly after repeal and long after repeal:

[8] In this specification it is assumed that the effective date of repeal is the year following the legislative repeal; judicial annulment or suspension was decided. In the case of suspension the variable Ast is equal to a year after the effective date of suspension and equal to 0 a year after the effective date of reinstate of the prevailing wage law.

$$Ln(W_{ist}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * SA_{st}\beta_1 + R_s * SA_{st} * C_{ist}\beta_2 + R_s * LA_{st}\beta_3 + R_s * LA_{st} * C_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.6)$$

where SA_{st} is equal to 1 if the worker is observed living in a repeal state 1 to 2 years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state three or more years after repeal became effective and 0 otherwise. Alternatively the variable SA_{st} is equal to 1 if the worker is observed living in a repeal state one to four years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state five or more years after repeal became effective and 0 otherwise. The coefficient on the interaction term $R_s * LA_{st} * C_{ist}$ identifies the percent change in real hourly earnings for construction workers in repeal states long after repeal. The differential impact of repeal on earnings by race is measured by the following model:

$$Ln(W_{ist}) = \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * B_{ist}\beta_2 + R_s * A_{st} * C_{ist}\beta_3 + R_s * A_{st} * C_{ist} * B_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.7)$$

where the variable B_{ist} is equal to 1 if the worker is Black and 0 otherwise. Substituting the variable U_{ist} for the race variable I am able to measure the percent change in hourly earnings by union status. The variable U_{ist} is equal to 1 if the worker is a union member

and 0 otherwise. The differential impact of repeal on real hourly earnings by race (or union status) is also analyzed shortly after and long after repeal:

$$
\begin{aligned}
Ln(W_{ist}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\
&+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} \\
&+ R_s * SA_{st}\beta_1 + R_s * LA_{st}\beta_2 \\
&+ R_s * SA_{st} * B_{ist}\beta_3 + R_s * LA_{st} * B_{ist}\beta_4 \\
&+ R_s * SA_{st} * C_{ist}\beta_5 + R_s * LA_{st} * C_{ist}\beta_6 \\
&+ R_s * SA_{st} * C_{ist} * B_{ist}\beta_7 + R_s * LA_{st} * C_{ist} * B_{ist}\beta_8 \\
&+ X_{ist}\lambda + \varepsilon_{ist},
\end{aligned}
\tag{3.8}
$$

where the coefficient of interest $R_s * LA_{st} * C_{ist} * B_{ist}$ (alternatively, $R_s * LA_{st} * C_{ist} * U_{ist}$) captures the percent change in the real hourly wages of Black (union) construction workers in repeal states long after repeal. Measurement of the differential impact of repeal by skill follows the same structure as equations 3.3 and 3.4 with the variable L_{ist} substituted for B_{ist} where L_{ist} is equal to 1 for laborers and 0 otherwise. As an alternative I substitute LS_{ist} for B_{ist} in equations 3.3 and 3.4 where LS_{ist} is equal to 1 for laborers or semiskill construction occupations and 0 otherwise. In the section labeled "Occupation Based Skill Groupings" at the end of this chapter I provide a description of the procedures used to define skill groups.

3.5 Pension and Health Insurance

Analysis of pension and health coverage uses a data sample of 614,026 individuals drawn from the Annual Demographic and Income Supplement of the March-

CPS, from 1980 through 2002 (Unicon 2003). The sample is limited to blue-collar nonagricultural private wage and salary workers, aged 16 to 64 who reported being employed last year.[9] The dependent variables indicate whether at the time of the sample the individual was covered by an employer-provided health plan and or an employer-provided retirement plan. The value of employer contributions to those covered is not reported. Furthermore, the pension question does not distinguish between defined-benefit plans, defined-contribution plans, 401(k) plans, and profit-sharing plans.

Both pension and health insurance coverage are modeled as functions of individual worker characteristics, coverage by a state prevailing wage law, state-fixed-effects, and time-fixed-effects.

One observation in these models corresponds to an individual worker i=1 ,…, N_{st}, living in year t=1,..., T, and residing in state s=1,..., S. The vector of controls X_{ist}, identifies the following binary variables: age (16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65), educational attainment (high school dropout, 12^{th} grade, some college, college graduate), occupation (craftsman, operatives, transport, laborers, service), gender, marital status (unmarried, married), and race. The race control unless specified otherwise compares Black non-Hispanics to all other racial and ethnic groups. The variable C_{ist}, is equal to 1 for workers in the construction industry and 0 otherwise. The impact of repeal is identified with two variables, the first R_s, is equal to 1 if the individual observed in time t lived in a state that repealed its state prevailing wage law between 1979 and 2002. The second variable A_{st}, is equal to 1 if the individual was

[9] The March-CPS pension and health insurance coverage questions refer to coverage at any job held in the year previous to the date of the survey.

observed living in a state in any year after which the repeal of the state prevailing wage law became effective.[10]

To measure benefits coverage I use three different dependent variables: P_{ist} which equals 1 if the worker is covered by a pension plan and 0 otherwise. H_{ist} which equals 1 if the worker is covered by an employer-provided health plan and 0 otherwise. PH_{ist} which equals 1 if the worker is covered by both an employer-provided health and pension plan and 0 otherwise. The logistic model (substituting for Pist, H_{ist} for health coverage or alternatively PH_{ist} for coverage by both fringes):

$$Ln(\frac{P_{ist}}{1-P_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * C_{ist}\beta_2 + X_{ist}\lambda + \varepsilon_{ist}, \qquad (3.9)$$

where τ_t is a time-fixed effect, κ_s is a state-fixed-effect, ε_{ist} is an error term. The coefficient on the interaction term $R_s * A_{st} * C_{ist}$ describes the logged odds of pension coverage for construction workers living in repeal states a year or more after repeal became effective.

The impact of repeal will differ across time because in short term the impact of law repeal will be muted by existing collectively bargained contracts. The impact of repeal on total compensation will be greater as collectively bargained contracts are renegotiated. Therefore a second specification divides the period after repeal into a shortly after repeal and long after repeal.

[10] In this specification it is assumed that the effective date of repeal is the year following the legislative repeal; judicial annulment or suspension was decided.

$$Ln(\frac{P_{ist}}{1-P_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * SA_{st}\beta_1 + R_s * SA_{st} * C_{ist}\beta_2 + R_s * LA_{st}\beta_3 \\ + R_s * LA_{st} * C_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.10)$$

where SA_{st} is equal to 1 if the worker is observed living in a repeal state one to two years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state three or more years after repeal became effective and 0 otherwise. Alternatively the variable SA_{st} is equal to 1 if the worker is observed living in a repeal state one to four years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state five or more years after repeal became effective and 0 otherwise. The coefficient on the interaction term $R_s * LA_{st} * C_{ist}$ identifies the logged odds of pension coverage for construction workers living in repeal states long after repeal. The differential impact of repeal on pension and health insurance coverage by race is measured by the following model:

$$Ln(\frac{P_{ist}}{1-P_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\ + \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * B_{ist}\beta_2 \\ + R_s * A_{st} * C_{ist}\beta_3 + R_s * A_{st} * C_{ist} * B_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.11)$$

where the variable B_{ist} is equal to 1 if the worker is Black and 0 otherwise. Substituting the variable U_{ist} for the race variable I am able to measure the percent change in the odds pension and health coverage by union status. U_{ist} is equal to 1 if the worker is a union member and 0 otherwise. Finally the differential impact of repeal on pension and health insurance coverage by race (union status) is also analyzed shortly after and long after repeal:

$$\begin{aligned} Ln(\frac{P_{ist}}{1-P_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\ &+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} \\ &+ R_s * SA_{st}\beta_1 + R_s * LA_{st}\beta_2 \\ &+ R_s * SA_{st} * B_{ist}\beta_3 + R_s * LA_{st} * B_{ist}\beta_4 \\ &+ R_s * SA_{st} * C_{ist}\beta_5 + R_s * LA_{st} * C_{ist}\beta_6 \\ &+ R_s * SA_{st} * C_{ist} * B_{ist}\beta_7 + R_s * LA_{st} * C_{ist} * B_{ist}\beta_8 \\ &+ X_{ist}\lambda + \varepsilon_{ist}, \end{aligned} \tag{3.12}$$

where the coefficient of interest $R_s * LA_{st} * C_{ist} * B_{ist}$ describes the logged odds of pension coverage for Black (unionized) construction workers in repeal states long after repeal. The differential impact of repeal by skill follows the same structure as equations 3.7 and 3.8 with the variable L_{ist} substituted for B_{ist} where L_{ist} is equal to 1 for laborers and 0 otherwise. Alternatively LS_{ist} is equal to 1 for laborers and semiskill construction occupations and 0 otherwise. The end of the chapter has more information on skill groups.

3.6 Human Capital

Analysis of years of schooling is based upon two CPS samples; the first includes 1,499,900 individuals drawn from a combination of the May Supplement (1977-78) and Monthly Outgoing Rotations (1979-2002) of the Current Population Survey (CPS).[11] The second sample with 1,236,632 observations is a subset of the previous that allows for measurement of the impact of repeal upon years of schooling by union status.[12] All samples are limited to blue-collar nonagricultural private wage and salary workers, aged 16 to 64.

The dependent variable identifies whether a worker is a high school dropout. Due to changes in the collection years of schooling data I used procedures developed by Jaeger (1997) which make the educational variables comparable over time. Whether a worker is a high school dropout or not is modeled as a function of individual worker characteristics, coverage by a state prevailing wage law, state-fixed-effects, and time-fixed-effects.

One observation in these models corresponds to an individual worker i=1 ,…, N_{st}, living in year t=1, .., T, and residing in state s=1, .., S. The vector of controls X_{ist}, identifies the following binary variables: age (16-20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65), occupation (craftsman, operatives, transport, laborers, service), gender, marital status (unmarried, married), and race. The race control unless specified otherwise compares Black non-Hispanics to all other racial and ethnic groups. The variable C_{ist}, is equal to 1 for workers in the construction industry and 0 otherwise. The impact of repeal is identified with two variables, the first R_s, is equal to 1 if the

[11] Data provided by the National Bureau of Economic Research - http://www.nber.org/data/cps_index.html
[12] Data on union status are available in the May Supplement between 1977 and 1981 and in the Outgoing Rotations between 1983 and 2002.

individual observed in time t lived in a state that repealed, annulled, or suspended its state prevailing wage law between 1979 and 2001. The second variable A_{st}, is equal to 1 if the individual was observed living in a state in any year after which the repeal of the state prevailing wage law became effective.[13]

Our dependent variable, ED_{ist} equals 1 if the worker is a high school dropout and 0 otherwise. The logistic model is as follows:

$$Ln(\frac{ED_{ist}}{1-ED_{ist}}) = \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * C_{ist}\beta_2 + X_{ist}\lambda + \varepsilon_{ist}, \quad (3.13)$$

where τ_t is a time-fixed effect, κ_s is a state-fixed-effect, ε_{ist} is an error term. The coefficient on the interaction term $R_s * A_{st} * C_{ist}$ describes the logged odds of employment of high school dropouts among construction workers living in repeal states a year or more after repeal. The impact of repeal will differ across time because in short term the impact of law repeal will be muted by existing collectively bargained contracts. Therefore a second specification divides the period after repeal into a shortly after repeal and long after repeal:

$$\begin{aligned} Ln(\frac{ED_{ist}}{1-ED_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} + R_s * SA_{st}\beta_1 + R_s * SA_{st} * C_{ist}\beta_2 + R_s * LA_{st}\beta_3 \\ &+ R_s * LA_{st} * C_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \end{aligned} \quad (3.14)$$

[13] In this specification it is assumed that the effective date of repeal is the year following the legislative repeal; judicial annulment or suspension was decided.

where SA_{st} is equal to 1 if the worker is observed living in a repeal state one to two years after repeal became effective and 0 otherwise. The variable LA_{st} is equal to 1 if the worker is observed living in a repeal state three or more years after repeal became effective and 0 otherwise. Alternatively the variable SA_{st} is equal to 1 if the worker is observed living in a repeal state one to four years after repeal became effective and 0 otherwise. The variable LA_{st} if the worker is observed living in a repeal state five or more years after repeal became effective and 0 otherwise. The coefficient on the interaction term $R_s * LA_{st} * C_{ist}$ identifies the logged odds of pension coverage for construction workers living in repeal states long after repeal. The differential impact of repeal on the employment of high school dropouts by race is measured by the following model:

$$\begin{aligned} Ln(\frac{ED_{ist}}{1-ED_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\ &+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} + R_s * A_{st}\beta_1 + R_s * A_{st} * B_{ist}\beta_2 \\ &+ R_s * A_{st} * C_{ist}\beta_3 + R_s * A_{st} * C_{ist} * B_{ist}\beta_4 + X_{ist}\lambda + \varepsilon_{ist}, \end{aligned} \tag{3.15}$$

where the variable B_{ist} is equal to 1 if the worker is Black and 0 otherwise. Substituting the variable U_{ist} for the race variable we are able to measure the percent change in the odds of employment of high school dropouts by union status. U_{ist} is equal to 1 if the worker is a union member and 0 otherwise. Finally the differential impact of repeal on the employment dropouts by race (union status) is also analyzed shortly after and long after repeal:

$$
\begin{aligned}
Ln(\frac{ED_{ist}}{1-ED_{ist}}) &= \tau_t + \tau_t^c * C_{ist} + \tau_t^b * B_{ist} + \tau_t^{b*c} * B_{ist} * C_{ist} + \kappa_s + \kappa_s^c * C_{ist} \\
&+ \kappa_s^b * B_{ist} + \kappa_s^{b*c} * B_{ist} * C_{ist} \\
&+ R_s * SA_{st}\beta_1 + R_s * LA_{st}\beta_2 \\
&+ R_s * SA_{st} * B_{ist}\beta_3 + R_s * LA_{st} * B_{ist}\beta_4 \\
&+ R_s * SA_{st} * C_{ist}\beta_5 + R_s * LA_{st} * C_{ist}\beta_6 \\
&+ R_s * SA_{st} * C_{ist} * B_{ist}\beta_7 + R_s * LA_{st} * C_{ist} * B_{ist}\beta_8 \\
&+ X_{ist}\lambda + \varepsilon_{ist},
\end{aligned}
\tag{3.16}
$$

where the coefficient of interest $R_s * LA_{st} * C_{ist} * B_{ist}$ describes the logged odds of the employment of high school dropouts among Black (unionized) construction workers in repeal states long after repeal. The differential impact of repeal by skill follows the same structure as equations 3.7 and 3.8 with the variable L_{ist} substituted for B_{ist} where L_{ist} is equal to 1 for laborers and 0 otherwise. The next section has details on occupational skill groupings.

3.7 Occupation-Based Skill Groupings

The standard approach used to compare occupations across industries relies on four occupational groups: craftsman and kindred (craftsman), operatives excluding transport (operatives), transport, and service workers.[14] In Table 3.2 I calculate the distribution of workers across these occupational groups for construction and non-construction workers for each of the three samples used in this dissertation.

[14] Typically this classification scheme also includes white-collar workers, but in this study white-collar workers are excluded from the analysis.

Table 3.2 Percentage of All Workers Classified as Craftsman, Operatives, Transport, and Service Workers

	Nonconstruction	Construction
May (1977-78), Org (1979-02)		
Craftsman & Kindred	23.6	71.1
Operatives	23.9	3.0
Transport	10.2	7.4
Laborers	10.4	18.0
Service	31.9	0.5
	100	100
May (1977-81), Org (1983-02)		
Craftsman & Kindred	23.6	71.2
Operatives	23.7	2.8
Transport	10.3	7.5
Laborers	10.5	18.0
Service	31.9	0.5
	100	100
March (1980-02)		
Craftsman & Kindred	21.5	69.0
Operatives	22.0	2.5
Transport	9.9	7.8
Laborers	11.0	20.1
Service	35.7	0.5
	100	100

Note: May refers to the May Supplement of the Current Population Survey (CPS), Org refers to the merged outgoing rotation groups of the CPS, and March refers to the March Supplement of the CPS.

In all three samples 89 percent of construction workers are classified as either craftsman or laborers. The vast majority of construction occupations 71, 71, and 69 percent respectively in our three samples are craftsman. This category mixes relatively high-skill occupations with relatively low-skill occupations like bricklayers and plasterers. I hypothesize that the effect of repeal on union membership, hourly wages, benefits coverage, and years of schooling will be different for electricians rather than for bricklayers.

To test this hypothesis I will aggregate the three-digit occupational codes in the CPS for workers self-reported as employed in the construction industry into five broad categories which I believe represent similar levels of skill. The first step in this classification involved allocating CPS occupation codes between 1977 and 2002 into 16 occupations which correspond to the well-established construction crafts plus a miscellaneous category labeled Other for all construction occupations I could not with confidence allocate to my 15 trades; the categories are as follows: asbestos, boilermakers, bricklayers, carpenters, electricians, elevators, iron workers, laborers, operating engineers, painters, plasterrers, plumbers, roofers, sheet metal, teamsters and other. I then aggregated these 16 categories into following five categories: high skill (electricians, elevators, iron workers, boilermakers, plumbers, and sheet metal), medium skill (carpenters, operating engineers, and teamsters), semiskill (asbestos, bricklayers, painters, plasterers, and roofers), laborers and other.

In all of my analysis of the impact of repeal, nonconstruction workers are used as control group and thus in my attempt to measure the differential impact of repeal by skill I face a limitation imposed by the absence of an identical set of nonconstruction skill

groupings. Because slightly less than 90 percent of construction workers are classified as either craftsman or laborers in the broad occupational controls included in equations 3.1 through 3.16, in my analysis by skill I limit the nonconstruction sample to these same two occupational groupings.

To capture the impact of repeal by skill I also limit the construction portion of my sample to compare laborers first relative to the most general higher skill group of construction workers craftsman, then to a narrower group of high-skill occupations, then to medium skill, and finally to semiskill construction occupations. In each comparison laborers are treated as the equivalent of nonconstruction laborers and nonconstruction craftsman as the equivalent to each of the other four higher-skilled construction occupational groups.

Table 3.3 summarizes the occupations included in each skill specification where L_{ist} is substituted for B_{ist} in equations 3.3, 3.4, 3.7, 3.8, 3.11, 3.12, 3.15 and 3.16 and is equal to 1 for laborers and 0 otherwise. In the first row labeled *vs. craftsman* I compare construction laborers relative to all construction occupations defined as craftsman. This specification is the one most comparable with those based on a full sample because it uses the same broad definition of occupations craftsman and laborers with the only difference from analysis on the full sample being the exclusion of all construction and nonconstruction occupations falling into the categories operatives, transport, and service workers. Using the broad group craftsman as the reference group mixes relatively higher-skilled construction occupations like electricians with relatively lesser-skilled occupations like painters. In the next three samples I parse the construction sample to compare my more narrowly defined skill groupings to one another. In the row labeled *vs.*

Table 3.3 Sample Selection for Comparison of the Effects of Repeal Upon Laborers

Laborer	**Construction**		**Nonconstruction**	
	Occupations Included	Occupations Excluded	Occupations Included	Occupations Excluded
vs. Craftsman	Asbestos, Boilermakers, Bricklayers, Carpenters, Electricians, Elevators, Iron workers, Operating Engineers, Painters, Plasterers, Plumbers, Roofers, Sheet Metal, Other	Asbestos, Carpenters, Iron workers, Operating Engineers, Painters, Teamsters, Other	Craftsman	Operatives, Transport, Service
vs. High Skill	Electricians, Elevator Constructors, Iron workers, Boilermakers, Plumbers, Sheet Metal	Carpenters, Operating Engineers, Teamsters, Asbestos, Bricklayers, Painters, Plasterers, Roofers, Other	Craftsman	Operatives, Transport, Service
vs. Medium Skill	Carpenters, Operating Engineers, Teamsters	Electricians, Elevator Constructors, Iron workers, Boilermakers, Plumbers, Sheet Metal, Asbestos, Bricklayers, Painters, Plasterers, Roofers, Other	Craftsman	Operatives, Transport, Service
vs. Semiskill	Asbestos, Bricklayers, Painters, Plasterers, Roofers,	Electricians, Elevator Constructors, Iron workers, Boilermakers, Carpenters, Operating Engineers, Teamsters, Plumbers, Sheet Metal, Other	Craftsman	Operatives, Transport, Service

Note: In the row labeled vs. Craftsman some occupations appear in both the included and excluded column because some of the three-digit occupations that I classified as asbestos, carpenters, iron workers, operating engineers, painters, teamsters and other fall in the craftsman category while others also classified as carpenters, iron workers, operating engineers and teamsters fall under the excluded groups operatives, transport, and service.

high skill I compare laborers to a more precisely higher-skilled set of construction occupations by limiting the construction portion of the sample to include only: electricians, elevator constructors, iron workers, boilermakers, plumbers, and sheet metal workers. In the row labeled *vs. medium skill* the construction occupations included in the reference group include only: heavy equipment operators (including operating engineers and teamsters) and carpenters.

Finally in the row labeled *vs. Semiskill* the construction portion of my sample includes only the occupations falling under the categories: asbestos, bricklayers, painters, plasterers, and roofers. This last group labeled semiskill is the closest in terms of actual skill to construction laborers. In order to boost sample size in the chapters which follow I will further aggregate the occupation-based skill groupings further by creating a new category low skill. Here as previously the nonconstruction portion of the sample is limited to include just laborers and craftsman. In the construction sample the new category low skill is a combination of laborers and the five semiskill occupations (asbestos, bricklayers, painters, plasterers, and roofers). Here nonconstruction laborers are considered the equivalent of low-skill construction occupations. I summarize the occupations included and excluded from the samples in Table 3.4 where LS_{ist} is substituted for B_{ist} in equations 3.3, 3.4, 3.7, 3.8, 3.11, 3.12, 3.15 and 3.16 and is equal to 1 for low skill occupations and 0 otherwise. In the first row *vs. craftsman* I again use the broadest category of high-skill occupations as the reference group. Different from Table 3.3, is that all of the three-digit construction occupations that fall under the group semiskill are now included with laborers in the category low skill. Otherwise the

Table 3.4 Sample Selection for Comparison of the Effects of Repeal Upon Low Skill Occupations (Laborers, Asbestos, Bricklayers, Painters, Plasterers and Roofers)

Low Skill (Laborers, Asbestos, Bricklayers, Painters, Plasterers, Roofers)	**Construction**		**Non Construction**	
	Occupations Included	Occupations Excluded	Occupations Included	Occupations Excluded
vs. Craftsman	Boilermakers, Carpenters, Electricians, Elevators, Iron workers, Operating Engineers Plumbers, Sheet Metal, Other	Asbestos, Carpenters, Iron workers, Operating Engineers, Painters, Teamsters, Other	Craftsman	Operatives, Transport, Service
vs. High Skill	Electricians, Elevator Constructors, Iron workers, Boilermakers, Plumbers, Sheet Metal	Carpenters, Operating Engineers, Teamsters	Craftsman	Operatives, Transport, Service
vs. Medium Skill	Carpenters, Operating Engineers, Teamsters	Electricians, Elevator Constructors, Iron workers, Boilermakers, Plumbers, Sheet Metal	Craftsman	Operatives, Transport, Service
vs. High Skill and Medium Skill	Electricians, Elevator Constructors, Iron workers, Boilermakers, Plumbers, Sheet Metal, Carpenters, Operating Engineers, Teamsters	Other	Craftsman	Operatives, Transport, Service

Note: In the row labeled *vs. Craftsman* some of the same occupations appear in both the included and excluded column because some of the three-digit occupations that I classified as carpenters, iron workers, operating engineers, teamsters fall in the craftsman category while still others also classified as carpenters, iron workers, operating engineers and teamsters fall under the excluded groups operatives, transport and service.

construction craftsman reference group is the same as in Table 3.3. The next three rows *vs. high skill*, *vs. medium* and *vs. high and medium* are self explanatory.

CHAPTER 4

UNION DENSITY

4.1 Introduction

Ironically, although all examinations of prevailing wage law repeals have implicitly assumed that a primary effect was the decline of collective bargaining and union density, this presumed fact has never been shown. The primacy of this question – the effect of prevailing wage law repeals on collective bargaining – is rooted in the proposition that the presence or absence of collective bargaining determines the way construction labor markets are organized and how they develop. Collective bargaining provides a contractual framework wherein the parties can provide for training, establish portable benefit systems, and help create human capital preserving careers in what would otherwise be casual labor markets with not only little firm attachment but also less attachment to the industry as a whole. This chapter will answer the question do prevailing wage law repeals lead to the diminution of collective bargaining (as measured by union density) and, if so, is there a difference in this decline either by skill or race.

4.2 Union Membership and State Prevailing Wage Laws

Allen (1988) finds that overall construction union density declined from slightly less than half in 1966 to less than a third in 1983. The analysis examines the trend in

union density between 1977 and 2002. Starting in 1979 and ending in 1988, nine states repealed their state prevailing wage laws. In addition, in 1995, Oklahoma's prevailing wage law was judicially annulled; Michigan's law was suspended between 1994 and 1997. Table 4.1 shows that union density – a measure of the presence of collective bargaining in construction – has fallen since 1977. Here union density is compared before and after the period of repeals in the following three categories: law states (law) are those that would maintain a state prevailing wage law between 1977 and 2002,[1] repeal states (repeal) are those states that repealed their prevailing wage law at anytime between 1977 and 2002, and finally states that did not have a prevailing wage law at anytime during the period of analysis (never).

In states with prevailing wage laws, unionization has been and remains the highest, and the practice of collective bargaining has fallen the least. In states that did not have a law during the entire period, union density is and has been the lowest. In states that had prevailing wage laws in 1979 but repealed or annulled them by the end of the 1990s, the prevalence of collective bargaining declined the most. In short, prevailing wage regulations support collective bargaining, and their absence discourages collective bargaining.

Table 4.1 Construction Union Density before and after Repeal

	Law	Repeal	Never
Before Repeal (1977)	46.4	28.9	19.8
After Repeal (2002)	26.7	8.9	6.5
Percent Change	-42.5	-69.1	-67.0

Note: Michigan suspended its Prevailing Wage Law between 1994 and 1997 and thus is a law state in 1977 and 2002.

[1] Michigan suspended its prevailing wage law between 1994 and 1997 and thus is treated as a law state.

The general story of union density in the post-World War II period is one of decline with union density falling from a high of 35.5 percent in 1945 to a low of 13.2 percent in 2002 (Katz and Kochan 2004). Underlying this overall pattern there is also a substantial degree of variation in union density by state and region. Falling union density within the construction industry and across repeal states is symptomatic in part of an overall negative environment for organized labor in these states.

To what extent is the pattern of change in construction union density in states that repealed prevailing wage laws a reflection of broader regional trends in union density? Table 4.2 estimates the difference in union density arising from repeal after adjusting for the pattern of change in union density observed outside of the construction industry. The table classifies a state as an experimental state if it repealed its prevailing wage law in the period between 1979 and 2002 and classifies all other states including both states with a prevailing wage law as well as those that never had a law as nonexperimental states.[2] Union density within construction declined by 69 percent in experimental states and falling by just 44 percent in nonexperimental states. Considering just these trends there was a relative decline in construction union density of 25 percent in experimental states. Outside of construction, there was a relative decline in union density for workers living in experimental states of 10 percent. Given the trend in union density among the control group, the relative decline in construction union density over and above regional patterns was 15 percent.

[2] Compared to the results presented in Table 4.1, adjusting for trends outside of construction, as well as lumping together trends in law and never law states, should reduce the magnitude of the decline in union density resulting from repeal.

Table 4.2 Union Density before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
		Treatment Group: Construction				
28.9	8.9	-69.08	42.1	23.5	-44.21	-24.87
		Control Group: Nonconstruction				
21.4	7.1	-66.97	34.8	14.9	-57.10	-9.86
					Simple Difference in Difference in Difference	-15.01

Note: See Table 4.1.

4.3 Union Membership by Race

The long, troubled history of race relations within the construction industry requires that my examination measure the impact of repeal on union density by race. From Table 4.3, union density among Black construction workers living in law states fell the least when compared to all other groups in all three legal environments. In contrast, within repeal states union density for Blacks declined by 73 percent compared to a decline of 68 percent for non-Blacks. Is this differential unique to construction or is it a reflection of broader regional trends?

Table 4.4 compares trends in Black and non-Black construction union density after adjusting for trends in union density outside of construction. After adjusting for trends outside the industry, Black construction workers living in experimental states experienced a 17 percent decline in union density over the period of analysis; making the

Table 4.3 Construction Union Density before and after Repeal by Race

	Law	Repeal	Never
		Black	
Before Repeal (1977)	49.6	36.1	27.2
After Repeal (2002)	31.3	9.6	4.9
Percent Change	-36.9	-73.3	-81.8
		Non Black	
Before Repeal (1977)	46.2	27.9	18.2
After Repeal (2002)	26.4	8.9	6.8
Percent Change	-42.8	-68.2	-62.7

Note: See Table 4.1.

Table 4.4 Union Density before and after Repeal by Industry and Race

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
			Black			
			Treatment Group: Construction			
36.1	9.6	-73.31	41.5	23.0	-44.63	-28.67
			Control Group: Nonconstruction			
20.4	7.4	-63.85	35.7	17.1	-52.24	-11.61
					Difference in Difference in Difference	-17.06
			Non Black			
			Treatment Group: Construction			
27.9	8.9	-68.19	42.2	23.5	-44.19	-24.00
			Control Group: Nonconstruction			
21.6	7.0	-67.55	34.7	14.6	-57.98	-9.57
					Difference in Difference in Difference	-14.43
					Difference in Difference in Difference in Difference	-2.63

Note: See Table 4.1.

same adjustment for trends outside of construction, union density among non-Blacks living in experimental states declined by just 14.4 percent. The decline in union density for Black construction workers was larger by 2.6 percentage points. Although small, any difference is unexpected. Can the differential effect of repeal on union density by race be explained in part through occupation-based skill differences?

4.4 Union Membership by Skill

As discussed in Chapter 1 it is our expectation that the magnitude of the reduction in union density associated with repeal will differ according to skill level with union density falling more among relatively low-skill occupations than among higher-skilled occupations. Table 4.5 explores the impact of repeal on union density among different skill categories and across three legal regimes. Union density among high-skill[3] occupations declined by the same amount in both repeal and law states.

However in repeal states lesser-skilled occupations experienced a larger decline in union density rather than in law states over the period of analysis. For example, among workers defined as medium skill, which includes carpenters and heavy equipment operators (operating engineers and teamsters), union density in repeal states declined by 68 percent compared to just 45 percent in law states. Among semiskill construction occupations, which includes occupations like painters, plasterrers, roofers, asbestos, and bricklayers, union density in repeal states declined by 85 percent compared to just 58

[3] High-skill construction occupations include electricians, elevators, iron workers, boilermakers, plumbers and sheet metal workers.

Table 4.5 Construction Union Density Before and After Repeal by Skill

	Law	Repeal	Never
		High Skill	
Before Repeal (1977)	57.1	31.3	33.1
After Repeal (2002)	41.6	22.8	12.6
Percent Change	-27.2	-27.0	-61.9
		Medium Skill	
Before Repeal (1977)	44.0	22.1	19.3
After Repeal (2002)	24.4	7.0	5.3
Percent Change	-44.6	-68.4	-72.7
		Semiskill	
Before Repeal (1977)	45.5	28.2	10.1
After Repeal (2002)	19.2	4.3	4.4
Percent Change	-57.7	-84.6	-56.4
		Laborers	
Before Repeal (1977)	40.5	30.9	21.9
After Repeal (2002)	20.9	4.4	3.4
Percent Change	-48.4	-85.8	-84.6
		Other	
Before Repeal (1977)	43.4	47.0	17.2
After Repeal (2002)	23.8	6.1	7.5
Percent Change	-45.2	-87.0	-56.6

Note: Skill category labeled Other includes all individuals in blue-collar occupations not traditionally considered construction occupations but who self-reported in the Current Population Survey that they were employed in the construction industry.

percent in law states. Finally among laborers in repeal states union density declined by 86 percent compared to just 48 percent in Law states.

As explained in Chapter 3, when comparing trends among my construction skill groups high skill, medium skill and semiskill to nonconstruction workers I will assume that each of these groups is the equivalent of nonconstruction craftsman and kindred (craftsman). Union density among high skill construction occupations (Table 4.6) actually declined by less in experimental states than it did in nonexperimental states.[4] After controlling for trends in union density outside of construction, this relative gain in union membership for highly skilled workers increases to 10.8 percent.[5] Among medium-skill construction occupations union density in experimental states declined relative to nonexperimental states by 21 percent between 1977 and 2002. Adjusting this difference to reflect the change in union density outside of construction among craftsman, medium skill union density falls by 13 percent.

Table 4.7 shows union membership among semiskill construction occupations in experimental states declined relative to the same group in nonexperimental states by 28 percent. Again adjusting for trends across these same state groupings, union density among semiskill construction workers declined relative to all other groups by 20 percent. Finally for construction laborers there is a decline in union density relative to construction laborers in nonexperimental states of 35 percent. After controlling for trends among laborers outside of construction the relative reduction in union density

[4] Referring back to Table 4.5 it is clear that the relative gain in union density for workers in Experimental states is driven to a large extent by defining non Experimental states to include workers living in states that did not have a prevailing wage law at any time between 1977 and 2002.

[5] We suspect that this estimate is actually high due to the fact that we are comparing a set of highly skilled construction occupations to a mixture differently skilled non construction occupations in the *Craftsman* category.

Table 4.6 High and Medium Skill, Union Density before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
High Skill						
Treatment Group: Construction						
31.27	22.82	-27.03	53.79	37.69	-29.94	2.90
Control Group: Nonconstruction (**Craftsman & Kindred**)						
28.24	11.55	-59.10	40.51	19.79	-51.14	-7.96
			Difference in Difference in Difference			10.87
Medium Skill						
Treatment Group: Construction						
22.13	7.00	-68.38	40.50	21.33	-47.34	-21.04
Control Group: Nonconstruction (**Craftsman & Kindred**)						
28.24	11.55	-59.10	40.51	19.79	-51.14	-7.96
			Difference in Difference in Difference			-13.08

Table 4.7 Semiskill and Laborers, Union Density before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Semiskill						
Treatment Group: Construction						
28.25	4.34	-84.62	39.00	16.79	-56.96	-27.66
Control Group: Nonconstruction (**Craftsman & Kindred**)						
28.24	11.55	-59.10	40.51	19.79	-51.14	-7.96
			Difference in Difference in Difference			-19.70
Laborers						
Treatment Group: Construction						
30.91	4.39	-85.81	37.23	18.31	-50.83	-34.98
Control Group: Nonconstruction (Laborers)						
28.18	8.14	-71.12	43.60	17.30	-60.33	-10.79
			Difference in Difference in Difference			-24.19

falls to 24 percent. Generally there is evidence that repeal reduces union density among lesser-skilled occupations while having little or no additional impact on union density among the most highly skilled construction occupations.

4.5 Race and Occupation

How much of the difference in the impact of repeal upon Black union membership can be explained through the differences in the concentration of Black construction workers in the occupational groups? To simplify the presentation, I have consolidated our five categories of skill into just three: high / med skill, semi / laborer and other. In Table 4.8, the share of construction workers employed in experimental states as laborers or in other semiskill occupations increased from 36 percent to 40 between 1977 and 2002. Contrary to this overall increase in the share of construction laborers, in Table 4.9 the share of Blacks employed in experimental states as laborers or in other semiskill occupations decreased from 80 percent in 1977 to 50 percent in 2002 – a decline of 37 percent.

The next question is how the 37 percent decrease in the share of Black laborers and semiskill workers is distributed across the union and nonunion sectors. In Table 4.10 I calculate the skill composition of the union and nonunion labor force by race. In 1977, 94 percent of Black union members working within the construction industry of experimental states were either laborers or in one of the semiskill construction occupations, the share of this group had dropped to 42 percent by 2002. The high concentration of Blacks in relatively less-skilled construction occupations prior to repeal

Table 4.8 The Share of Construction Workers Employed in Experimental and Nonexperimental States by Skill 1977 and 2002

Year	High / Med Row %	Semi / Laborer Row %	Other Row %
	Experimental		
1977	54.0	36.2	9.8
2002	45.6	40.2	14.1
% Δ	-15.5%	11.1%	44.3%
	Nonexperimental		
1977	56.6	35.1	8.3
2002	49.9	36.8	13.3
% Δ	-11.8%	4.7%	60.2%

Table 4.9 The Share of Construction Workers Employed in Experimental and Nonexperimental States by Skill and Race 1977 and 2002

	Experimental States					
	Non-Black			Black		
Year	High / Med Row %	Semi / Laborer Row %	Other Row %	High / Med Row %	Semi / Laborer Row %	Other Row %
1977	58.6	30.3	11.1	20.3	79.7	0.0
2002	45.9	39.4	14.6	42.1	50.5	7.3
% Δ	-21.6%	30.1%	31.9%	107.4%	-36.6%	
	Nonexperimental States					
Year	Row %	Row %	Row %	Row %	Row %	Row %
1977	58.3	33.3	8.4	37.4	55.9	6.8
2002	50.0	36.5	13.5	48.7	40.6	10.8
% Δ	-14.2%	9.6%	59.9%	30.3%	-27.4%	58.7%

Table 4.10 The Share of Construction Workers Employed in Experimental and Nonexperimental States by Skill, Race and Union Membership 1977 and 2002

Year	Non-Black			Black		
	High/Med Skill	Semi / Laborer	Other	High/Med Skill	Semi / Laborer	Other
	Union					
	Experimental States					
1977	54.2	27.1	18.7	6.2	93.8	0.0
2002	71.7	17.8	10.5	58.3	41.7	0.0
% Δ	32.4%	-34.4%	-43.9%	838.4%	-55.6%	
	Nonunion					
1977	60.3	31.5	8.2	28.3	71.7	0.0
2002	43.4	41.5	15.0	40.4	51.5	8.1
% Δ	-28.0%	31.7%	84.5%	42.9%	-28.2%	
	Nonexperimental States					
	Union					
1977	62.9	29.7	7.3	34.5	56.8	8.8
2002	61.7	26.6	11.7	49.6	40.3	10.2
% Δ	-2.0%	-10.6%	60.5%	43.7%	-29.0%	0.2
	Nonunion					
1977	54.8	35.9	9.2	39.4	55.2	5.4
2002	46.4	39.6	14.0	48.4	40.7	10.9
% Δ	-15.4%	10.2%	51.6%	22.9%	-26.4%	103.6%

suggests why repeal reduced construction union density more for Blacks than for non-Blacks.

Table 4.11 emphasizes the dramatic nature of the decline in union density among Black laborers by presenting the share of all Blacks employed as union laborers in 1977 and 2002. In 1977 a third of all Blacks employed in construction were members of the laborers union, but by 2002 they represented only 4 percent of all Blacks employed in the construction industry.

4.6 Regression Analysis

4.6.1 All construction workers.

Table 4.12 presents the coefficients, standard errors, and the percent change in odds[6] from a binary logistic regression with union membership as the dependent variable and the sample limited to workers employed in the construction industry. In all specifications, control variables for human capital, time, and state-fixed effects are included in the model but not reported in the tables. In the first column the focus variable is the interaction term *Repeal State*After Repeal* which identifies workers in repeal states a year or more after repeal.[7] Although the odds of a construction worker being a member of a labor union were 5 percent lower a year or more after repeal, this effect is not different from zero. Columns 2 and 3 of Table 4.12 distinguish between shortly after repeal and long after repeal. In column 2, one to two years following repeal (shortly after) the odds of union membership increase by 22 percent, but three or more years after repeal they decrease by 17 percent. The lack of

[6] The odds ratio is calculated by taking the exponent of the regression coefficient ($e\beta$). The percent change in the odds is calculated as follows: $(e\beta-1)*100$.
[7] Unless otherwise specified repeal will refer to repeal, annulment, and suspension.

Table 4.11 Changes in the Union Membership Experimental and Nonexperimental States by Race and Skill 1977 and 2002

	High / Med Skill		Semi / Laborer		Other	
	Nonunion	Union	Nonunion	Union	Nonunion	Union
	Experimental States					
	Black					
Year	Row %	Row %	Row %	Row %	Row %	Row %
1977	18.1	2.2	45.8	33.8	0.0	0.0
2002	36.5	5.6	46.5	4.0	7.3	0.0
% Δ	102.1%	150.5%	1.5%	-88.1%		
	Non-Black					
Year	Row %	Row %	Row %	Row %	Row %	Row %
1977	43.5	15.1	22.7	7.6	5.9	5.2
2002	39.6	6.4	37.8	1.6	13.7	0.9
% Δ	-9.0%	-57.9%	66.4%	-79.1%	133.2%	-82.2%
	Nonexperimental States					
	Black					
Year	Row %	Row %	Row %	Row %	Row %	Row %
1977	23.0	14.3	32.3	23.6	3.1	3.6
2002	37.3	11.4	31.3	9.3	8.4	2.3
% Δ	61.9%	-20.4%	-3.1%	-60.7%	168.1%	-35.7%
	Non-Black					
Year	Row %	Row %	Row %	Row %	Row %	Row %
1977	31.7	26.6	20.8	12.5	5.3	3.1
2002	35.5	14.5	30.3	6.3	10.7	2.8
% Δ	11.9%	-45.3%	45.7%	-50.1%	100.5%	-10.4%

Table 4.12 Construction Only, Effects of State Prevailing Wage Law Repeal on Union Membership 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal	-0.053		
	0.044		
	-5.18%		
Repeal State*Long After Repeal		-0.183***	-0.222***
		0.049	0.052
		-16.69%	-19.91%
Repeal State*Shortly After Repeal		0.197***	0.161***
		0.059	0.059
		21.81%	17.49%
N	136,599	136,599	136,599

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients followed by the percent change in odds. The percent change in the odds is calculated as follows: (eβ-1)*100. Data set drawn from May (1977-81) and Outgoing Rotations (1983-02) of the Current Population Survey. All specifications control for time and state fixed effects. In column 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is three or more years, "shortly after repeal" is one to two years. In column 3 "long after repeal" is five or more years, "shortly after repeal" is one to four years. Observations weighted using CPS weights.

significance in column 1 is thus explained by the mixing of these divergent short- and long-run trends. Stretching out the short run to include one to four years following repeal the odds of union membership increase by 18 percent. In the long run which is now defined as five or more years following repeal the odds of union membership decline by 20 percent leading to an absolute negative effect of repeal on the odds of union membership of 6 percent.

The coefficients reported in Table 4.13 are based upon a full sample of construction and nonconstruction workers. In addition to the controls already mentioned all specifications include controls for *time*construction* fixed effects. In the first two specifications, the focus variable is the interaction term *Repeal State * After*

Table 4.13 Effects of State Prevailing Wage Law Repeal on Union Membership 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	-0.091 **	-0.064		
	0.037	0.047		
	-8.68%	-6.18%		
Repeal State*After Repeal	0.021	0.024		
	0.017	0.018		
	2.15%	2.40%		
Repeal State*Long After Repeal*Construction			-0.173 ***	-0.222 ***
			0.052	0.056
			-15.87%	-19.88%
Repeal State*Shortly After Repeal*Construction			0.162 ***	0.154 **
			0.063	0.063
			17.57%	16.65%
Repeal State*Long After Repeal			0.003	0.014
			0.020	0.022
			0.33%	1.44%
Repeal State*Shortly After Repeal			0.052 **	0.035
			0.023	0.025
			5.33%	3.60%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	1,236,632	1,236,632	1,236,632	1,236,632

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-81) and Outgoing Rotations (1983-02) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. In columns 1 and 2 "after repeal" is defined as the year following repeal. In column 3, "long after repeal" is three or more years, "shortly after repeal" is one to four years. In column 4 "long after repeal" is five or more years, "shortly after repeal" is one to four years. Observations weighted using CPS weights.

*Repeal*Construction* which identifies construction workers in repeal states a year or more after repeal. In Column 1, the odds of a construction worker being a member of a labor union were 9 percent lower after repeal. In Column 2, after including an interaction term for each states construction labor market the negative effect of repeal is no longer statistically different from 0. Columns 3 and 4 keep the state*construction interactions but divide the period following repeal into a short-run and long-run effect. One to two years following repeal (Column 3, *Shortly After Repeal*) the odds of union membership increase by 18 percent. Three or more years following repeal the odds of union membership decline by 16 percent. Considering the long and short run effects together the odds of membership decline by 1 percent. When the short run is redefined as one to four years following repeal the positive impact of repeal on the odds of union membership is reduced to 17 percent. Five or more years following repeal the odds of union membership decline by 20 percent; considering both effects repeal lowers the odds of membership by 7 percent. I interpret the short-run boost of repeal on union membership as the result of increased organizing driven by the political shock of what in most cases is a widely known (within the building trades at least) legislative loss.

4.6.2 Union membership by race. Table 4.14 presents the coefficients estimated for equations 3.1 and 3.2 where I test for the presence of a differential impact of repeal by race. As a preliminary to the full model, the coefficients estimated here are based on sample limited to include only construction workers. In Column 1, the coefficient measuring the impact of repeal on the odds membership for all construction workers (Black and non-Black) is insignificant. This result is consistent with the coefficient in

Table 4.14 Construction Only, Effects of State Prevailing Wage Law Repeal on Union Membership by Race 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Black	-0.542***		
	0.147		
	-41.84%		
Repeal State*After Repeal	-0.005		
	0.047		
	-0.48%		
Repeal State*Long After Repeal*Black		-0.331**	-0.276*
		0.159	0.165
		-28.17%	-24.15%
Repeal State*Shortly After Repeal*Black		-1.004***	-1.212***
		0.229	0.223
		-63.36%	-70.23%
Repeal State*Long After Repeal		-0.159***	-0.196***
		0.052	0.055
		-14.66%	-17.81%
Repeal State*Shortly After Repeal		0.278***	0.260***
		0.061	0.062
		32.06%	29.71%
State*Construction Fixed Effects	Yes	Yes	Yes
N	136,599	136,599	136,599

Note: See note in Table 4.12

Column 2 of Table 4.13 where in the presence of state-fixed effects I find no relative difference in union density for construction workers compared to all other workers. A year or more after repeal the odds of union membership for Black construction workers decreased relative to non-Black construction workers by 42 percent.

In Column 2, S*hortly After Repeal*, the odds of membership for all construction workers increased by 32 percent. In the same column *Long After Repeal* the odds of union membership decrease by 15 percent. Still in column 2, three or more years after repeal the odds of union membership for Black construction workers decline relative to

non-Blacks by 29 percent. In column 3 the period shortly after repeal is defined as one to four years and the period long after is five or more years after repeal. Long after, the odds of union membership for all construction workers decrease by 18 percent. Likewise, long after repeal the odds of membership for Black construction workers declined relative to non-Blacks by 24 percent.

Table 4.15 presents the coefficients estimating the impact of repeal estimated from a full sample of construction and nonconstruction workers. In column 1, the coefficient on the interaction term identifying the odds of all construction workers (Black and non-Black) being union members is insignificant. However a year or more following repeal the odds of union membership for Black construction workers decrease relative to non-Blacks by 58.2 percent. Switching to the short- and long-run specifications in columns 2 and 3 the addition of the nonconstruction strengthens the results found in the previous table. In the first two years following repeal all the odds of union membership for all construction workers increase by 32.6 percent, but three years or more after repeal the odds of union membership for all construction workers decline by 10.4 percent. The short- and long-run effects for Black construction workers are both negative with the odds of union membership decreasing in the short run by 72.6 percent and by another 49 percent in the long run. In column 3 in the four years following repeal the odds of union membership for all construction workers increase by 34 percent. This trend reverses five or more years after repeal with the odds of union membership decreasing by 13 percent for all construction workers. For Black union membership the short- and long-run odds of union membership decrease, by 79 percent in the first four years and 52.9 percent five or more years after repeal.

Table 4.15 Effects of State Prevailing Wage Law Repeal on Union Membership by Race 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Black	-0.872 ***		
	0.154		
	-58.17%		
Repeal State*After Repeal*Construction	0.024		
	0.050		
	2.41%		
Repeal State*After Repeal*Black	0.326 ***		
	0.047		
	38.51%		
Repeal State*After Repeal	-0.035 *		
	0.019		
	-3.39%		
Repeal State*Long After Repeal*Construction*Black		-0.674 ***	-0.753 ***
		0.167	0.174
		-49.04%	-52.90%
Repeal State*Shortly After Repeal*Construction*Black		-1.295 ***	-1.562 ***
		0.234	0.231
		-72.62%	-79.02%
Repeal State*Long After Repeal*Construction		-0.110 **	-0.137 **
		0.056	0.060
		-10.43%	-12.80%
Repeal State*Shortly After Repeal*Construction		0.282 ***	0.294 ***
		0.066	0.067
		32.59%	34.19%
Repeal State*Long After Repeal*Black		0.330 ***	0.458 ***
		0.054	0.058
		39.15%	58.08%
Repeal State*Shortly After Repeal*Black		0.322 ***	0.361 ***
		0.061	0.067
		37.99%	43.49%
Repeal State*Long After Repeal		-0.057 **	-0.067 ***
		0.022	0.024
		-5.56%	-6.48%
Repeal State*Shortly After Repeal		-0.003	-0.031
		0.025	0.027
		-0.33%	-3.02%
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,236,632	1,236,632	1,236,632

Note: In column 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is three or more years, "shortly after repeal" is one to two years. In column 3 "long after repeal" is five or more years, "shortly after repeal" is one to four years. See note in Table 4.13.

4.6.3 Union membership by skill. As discussed in Chapter 3, to measure the effect of repeal on different occupation-based skill groups I generate several samples where laborers are compared to four higher skilled reference groups. As defined in Table 3.1 of Chapter 3 these four groups will be labeled in the following tables as: *vs. Craftsman*, *vs. High Skill*, *vs. Medium Skill* and *vs. Semiskill*. Table 4.16 measures the impact of repeal on union density a year or more after repeal for each of these groups. Each reference group includes nonconstruction workers who, based upon three-digit occupation codes from the 1970 and 1980 census, have been classified as either craftsman or laborers. Outside of construction those occupations classified as operatives, transport, or service workers were excluded from the analysis.

The first sample, which is labeled *vs. Craftsman*, includes a wide array of construction occupations mixing relatively less-skilled occupations like roofers and carpenters with more highly skilled occupations like iron workers and electricians. A year or more after repeal the odds of union membership for all construction workers (craftsman and laborers) increase by 11 percent. Relative to craftsman however the odds of union membership for construction laborers declined by 53 percent after repeal. In the column labeled *vs. High Skill* the reference group within the building trades is limited to include only electricians, elevator constructors, iron workers, plumbers and pipefitters, roofers, boilermakers and sheetmetal workers. With this more precise definition of high-skill workers stronger evidence emerges that negative effect of repeal falls more heavily upon less-skilled laborers than it does on the more highly skilled trades. The odds of union membership for all construction workers increase by 58 percent a year or

Table 4.16 Effects of State Prevailing Wage Law Repeal a Year or more after Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	After Repeal = a year or more			
	Vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semiskill*
Repeal State*After Repeal*Construction***Laborer**	-0.750***	-1.119***	-0.613***	-0.300*
	0.141	0.160	0.157	0.173
	-52.78%	-67.32%	-45.82%	-25.93%
Repeal State*After Repeal*Construction	0.106*	0.460***	-0.039	-0.341***
	0.060	0.092	0.088	0.114
	11.23%	58.42%	-3.82%	-28.92%
Repeal State*After Repeal***Laborer**	0.187***	0.183***	0.183***	0.182***
	0.061	0.061	0.061	0.061
	20.53%	20.05%	20.03%	19.93%
Repeal State*After Repeal	-0.023	-0.021	-0.019	-0.020
	0.031	0.031	0.031	0.031
	-2.25%	-2.04%	-1.89%	-1.94%
N	495,732	425,121	438,446	423,201

Note: ***, ** and * indicate significance at the 1, 5, and 10 percent levels respectively. Reported below the coefficients are standard errors followed by the percent change in the odds (eβ-1)*100. Data set drawn from May (1977-81) and Outgoing Rotations (1983-2002) of the Current Population Survey. All specifications control for time, time*construction, state and state*construction fixed effects. The nonconstruction portion of the sample includes only workers classified as Laborers or Craftsmen. The construction portion of the sample in each column compares the experience of *laborers* to a reference group of more highly skilled construction occupations. In the column labeled *vs. high skill* the reference group includes electricians, boilermakers, elevator constructors, iron workers, plumbers and pipefitters, and sheetmetal workers. In the column labeled *vs. medium skill* the reference group includes carpenters and heavy equipment operators (operating engineers and teamsters). In the column labeled *vs. semiskill* the reference group includes asbestos workers, brick layers, painters, plasters and roofers. Observations weighted using CPS weights.

more after repeal whereas the odds of union membership for laborers over the same time period decline by 67 percent. In this simple *difference in difference in difference* analysis in Tables 4.6 and 4.7 I did find high-skill union density increased relative to laborers. In the column labeled *vs. Medium Skill* the reference group excludes all construction occupations except carpenters and heavy equipment operators (operating engineers and teamsters). Here the effect of repeal on all construction workers is no longer positive or significant. What does remain is a negative and significant coefficient, although somewhat smaller in magnitude on the interaction term for Laborers. Here the odds of union membership for laborers decline by 46 percent. As in Tables 4.6 and 4.7 although union membership among medium-skill construction occupations declined relative to high skill, they did do better in relative terms than construction Laborers. In the final column of Table 4.16 the reference group includes the semiskill construction occupations: asbestos workers, boilermakers, bricklayers, painters, plasterers and roofers. A year or more after repeal the odds of union membership for all construction occupations (semiskill and laborers) declined by 29 percent. The odds of union membership for laborers also declined relative to the semiskill construction workers by 26 percent.

Tables 4.17 and Table 4.18 describe the effect of repeal shortly after and long after repeal for each of the skill groupings I have already described. As the results are very similar across both tables I will comment here only on the results presented in Table 4.18 where the short run is defined as one to four years after repeal and the long run is five or more years after repeal. In the column labeled vs. *Craftsman* the coefficient

Table 4.17 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	Long After Repeal = three or more years			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semiskill*
Repeal State*Long After Repeal*Construction***Laborer**	-1.021 ***	-1.377 ***	-0.890 ***	-0.605 ***
	0.160	0.180	0.178	0.196
	-63.98%	-74.77%	-58.92%	-45.37%
Repeal State*Shortly After Repeal*Construction***Laborer**	-0.317 *	-0.789 ***	-0.211	0.145
	0.178	0.206	0.202	0.228
	-27.16%	-54.56%	-19.04%	15.64%
Repeal State*Long After Repeal*Construction	-0.034	0.303 ***	-0.164 *	-0.438 ***
	0.067	0.100	0.098	0.127
	-3.29%	35.35%	-15.09%	-35.45%
Repeal State*Shortly After Repeal*Construction	0.364 ***	0.776 ***	0.204 *	-0.142
	0.081	0.125	0.118	0.159
	43.95%	117.28%	22.58%	-13.20%
Repeal State*Long After Repeal***Laborer**	0.223 ***	0.223 ***	0.218 ***	0.217 ***
	0.070	0.070	0.070	0.071
	25.01%	24.97%	24.32%	24.18%
Repeal State*Shortly After Repeal***Laborer**	0.136 *	0.135 *	0.133 *	0.132 *
	0.080	0.080	0.080	0.080
	14.56%	14.45%	14.19%	14.15%
Repeal State*Long After Repeal	-0.012	-0.012	-0.013	-0.014
	0.036	0.036	0.036	0.036
	-1.20%	-1.14%	-1.33%	-1.40%
Repeal State*Shortly After Repeal	-0.032	-0.030	-0.028	-0.028
	0.041	0.041	0.041	0.041
	-3.14%	-2.97%	-2.78%	-2.80%
N	495,732	426,714	438,446	423,201

Note: See Table 4.16.

Table 4.18 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	Long After Repeal = five or more years			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semiskill*
Repeal State*Long After Repeal*Construction***Laborer**	-1.120***	-1.579***	-0.964***	-0.624***
	0.170	0.190	0.189	0.207
	-67.38%	-79.38%	-61.87%	-46.43%
Repeal State*Shortly After Repeal*Construction***Laborer**	-0.873***	-1.322***	-0.861***	-0.358
	0.190	0.215	0.214	0.237
	-58.25%	-73.35%	-57.71%	-30.08%
Repeal State*Long After Repeal*Construction	-0.021	0.422***	-0.173*	-0.502***
	0.071	0.107	0.104	0.134
	-2.12%	52.50%	-15.90%	-39.48%
Repeal State*Shortly After Repeal*Construction	0.401***	0.755***	0.308***	-0.172
	0.081	0.121	0.119	0.156
	49.33%	112.85%	36.03%	-15.82%
Repeal State*Long After Repeal***Laborer**	0.304***	0.304***	0.298***	0.296***
	0.076	0.076	0.076	0.076
	35.51%	35.55%	34.66%	34.45%
Repeal State*Shortly After Repeal***Laborer**	0.234***	0.235***	0.227***	0.223***
	0.086	0.086	0.086	0.086
	26.40%	26.50%	25.43%	24.98%
Repeal State*Long After Repeal	-0.048	-0.047	-0.048	-0.049
	0.038	0.038	0.038	0.038
	-4.64%	-4.60%	-4.72%	-4.76%
Repeal State*Shortly After Repeal	-0.033	-0.031	-0.030	-0.029
	0.044	0.044	0.044	0.044
	-3.21%	-3.05%	-2.92%	-2.87%
N	495,732	426,714	438,446	423,201

Note: See Table 4.16.

for the change in the odds of union density for construction workers relative to non-construction workers (craftsman and laborers) is not statistically different from 0. For laborers five or more years after repeal the odds of union membership decrease by 67 percent relative to all other construction workers. Altering the reference to include only the highest skilled construction occupations (vs. *High Skill*) more clearly delineates the disparate relative effects of repeal on union membership. Long after repeal the odds of union membership for all construction workers (high skill and laborers) increase by 53 percent relative to all nonconstruction workers. When laborers are compared to this higher-skill reference group the magnitude of the effect grows from the previous column with the odds of union membership among laborers in the long run decreasing by 79 percent.

In the column labeled *vs. Medium Skill*, relative to non construction workers the odds of union membership for all construction workers decline by 16 percent while the odds of union membership for laborers relative to all other construction workers included in the sample declines by 62 percent.

In the column labeled *vs. Semiskill*, relative to nonconstruction workers the odds of union membership for the construction workers included in the sample decline by 40 percent. Finally, five or more years after repeal the odds of union membership among laborers declines relative to semiskill construction occupations by 46 percent. Overall as laborers are compared to each skill grouping, the more skilled the reference group, the larger the percent decline in the odds of union membership among laborers.

4.6.4 Union membership by skill and race. Tables 4.19 through 4.23 explore the impact of repeal on union membership by skill after dividing the sample into Black and

Table 4.19 A Year or More after Repeal, Effects of State Prevailing Wage Law Repeal on Union Membership by Skill and Race 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	After Repeal = a year or more			
	Low Skill			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. High and Medium Skill*
	BLACK			
Repeal State*After Repeal*Construction*Low Skill	-0.973 **	-0.353	-0.884 *	-0.697 *
	0.388	0.539	0.471	0.387
	-62.19%	-29.72%	-58.70%	-50.21%
Repeal State*After Repeal*Construction	-0.291	-0.668	-0.151	-0.33
	0.287	0.476	0.399	0.295
	-25.22%	-48.72%	-13.99%	-28.11%
Repeal State*After Repeal*Low Skill	0.218	0.219	0.222	0.22
	0.175	0.175	0.174	0.175
	24.37%	24.45%	24.86%	24.62%
Repeal State*After Repeal	0.148	0.149	0.149	0.146
	0.111	0.111	0.111	0.111
	15.97%	16.03%	16.10%	15.68%
N	38,615	36,809	37,600	38,701
	non-BLACK			
Repeal State*After Repeal*Construction*Low Skill	-0.739 ***	-0.929 ***	-0.444 ***	-0.695 ***
	0.129	0.143	0.14	0.127
	-52.23%	-60.49%	-35.85%	-50.09%
Repeal State*After Repeal*Construction	0.245 ***	0.464 ***	-0.016	0.226 ***
	0.067	0.094	0.09	0.068
	27.71%	59.01%	-1.60%	25.36%
Repeal State*After Repeal*Low Skill	0.121 *	0.121 *	0.121 *	0.122 *
	0.067	0.067	0.067	0.067
	12.91%	12.90%	12.83%	13.01%
Repeal State*After Repeal	-0.04	-0.04	-0.039	-0.04
	0.033	0.033	0.033	0.033
	-3.88%	-3.90%	-3.81%	-3.88%
N	457,117	414,968	425,909	453,384

Note: See Table 4.16.

Table 4.20 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	BLACK			
	Long After Repeal = three or more years			
	Low Skill			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. High and Medium Skill*
Repeal State*Long After Repeal*Construction*Low Skill	-1.235**	-0.707	-0.908*	-0.801*
	0.420	0.569	0.514	0.418
	-70.91%	-50.66%	-59.67%	-55.09%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.557	1.013	-1.026	-0.809
	0.616	1.259	0.654	0.603
	-42.71%	175.41%	-64.16%	-55.46%
Repeal State*Long After Repeal*Construction	-0.064	-0.379	-0.190	-0.292
	0.313	0.500	0.436	0.318
	-6.20%	-31.53%	-17.33%	-25.32%
Repeal State*Shortly After Repeal*Construction	-0.806*	-2.037*	-0.012	-0.219
	0.476	1.200	0.533	0.467
	-55.35%	-86.95%	-1.20%	-19.69%
Repeal State*Long After Repeal*Low Skill	0.535**	0.532***	0.534***	0.536***
	0.195	0.195	0.195	0.195
	70.66%	70.23%	70.49%	70.93%
Repeal State*Shortly After Repeal*Low Skill	-0.361	-0.355	-0.349	-0.359
	0.239	0.239	0.239	0.239
	-30.31%	-29.90%	-29.45%	-30.16%
Repeal State*Long After Repeal	0.012	0.014	0.015	0.009
	0.124	0.124	0.124	0.124
	1.23%	1.36%	1.54%	0.86%
Repeal State*Shortly After Repeal	0.382**	0.382***	0.381***	0.382***
	0.144	0.144	0.144	0.144
	46.57%	46.55%	46.37%	46.58%
N	38,615	36,809	37,600	38,701

Note: See Table 4.16.

Table 4.21 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	non-BLACK			
	Long After Repeal = three or more years			
	Low Skill			
	vs. Craftsman	*vs.High Skill*	*vs. Medium Skill*	*vs. High and Medium Skill*
Repeal State*Long After Repeal*Construction*Low Skill	-0.997***	-1.091***	-0.641***	-0.884***
	0.147	0.161	0.160	0.145
	-63.11%	-66.41%	-47.33%	-58.69%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.402**	-0.754***	-0.166	-0.444***
	0.163	0.185	0.182	0.163
	-33.10%	-52.95%	-15.33%	-35.84%
Repeal State*Long After Repeal*Construction	0.090	0.301***	-0.145	0.089
	0.075	0.103	0.101	0.075
	9.40%	35.08%	-13.50%	9.33%
Repeal State*Shortly After Repeal*Construction	0.545***	0.808***	0.226*	0.494***
	0.089	0.127	0.122	0.091
	72.48%	124.36%	25.40%	63.87%
Repeal State*Long After Repeal*Low Skill	0.096	0.097	0.096	0.098
	0.078	0.078	0.077	0.078
	10.11%	10.13%	10.03%	10.26%
Repeal State*Shortly After Repeal*Low Skill	0.159*	0.158*	0.158*	0.159*
	0.086	0.086	0.086	0.086
	17.22%	17.16%	17.15%	17.23%
Repeal State*Long After Repeal	-0.019	-0.019	-0.018	-0.019
	0.038	0.038	0.037	0.038
	-1.83%	-1.90%	-1.79%	-1.86%
Repeal State*Shortly After Repeal	-0.072*	-0.071*	-0.070	-0.071*
	0.043	0.043	0.043	0.043
	-6.92%	-6.87%	-6.80%	-6.89%
N	457,117	414,968	425,909	453,384

Note: See Table 4.16.

Table 4.22 Long after Repeal and Shortly after Repeal, Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	BLACK			
	Long After Repeal = five or more years			
	Low Skill			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. High and Medium Skill*
Repeal State*Long After Repeal*Construction*Low Skill	-1.185 ***	-0.674	-0.694	-0.721 *
	0.435	0.584	0.536	0.433
	-69.43%	-49.05%	-50.06%	-51.39%
Repeal State*Shortly After Repeal*Construction*Low Skill	-1.147 *	-0.406	-0.802	-1.006 *
	0.595	0.834	0.683	0.576
	-68.23%	-33.36%	-55.17%	-63.44%
Repeal State*Long After Repeal*Construction	-0.104	-0.380	-0.376	-0.341
	0.323	0.512	0.456	0.329
	-9.87%	-31.63%	-31.32%	-28.89%
Repeal State*Shortly After Repeal*Construction	-0.547	-0.962	-0.584	-0.370
	0.458	0.747	0.575	0.441
	-42.11%	-61.79%	-44.21%	-30.93%
Repeal State*Long After Repeal*Low Skill	0.576 ***	0.575 ***	0.576 ***	0.578 ***
	0.206	0.206	0.205	0.206
	-114.66%	-5.50%	57.63%	-100.61%
Repeal State*Shortly After Repeal*Low Skill	-0.059	-0.055	-0.047	-0.055
	0.244	0.244	0.243	0.243
	-5.68%	-5.35%	-4.56%	-5.38%
Repeal State*Long After Repeal	0.026	0.027	0.028	0.022
	0.130	0.130	0.130	0.130
	2.68%	2.73%	2.87%	2.22%
Repeal State*Shortly After Repeal	0.207	0.207	0.207	0.207
	0.152	0.152	0.152	0.152
	23.04%	23.04%	23.00%	23.04%
N	38,615	36,809	37,600	38,701

Note: See Table 4.16.

Table 4.23 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Union Membership by Skill 1977-2002

Dependent=Natural Log (U_{ist} / 1-U_{ist})	*Logit*			
	non-BLACK			
	Long After Repeal = five or more years			
	Low Skill			
	vs. Craftsman	*vs. High Skill*	*vs.Medium Skill*	*vs. High and Medium Skill*
Repeal State*Long After Repeal*Construction*Low Skill	-1.138***	-1.339***	-0.779***	-1.082***
	0.157	0.172	0.171	0.155
	-67.95%	-73.78%	-54.10%	-66.10%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.820***	-1.060***	-0.633***	-0.856***
	0.172	0.191	0.189	0.171
	-55.93%	-65.34%	-46.88%	-57.53%
Repeal State*Long After Repeal*Construction	0.127	0.420***	-0.136	0.159**
	0.080	0.110	0.108	0.080
	13.53%	52.17%	-12.71%	17.20%
Repeal State*Shortly After Repeal*Construction	0.586***	0.785***	0.372***	0.573***
	0.090	0.124	0.122	0.091
	79.70%	119.24%	45.06%	77.38%
Repeal State*Long After Repeal*Low Skill	0.173**	0.173**	0.172**	0.174**
	0.084	0.084	0.084	0.084
	18.87%	18.92%	18.79%	19.05%
Repeal State*Shortly After Repeal*Low Skill	0.233**	0.233**	0.229**	0.236**
	0.094	0.094	0.094	0.094
	26.24%	26.19%	25.76%	26.55%
Repeal State*Long After Repeal	-0.062	-0.063	-0.062	-0.063
	0.040	0.040	0.040	0.040
	-6.04%	-6.11%	-6.02%	-6.07%
Repeal State*Shortly After Repeal	-0.060	-0.060	-0.059	-0.060
	0.046	0.046	0.046	0.046
	-5.83%	-5.80%	-5.68%	-5.85%
N	457,117	414,968	425,909	453,384

Note: See Table 4.16.

non-Black only groups. In each these tables I have consolidated the occupations falling under laborers and semiskill groups into a single low-skill category. This is done in part because of the very small sample available to measure the impact of repeal on Black workers. In Table 4.19 I find evidence a year or more after repeal of a decline in the odds of union membership for low-skill Black construction workers ranging from 50 to 62 percent. In the bottom half of the same table, I find that among low skill non-Black construction workers the odds of union membership decline in a range of 35 to 61 percent a year or more after repeal.

In Table 4.20, three or more years after repeal the odds of union membership for low-skill Black construction workers decline relative to higher skilled groups in a range of 55 to 71 percent. For low-skill non-Blacks, three or more years after repeal (Table 4.21) the odds of union membership decline in a range of 47 to 66 percent relative higher-skilled construction occupations.

Five more years after repeal, in Table 4.22, the odds of union membership for low-skill Blacks relative to higher-skilled blacks decrease in a range between 52 and 70 percent. In Table 4.23, five or more years after repeal the odds of union membership for low-skill non-Black construction workers decline anywhere from 54 to 74 percent.

Considering Black and non-Black construction workers separately I find that within both groups union membership declined more among low-skill occupations than it did among higher-skilled occupations.

4.7 Conclusion

Tables 4.24, 4.25, and 4.26 summarize the key findings of this analysis of the effect of repeal on construction union density. Although construction union membership has declined over the past two and half decades across all states, I have found, depending on length of the period after repeal, that repeal is associated with a decline in odds of union membership of 16 to 20 percent.

The odds of union membership among Black construction workers declined relative to non-Blacks after repeal in a range between 49 and 58 percent. Identifying a difference in the effect or repeal by race decreases somewhat the magnitude of the effect of repeal on the odds of union membership among all construction workers (the odds of membership decline in a range of 10 to 13 percent).

As shown in Table 4.26 in a series of samples limited in order to compare changes among laborers to changes in the odds of union membership of higher-skilled construction occupations, I find that the relative magnitude of the decline in union density increases as laborers are compared to successively higher skilled construction occupations; that is, a year or more after repeal I find that the odds of union membership for laborers decline by 67 percent relative to high-skill occupations, 46 percent relative to medium-skill occupations and finally 26 percent relative to semiskill occupations.

Also in Table 4.26 for each period following repeal there is a row labeled *All*; this row corresponds to the overall effect for all construction workers included in each sample (corresponding to *Repeal State*After Repeal*Construction* or alternatively *Repeal State*Long After Repeal*Construction*). In the sample that includes only laborers and

Table 4.24 Percent Change in the Odds of Union Membership Overall

	Percent Change in Odds
Overall	
1 or more years after repeal	-6.18%
3 or more years after repeal	-15.87%***
5 or more years after repeal	-19.88%***

Note: Summary of results from Table 4.13.

Table 4.25 Percent Change in the Odds of Union Membership by Race

	Percent Change in Odds
Black	
1 or more years after repeal	-58.17%***
3 or more years after repeal	-49.04%***
5 or more years after repeal	-52.90%***
ALL	
1 or more years after repeal	2.41%
3 or more years after repeal	-10.43%**
5 or more years after repeal	-12.80%**

Note: Summary of results from Table 4.15.

Table 4.26 Percent Change in the Odds of Union Membership by Skill

	Percent Change in Odds			
	Laborer			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semi Skill*
1 or more years after repeal				
Laborers	-52.87%***	-67.20%***	-45.82%***	-25.93%*
All	11.00%*	56.66%***	-3.82%	-28.92%***
3 or more years after repeal				
Laborers	-63.98%***	-74.77%***	-58.92%***	-45.37%***
All	-3.29%	35.35%***	-15.09%*	-35.45%***
5 or more years after repeal				
Laborers	-67.38%***	-79.38%***	-61.87%***	-46.43%***
All	-2.12%	52.50%***	-15.90%*	-39.48%***

Note: Summary of results from Tables 4.16, 4.17, and 4.18.

high-skill construction workers, the odds of union membership for all construction workers actually increase by 57 percent relative to nonconstruction workers. When the sample is limited to include only laborers and medium skill construction workers, the sign reverses and is no longer significant (at least for the period a year or more after repeal).

Finally when the construction portion of the sample includes only laborers and Semiskill construction occupations, all of these workers experience a 29 percent decline in the odds of union membership relative to nonconstruction workers. Based on these results I conclude in terms of union membership the negative effect of repeal falls more heavily upon low-skill construction occupations such as laborers and other semiskill occupations like painters and bricklayers.

Table 4.27 summarizes the distribution of the effect of repeal by skill and by race. The odds union membership for low-skill Black construction workers decline relative to higher-skill Black construction workers by 50 to 62 percent. Similarly, low-skill non-Black construction workers experience a decline in the odds of union membership relative to higher-skilled non-Blacks in a range of 36 to 61 percent. These results suggest that repeal has the same effect on union membership for low-skill Black and non-Black construction workers. The large relative declines in union density for Black construction workers identified in Table 4.25 are in part a result of the high concentration of Blacks in relatively lower skill construction unions prior to repeal. This concentration generated disproportionately large declines in union density among Blacks because repeal disproportionately lowered the odds of union membership among less-skilled construction occupations.

Table 4.27 Black and non Black, Percentage change in the Odds of Union Membership by Skill

	Low Skill			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. High and Medium Skill*
	Black			
1 or more years after repeal				
Low Skill	-62.19% **	-29.72%	-58.70% *	-50.21% *
All	-25.22%	-48.72%	-13.99%	-28.11%
3 or more years after repeal				
Low Skill	-70.91% ***	-50.66%	-59.67% *	-55.09% *
All	-6.20%	-31.53%	-17.33%	-25.32%
5 or more years after repeal				
Low Skill	-69.43% ***	-49.05%	-50.06%	-51.39% *
All	-9.87%	-31.63%	-31.32%	-28.89%
	non-Black			
1 or more years after repeal				
Low Skill	-52.23% ***	-60.49% ***	-35.85% ***	-50.09% ***
All	27.71% ***	59.01% ***	-1.60%	25.36% ***
3 or more years after repeal				
Low Skill	-63.11% ***	-66.41% ***	-47.33% ***	-58.69% ***
All	9.40%	35.08% ***	-13.50%	9.33%
5 or more years after repeal				
Low Skill	-67.95% ***	-73.78% ***	-54.10% ***	-66.10% ***
All	13.53%	52.17% ***	-12.71%	17.20% **

Note: Summary of results from Tables 4.19, 4.20, 4.21, 4.22, 4.23.

The departure of John L Lewis and the United Mine Workers from the American Federation of Labor (AFL) to form the Congress of Industrial Organization (CIO) was driven by a disagreement over how best to organize the relatively less-skilled workers in the vast and growing manufacturing sector.

Among the chief opponents of the rebels plans to build vast industrial unions were the building trades whose chief concern was the loss of membership outside of the construction industry (Dulles and Dubofsky 1999). For his part Lewis took a swing at his opponents when from inside the newly formed CIO he established and funded an industrial union for the building trades. Although Lewis's industrial union for construction workers was a costly endeavor that ultimately did not change the craft organization of the building trades, it did lead to a renewed effort among the building trades to organize less-skilled workers in their own ranks.

Freeman (1998) has argued that the growth of union density during the New Deal was driven more by bottom-up efforts to organize new members rather than through top-down legal reforms embodied in the Wagner Act. With respect to the erosion of union density in the postwar period, it is clear that like the rest of the labor movement construction union membership is plagued by forces which have reduced membership across states with and without a state prevailing wage law and in the face of a federal prevailing wage law. However, this dissertation has shown that state prevailing law repeal, in effect the reversal of New Deal legal reforms passed in 1933 in Utah, Colorado, and Florida and in 1941 in Alabama and New Hampshire, has quickened the pace of union decline within the construction labor market of these states.[8] Furthermore those workers least likely to be construction union members prior to the New Deal, low-skill

[8] The Kansas law was the first 1891, Idaho's was passed in 1911 and Louisiana's law in 1968.

crafts like laborers and painters were the crafts that experienced the largest relative declines in union density as a result of repeal.

Prevailing wage laws prevent labor market strategies which bring less-skilled construction workers particularly but not exclusively laborers into competition with a broader labor market composed of low-skill workers. State prevailing wage law repeal is thus reshaping the construction labor market to look more like it did prior to the Great Depression. Further state prevailing wage law repeals would have the same effect. Repeal of the federal prevailing wage law is the only remaining obstacle in the 20 states that in 2002 did not have a state prevailing wage law to the disappearance of collective bargaining for low-skill construction workers.

CHAPTER 5

WAGES AND BENEFITS COVERAGE

5.1 Introduction

This chapter examines the impact of the repeal of state prevailing wage laws on hourly wages and employer-paid health and pension benefits within the construction industry. To the extent that collective bargaining enhances bargaining power while also providing a mechanism whereby pension and health insurance benefits can be portable in what is a turbulent labor market, it is our expectation that policies like the repeal of state prevailing wage laws which discourage collective bargaining in construction would therefore have a negative effect on hourly wages and employer-paid benefits.

5.2 Real Hourly Earnings

5.2.1 All construction workers. Despite improvement during the economic expansion of the late 1990s, between 1977 and 2002 construction wages were down by 23 percent. Table 5.1 distributes the states that comprise this national trend into law, repeal, and never states.[1] Wages fell by 24 percent in both repeal and law states. Wages

[1] As discussed in Chapter 4, law states (law) are those that would maintain a state prevailing wage law between 1979 and 2002, repeal states (repeal) are those states that repealed their prevailing wage law at anytime between 1979 and 2002, and finally states that did not have a prevailing wage law during the period of analysis are labeled never states. Michigan suspended its prevailing wage law between 1994 and 1997 and thus is treated as a law state unless specified otherwise.

Table 5.1 Real Hourly Earnings of Construction Workers in Law, Repeal, and Never States before and after Repeal

	Law	Repeal	Never
Before Repeal (1977)	$11.07	$9.60	$8.59
After Repeal (2002)	$8.41	$7.32	$7.17
Percent Change	-24.1	-23.8	-16.6

were the highest in states with a prevailing wage law and the lowest in states that never had a law. Considering just construction there is no evidence that repeal caused the trends in hourly wages to depart from those affecting workers in states that kept their law. As discussed in Chapter 4 another important dimension to consider is the trend in wages outside of construction across these state groupings.

Table 5.2 reclassifies a worker's state of residence as experimental and non-experimental where experimental states are those that repealed a prevailing wage law by 2002. Workers classified under nonexperimental states live either in states that had a prevailing wage law or in states that did not have a law over the entire period. Within construction the wages of workers in experimental states fell relative the wages of workers in nonexperimental states by slightly less than 1 percent after repeal. This small difference is the result of merging workers from both law and never law states into the nonexperimental category (see Table 5.1). Within the control group a slower pace of decline in hourly wages for nonconstruction workers in experimental states translated into a relative increase in wages for this group of 3.6 percent. Adjusting for wage trends in the control group the wages of construction workers in experimental states fell by 4.4 percent.

Table 5.2 Real Hourly Earnings in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
		Treatment Group: Construction				
$9.60	$7.32	-23.79	$10.68	$8.21	-23.05	-0.74
		Control Group: Nonconstruction				
$6.64	$6.00	-9.60	$7.34	$6.37	-13.21	3.62
					Simple Difference in Difference in Difference	-4.35

5.2.2 Real hourly earnings by race. Prior to repeal the gap between the wages of Black and non-Black construction workers was the greatest in never states (non-Blacks earned 28% more than Blacks) and the smallest in law states. After repeal the gap all but equalized across all three state groupings with non-Black wages 10 percent higher than Black wages in law states and 11 percent higher in repeal and never states. As discussed in Chapter 4 between 1977 and 2002 the share of Blacks employed in lesser skilled construction occupations has fallen across all states, thus contributing to a closing of the gap between Black and non-Black average wages. In repeal states the wages of Black construction workers (Table 5.3) declined by just 13 percent after repeal but fell by 22 percent for non-Blacks.

Comparing the wages of Black construction workers living in experimental (repeal) states to those in nonexperimental (law and never) states, there was a relative gain of less than 1 percent for Blacks in experimental states after repeal (Table 5.4).

Table 5.3 Real Hourly Earnings of Construction Workers in Law, Repeal, and Never States before and after Repeal by Race

	Law	Repeal	Never
		Black	
Before Repeal (77-79)	$9.48	$7.57	$6.52
After Repeal (00-02)	$7.71	$6.60	$6.43
Percent Change	-18.6	-12.9	-1.4
		Non-Black	
Before Repeal (77-79)	$10.82	$9.39	$8.36
After Repeal (00-02)	$8.46	$7.34	$7.16
Percent Change	-21.8	-21.8	-14.3

Table 5.4 Real Hourly Earnings in Experimental States before and after Repeal by Industry and Race

Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
			Black			
		Treatment Group: Construction				
$7.57	$6.60	-12.86	$8.36	$7.25	-13.26	0.39
		Control Group: Nonconstruction				
$5.63	$5.24	-6.78	$6.46	$5.82	-9.92	3.14
					Difference in Difference in Difference	-2.74
			non-Black			
		Treatment Group: Construction				
$9.39	$7.34	-21.81	$10.46	$8.27	-20.87	-0.94
		Control Group: Nonconstruction				
$6.91	$6.09	-11.91	$7.42	$6.40	-13.73	1.83
					Difference in Difference in Difference	-2.76
					Difference in Difference in Difference in Difference	0.02

Adjusting for trends outside of construction the wages of Black construction workers living in experimental states fell relative to all other Blacks by 2.74 percent; making the same adjustments for non-Blacks, I find a relative decline in earnings for this group of 2.76 percent. Taken together there is little difference in the experience of Black and non-Black construction workers living in repeal states.

5.2.3 Real hourly earnings by union. Consistent with the pattern of average wages in Table 5.1, the average wage of construction union members was the highest in law states and lowest in never states (see Table 5.5). Union wages declined the most in repeal states (30 percent) and the least in law states (25 percent). The wages of nonunion workers also declined the most in repeal states, 10.3 percent compared to less than 8 percent in law and never states. How do these patterns compare to trends outside of construction?

The wages of unionized construction workers in experimental states declined by 5.6 percent compared to similar workers in nonexperimental states (see Table 5.6). The wages of unionized workers outside of construction in experimental states increased by 5.1 percent relative to the same workers in nonexperimental states; adjusting for these trends the relative wages of unionized construction workers in experimental states declined by 10.6 percent. The wages of nonunion construction workers declined relative to nonunion workers in nonexperimental states by 3 percent. Outside of construction the wages of nonunion workers in experimental states increased relative to similar workers in nonexperimental states by 1.1 percent. Overall the wages of nonunion construction workers in experimental states declined relative to all other nonunion workers by 4.1

Table 5.5 Real Hourly Earnings of Construction Workers in Law, Repeal, and Never States before and after Repeal by Union Membership

	Law	Repeal	Never
	Union		
Before Repeal (1977)	$14.49	$13.78	$12.78
After Repeal (2002)	$10.90	$9.63	$9.37
Percent Change	-24.8	-30.1	-26.6
	Nonunion		
Before Repeal (1977)	$8.11	$7.90	$7.56
After Repeal (2002)	$7.51	$7.09	$7.01
Percent Change	-7.5	-10.3	-7.2

Table 5.6 Real Hourly Earnings in Experimental States before and after Repeal by Industry and Union Membership

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Union						
Treatment Group: Construction						
$13.78	$9.63	-30.15	$14.36	$10.83	-24.60	-5.55
Control Group: Nonconstruction						
$9.45	$8.78	-7.01	$9.53	$8.37	-12.09	5.09
					Difference in Difference in Difference	-10.64
Nonunion						
Treatment Group: Construction						
$7.90	$7.09	-10.28	$7.99	$7.41	-7.25	-3.03
Control Group: Nonconstruction						
$5.87	$5.79	-1.42	$6.18	$6.02	-2.50	1.08
					Difference in Difference in Difference	-4.11
					Difference in Difference in Difference in Difference	-6.53

percent. Taken together the wages of unionized construction workers fell by 6.5 percent compared to all other groups. How has repeal changed hourly wages within construction by skill level?

5.2.4 Real hourly earnings by skill. In Table 5.7 I distribute trends in hourly wages across the state groupings for five different skill groups. At this level of analysis the difference in trends in the hourly wages of construction workers in law and repeal states are quite small with only the average among semiskill workers in repeal states falling faster than for the same group in law states. Uniformly in never states the change in real wages was smaller for every skill group than in the other two state groupings.

In Tables 5.8, 5.9, and 5.10 I compare trends in hourly wages for construction in each of these skill groups to a group of nonconstruction workers. A problem presented by our skill groupings is that similar groupings outside of construction do not exist. We thus compare the construction occupations classified as high skill, medium skill, and semiskill to nonconstruction workers classified as craftsman (craftsman). Although imperfect using craftsman as the control group for each of these occupational groups reflects the fact that the vast majority of construction occupations included in these groupings would also be classified as craftsman. The hourly wages of both high- and medium-skill construction workers in experimental states increased by less than 1 percent relative to construction workers in nonexperimental states.

Comparing trends for both these skill groups to trends among craftsman in non-construction industries I find that the wages of high- and medium-skill construction workers in experimental states increased relative to all other similarly skilled construction and nonconstruction after repeal by 1 percent or less. In Table 5.9, the wages of semiskill

Table 5.7 Real Hourly Earnings of Construction Workers in Law, Repeal and Never States before and after Repeal by Skill

	Law	Repeal	Never
		High Skill	
Before Repeal (77-79)	$12.96	$10.79	$10.04
After Repeal (00-02)	$9.93	$8.37	$8.13
Percent Change	-23.3	-22.4	-19.0
		Medium Skill	
Before Repeal (77-79)	$10.51	$8.93	$7.89
After Repeal (00-02)	$8.57	$7.42	$6.79
Percent Change	-18.5	-16.9	-13.9
		Semiskill	
Before Repeal (77-79)	$10.67	$9.28	$7.67
After Repeal (00-02)	$7.87	$6.72	$6.81
Percent Change	-26.2	-27.6	-11.2
		Laborers	
Before Repeal (77-79)	$8.51	$7.12	$6.08
After Repeal (00-02)	$6.48	$5.77	$5.77
Percent Change	-23.8	-19.0	-5.1
		Other	
Before Repeal (77-79)	$10.93	$10.43	$9.32
After Repeal (00-02)	$9.03	$8.26	$7.85
Percent Change	-17.4	-20.8	-15.8

Table 5.8 High and Medium Skill, Real Hourly Earnings in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
			High Skill			
			Treatment Group: Construction			
$10.79	$8.37	-22.42	$12.56	$9.67	-23.01	0.58
			Control Group: Nonconstruction (**Craftsman & Kindred**)			
$9.11	$8.10	-11.08	$9.70	$8.65	-10.86	-0.22
					Difference in Difference in Difference	0.80
			Medium Skill			
			Treatment Group: Construction			
$8.93	$7.42	-16.94	$10.07	$8.29	-17.71	0.77
			Control Group: Nonconstruction (**Craftsman & Kindred**)			
$9.11	$8.10	-11.08	$9.70	$8.65	-10.86	-0.22
					Difference in Difference in Difference	0.99

Table 5.9 Semiskill and Laborers, Real Hourly Earnings in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
Semiskill						
Treatment Group: Construction						
$9.28	$6.72	-27.58	$10.14	$7.70	-24.03	-3.55
Control Group: Nonconstruction (**Craftsman & Kindred**)						
$9.11	$8.10	-11.08	$9.70	$8.65	-10.86	-0.22
			Difference in Difference in Difference			-3.33
Laborers						
Treatment Group: Construction						
$7.12	$5.77	-18.99	$8.09	$6.37	-21.27	2.28
Control Group: Nonconstruction (**Laborers**)						
$6.24	$5.02	-19.56	$6.93	$5.30	-23.51	3.95
			Difference in Difference in Difference			-1.68

Table 5.10 Other, Real Hourly Earnings in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location	Difference (in % Change)
Other						
Treatment Group: Construction						
$10.43	$8.26	-20.81	$10.63	$8.80	-17.22	-3.58
Control Group: Nonconstruction (**Craftsman & Kindred**)						
$9.11	$8.10	-11.08	$9.70	$8.65	-10.86	-0.22
			Difference in Difference in Difference			-3.37

construction occupations employed in experimental states fell relative to the same group of construction workers in nonexperimental states by 3.6 percent. Given the small difference between craftsman across experimental and nonexperimental states, the wages of semiskill construction occupations in experimental states fell relative to similarly skilled construction workers and nonconstruction workers by 3.3 percent. In the same table I find that the wages of construction laborers in experimental states increased relative to their counterparts in nonexperimental states by 2.3 percent. Over the same period, the wages of laborers in experimental states but employed outside of construction increased relative to their counterparts in nonexperimental states by 4 percent. Thus relative to all other laborers the wages of construction laborers in experimental states fell by 1.7 percent over this period. In Table 5.10 I report the findings for other construction occupations; these are occupations which are not clearly construction occupations and thus could not be classified as in the other four groups of construction occupations. For this group of workers in experimental states, hourly wages declined relative to the same group in the construction industries of non experimental states by 3.6 percent.

Overall I conclude that with respect to wages repeal had a more negative effect on less skilled occupations particularly the semiskill. These findings are consistent with the results from the analysis of changes in union membership by skill where the less skilled (semi and laborers) suffered larger losses in union density than higher-skilled occupations (high and medium).

5.3 Pension and Health Insurance

5.3.1 All construction workers. The data on pension and health insurance which I am analyzing reveal changes in the percentage of workers receiving pension and health insurance coverage from their employer rather than changes in benefit levels. As Petersen (2000, 2004) has shown prevailing wage repeal reduces benefit levels. With respect to benefits coverage my expectations are these: If prevailing wage repeals discourage collective bargaining and collective bargaining encourages the payment of benefits, then similar to Petersen, I expect repeals to reduce the benefits coverage in construction. Given that unionization rates of Blacks and non-Blacks are similar in construction, I do not expect either race to be disproportionately harmed by the loss of benefits.

Nationwide the percentage of construction workers with a pension fell from 36 percent in 1979 to just 29 percent in 2001. Mirroring this overall pattern, pension coverage declined by a little less than 19 percent for construction workers living in states that had a prevailing wage law in both 1979 and 2001 (Table 5.11). Nearly unchanged between 1979 and 2001, less than a quarter of construction workers had a pension in states that did not have a prevailing wage law over the entire period.

The largest decline in pension coverage occurred for workers living in states that would eliminate prevailing wage regulations; here pension coverage declined by 29 percent between 1979 and 2001. In 2001, 46 percent of construction workers in law states had employment-based health coverage, a 22 percent decline from 1979. Coverage by employer-provided health insurance fell 25 percent for workers living in repeal states and by just 5 percent for those living in never law states. Although both

Table 5.11 Pension and Health Insurance Coverage before and after Repeal by Law, Repeal, and Never

	Law	Repeal	Never
	Employment-Based Pension Coverage		
Before Repeal (1979)	39.9	26.6	23.9
After Repeal (2001)	32.5	19.0	24.3
Percent Change	-18.5	-28.6	1.9
	Employment-Based Health Coverage		
Before Repeal (1979)	58.5	48.2	42.7
After Repeal (2001)	45.8	36.2	40.7
Percent Change	-21.6	-24.8	-4.7

pension and health insurance coverage rates were higher in repeal states than in never law states in 1979, by 2001 fewer workers in repeal states had either a pension or health insurance compared to those living in never law states.

In Table 5.12 I examine trends in pension and health coverage by industry after switching to my previously described division between experimental and non-experimental states. For construction workers living in experimental states there was relative to all other workers a decline in pension coverage of 13 percent; in the same relative terms health insurance coverage for construction workers living in experimental states declined by 9 percent.

5.3.2 Pension and health insurance by union membership. Data on pension and health coverage come from the March supplement of the Current Population Survey (CPS). Due to the sample design less than 1 in 6 of the respondents was asked to identify their union status. Thus of the 69,335 workers identified between 1979 and 2001 as employed in the construction industry I only know the union status of 10,095 of them.

Table 5.12 Pension and Health Insurance Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1979)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1979)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Employment-Based Pension Coverage						
		Treatment Group: Construction				
26.6	19.0	-28.55	37.4	31.2	-16.38	-12.17
		Control Group: Nonconstruction				
33.3	27.6	-17.10	40.9	33.4	-18.35	1.25
			Simple Difference in Difference in Difference			-13.42
Employment-Based Health Coverage						
		Treatment Group: Construction				
48.2	36.2	-24.80	56.0	45.0	-19.59	-5.21
		Control Group: Nonconstruction				
53.9	45.6	-15.36	60.2	48.7	-19.05	3.69
			Simple Difference in Difference in Difference			-8.90

Pooling observations collected between 2000 (1999) and 2002 (2001) (Figure 5.1) illustrate that although a majority (nearly two-thirds) of unionized construction workers had both a pension and health insurance, more than half of nonunion construction workers had neither a pension nor health insurance.

Although sample size limits the ability to directly measure the effect of repeal on pension and health coverage for union and nonunion workers, as Figure 5.1 illustrates, the number of workers with both a pension and health insurance illustrates how repeal through its effects on union status in turn changes industry-wide rates of pension and health insurance coverage. Figure 5.2 compares the percentage of workers with both a

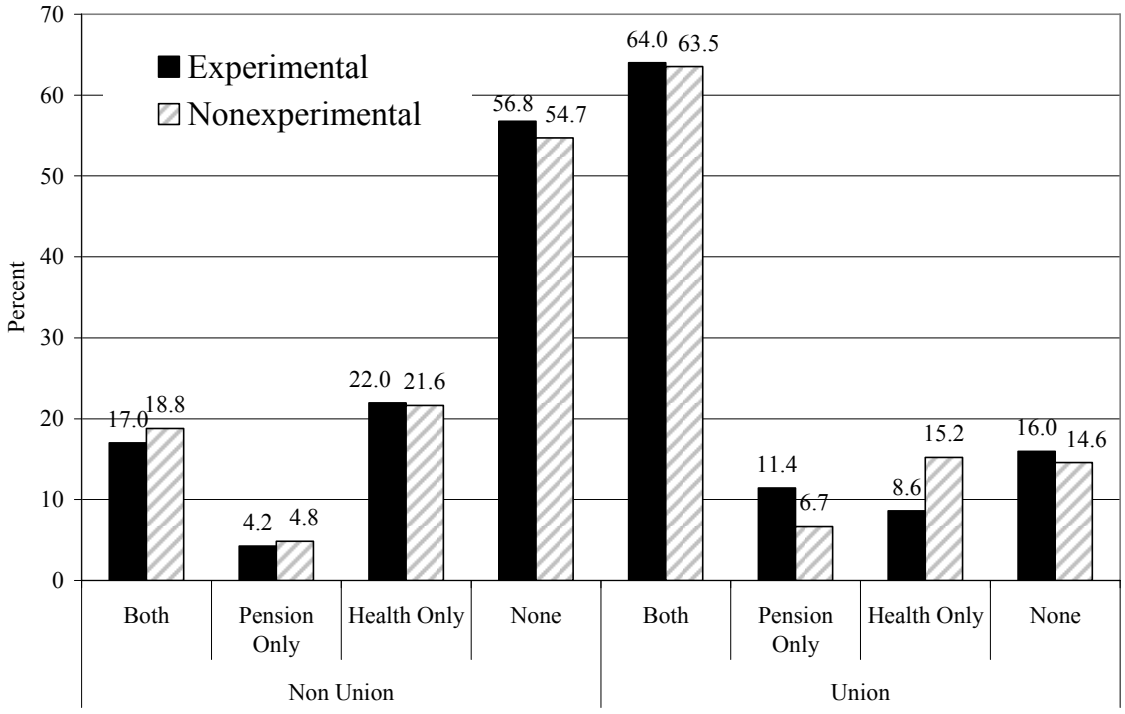

Figure 5.1 Percentage of Construction Workers with Pension and Health Insurance by Union Membership 1999-2001

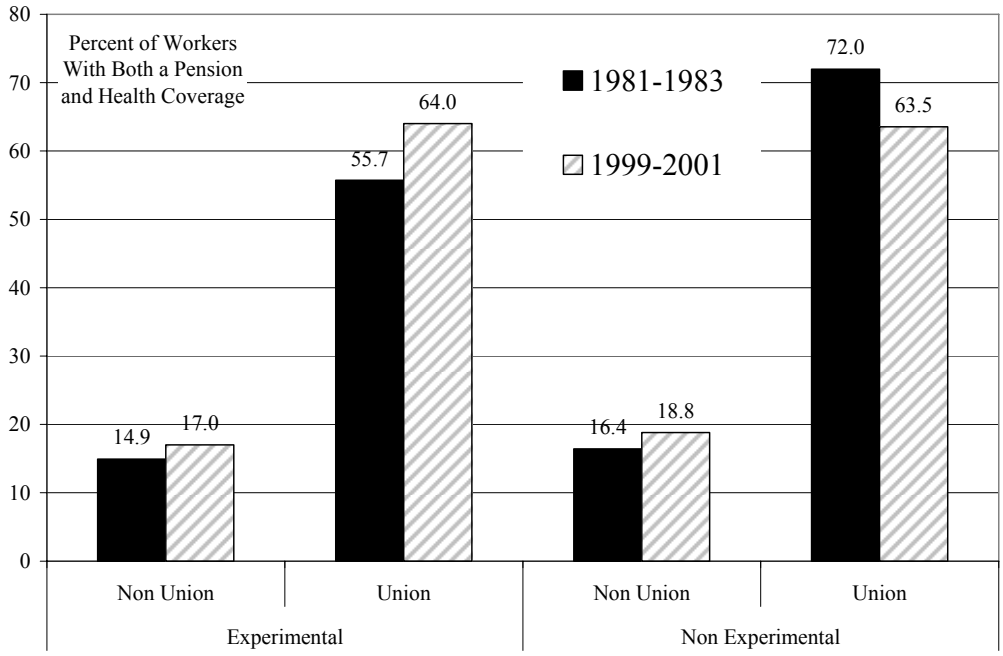

Figure 5.2 Percentage of Construction Workers with Both a Pension and Health Insurance 1981-1983 and 1999-2001

pension and health insurance to those with just a pension or just health coverage or neither.

Over time the percentage of workers with both a pension and health insurance increased among both union and nonunion workers in experimental states. It is my expectation that repeal is more likely to reduce benefit levels among unionized construction workers than it is to eliminate coverage altogether for these workers. If coverage rates decline I expect the source of this decline to be through the shrinking union sector. In Table 5.13 the percentage of workers with both a pension and health insurance coverage declined across law, repeal, and never states. The largest percentage decline in coverage occurred among workers in repeal states (36.3 %).

Table 5.13 Percentage of Workers with Both a Pension and Health Insurance in Law, Repeal, and Never states before and after Repeal

Pension and Health Coverage			
	Law	Repeal	Never
Before Repeal (1979)	37.0	24.3	20.5
After Repeal (2001)	27.2	15.5	18.4
Percent Change	-26.5	-36.3	-10.1

In Table 5.14, merging observations from law and never law states and adjusting for trends outside of construction, the percentage of workers with both a pension and health insurance in repeal states declined by 15 percent. I believe the data on rates of health and pension coverage for union and nonunion construction workers are representative of trends in the entire sample, so I have to reconcile the fact that the percentage of all construction workers in experimental states with both a pension and health insurance is declining with the fact that the percent of workers with both fringes is rising among both union and nonunion workers in these same states (see Figure 5.2). A portion, if not all, of the decline in the percentage of all workers with both a pension and health insurance is the result of the shrinking union sector where almost two-thirds of workers before and after repeal had both fringes compared to less than a fifth of nonunion workers before and after repeal.

5.3.3 Pension and health insurance by race. Tables 5.15 through 5.17 consider the effect of repeal on pension and health coverage by race. My expectation is that the effects of repeal by race should be similar. Considering just construction workers in

Table 5.14 Percentage of Workers with Both a Pension and Health Insurance in Experimental States before and after Repeal by Industry

Employment Based Pension and Health Coverage

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1979)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1979)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
		Treatment Group: Construction				
24.3	15.5	-36.27	34.4	25.9	-24.86	-11.42
		Control Group: Nonconstruction				
30.7	23.0	-25.24	38.7	27.5	-28.86	3.62
					Simple Difference in Difference in Difference	-15.04

Table 5.15 pension coverage across law, repeal, and never was the lowest for Blacks at the beginning of the period and declined the least by the end of the period. With respect to health insurance coverage the gap in coverage between Blacks and non-Blacks in repeal states narrowed the least. Adjusting for trends by race outside of construction in Table 5.16 (pension coverage) and Table 5.17 (health coverage) there was a relative decline in pension coverage as well as in health coverage for Black construction workers of 5 percent. This difference is unexpected and it remains to be seen whether it will remain after controlling for individual differences.

5.3.4 Pension and health insurance by skill. In Table 5.18 I examine the percentage of workers with a pension as well as the percentage with health insurance by skill grouping across law, repeal and never states. For the occupations classified as high

Table 5.15 Percentage of Workers with a Pension and Health Insurance in Law, Repeal, and Never States before and after Repeal by Race

Employer-Based Pension Coverage			
	Law	Repeal	Never
		Black	
Before Repeal (1979)	31.4	19.0	18.7
After Repeal (2002)	29.5	15.8	25.2
Percent Change	-6.0	-17.0	34.7
		non-Black	
Before Repeal (1979)	40.6	27.7	25.1
After Repeal (2002)	32.7	19.3	24.2
Percent Change	-19.6	-30.3	-3.5
Employer-Based Health Coverage			
		Black	
Before Repeal (1979)	50.1	39.2	35.7
After Repeal (2002)	42.8	29.4	36.8
Percent Change	-14.5	-24.9	3.0
		non-Black	
Before Repeal (1979)	59.2	49.5	44.3
After Repeal (2002)	46.0	36.9	41.3
Percent Change	-22.3	-25.5	-6.9

Table 5.16 Percentage of Workers with a Pension in Experimental States before and after Repeal by Industry and Race

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1979)	After Law Repeal (2001)	Time Diff. For Location %	Before Law Repeal (1979)	After Law Repeal (2001)	Time Diff. For Location %	Difference (in % Change)
Black						
Treatment Group: Construction						
19.0	15.8	-16.99	27.6	28.2	2.43	-19.42
Control Group: Nonconstruction						
31.6	26.6	-16.01	38.0	32.2	-15.26	-0.75
			Difference in Difference in Difference			-18.67
non-Black						
Treatment Group: Construction						
27.7	19.3	-30.29	38.4	31.5	-18.13	-12.16
Control Group: Nonconstruction						
33.6	27.7	-17.47	41.3	33.6	-18.67	1.20
			Difference in Difference in Difference			-13.35
			Difference in Difference in Difference in Difference			-5.32

Table 5.17 Percentage of Workers with Health Insurance in Experimental States before and after Repeal by Industry and Race

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1979)	After Law Repeal (2001)	Time Diff. For Location %	Before Law Repeal (1979)	After Law Repeal (2001)	Time Diff. For Location %	Difference (in % Change)
			Black			
			Treatment Group: Construction			
39.2	29.4	-24.93%	45.7	41.0	-10.33%	-14.60%
			Control Group: Non-Construction			
53.6	45.1	-15.79%	59.7	50.7	-14.98%	-0.81%
					Difference in Difference in Difference	-13.79%
			non-Black			
			Treatment Group: Construction			
49.5	36.9	-25.46%	57.1	45.3	-20.64%	-4.81%
			Control Group: Non-Construction			
53.9	45.7	-15.30%	60.3	48.4	-19.69%	4.38%
					Difference in Difference in Difference	-9.20%
					Difference in Difference in Difference in Difference	-4.60%

Table 5.18 Percentage of Workers with a Pension and or Health Coverage in Law, Repeal, and Never States before and after Repeal by Skill

	Pension Coverage			Health Coverage		
	Law	Repeal	Never	Law	Repeal	Never
	High Skill			**High Skill**		
Before Repeal (1977)	55.9	39.6	43.0	78.2	66.1	64.7
After Repeal (2002)	50.8	30.6	40.1	64.3	51.7	56.9
Percent Change	-9.2	-22.9	-6.8	-17.8	-21.7	-12.1
	Medium Skill			**Medium Skill**		
Before Repeal (1977)	36.4	27.3	19.4	55.6	47.5	36.2
After Repeal (2002)	35.0	21.0	25.6	49.2	39.7	40.0
Percent Change	-3.9	-23.1	32.4	-11.5	-16.4	10.3
	Semiskill			**Semiskill**		
	Law	Repeal	Never	Law	Repeal	Never
Before Repeal (1977)	33.9	20.7	12.7	50.4	38.7	28.9
After Repeal (2002)	19.1	10.3	13.7	30.0	16.2	24.2
Percent Change	-43.7	-50.1	7.8	-40.5	-58.1	-16.2
	Laborers			**Laborers**		
Before Repeal (1977)	30.9	17.8	16.2	43.9	37.3	32.9
After Repeal (2002)	18.2	6.9	13.0	31.0	30.0	32.9
Percent Change	-41.1	-61.2	-19.6	-29.2	-19.7	0.0
	Other			**Other**		
Before Repeal (1977)	52.4	27.8	37.9	78.2	27.8	67.1
After Repeal (2002)	40.5	31.6	31.6	56.0	50.6	53.9
Percent Change	-22.7	13.3	-16.6	-28.4	81.7	-19.6

skill, medium skill, and semiskill, the percentage declines in pension and health coverage were the smallest in law and never states. For these same three groups coverage by these fringes was the highest both at the beginning and end of the period in law states.

Generally at the beginning of the period, rates of coverage for these fringes were the lowest among these same three occupational groups in never states, the exception being pension coverage for high-skill occupations. By the end of period the percentage of workers with these fringes among high-skill, medium-skill, and semiskill occupations was the lowest in repeal states. The percentage of laborers with a pension or health insurance was the highest at the beginning of the period in law states and the lowest in never states. By the end of the period pension coverage remained the highest in law states but was now lowest in repeal states. The trends in health coverage for laborers depart from the established pattern with laborers in law states having the highest rate of coverage at the beginning of the period and the lowest at the end.

The rate of coverage did not change for laborers in never states and only declined by 20 percent in repeal states (compared to 29 percent in law states). For those workers I could not definitively allocate to one of my four skill groupings (other) coverage by these fringes actually increased repeal states.

In Table 5.19 the familiar pattern reemerges with respect to the percentage of workers with both a pension and health insurance; where across all four skill groupings at the beginning of the period coverage is the highest in law states, the lowest in never states, and by the end of the period had declined by the greatest amount in repeal states. By the end of the period coverage both a pension and health insurance were the lowest

Table 5.19 Percent of Workers with Both a Pension and Health Insurance in Law, Repeal, and Never States before and after Repeal by Skill

	Law	Repeal	Never
	High Skill		
Before Repeal (1977)	53.6	39.6	36.2
After Repeal (2002)	44.0	25.8	31.4
Percent Change	-17.9	-35.0	-13.3
	Medium Skill		
Before Repeal (1977)	33.3	25.6	17.0
After Repeal (2002)	29.3	16.8	18.9
Percent Change	-12.1	-34.3	11.3
	Semi Skill		
Before Repeal (1977)	30.1	16.1	10.6
After Repeal (2002)	15.4	6.4	8.1
Percent Change	-48.7	-60.0	-23.8
	Laborers		
Before Repeal (1977)	28.0	14.5	13.3
After Repeal (2002)	14.8	6.6	9.6
Percent Change	-47.2	-54.8	-27.8
	Other		
Before Repeal (1977)	51.4	25.7	33.7
After Repeal (2002)	33.2	26.8	26.3
Percent Change	-35.4	4.6	-21.9

in repeal states for the occupations classified as high skill, medium skill, semiskill, and laborers. Consistent with previous findings, by the end of the period for the remaining construction occupations classified as other, coverage by both of these fringes actually increased in repeal states and declined in law and never states.

In the three previous tables there was a clear pattern across all three state groupings with pension and health insurance coverage considered alone as well as for coverage by both fringes of large declines in coverage for semiskill occupations and laborers relative to high- and medium-skill occupations. The next question is whether these trends by occupation are different in repeal states compared to all other states. In the next nine tables I compare rates of coverage for pensions, health insurance, and both together across experimental and nonexperimental states and adjust those comparisons to reflect trends among a control group of nonconstruction workers. Here as in previous analysis of skill the nonconstruction control group for high-skill, medium-skill, semiskill and other occupations is craftsman; for laborers the control group is nonconstruction laborers. In each table I calculate the difference between construction workers in experimental states before and after repeal, compare that to the same difference for construction workers in nonexperimental states; then I make the same comparisons for workers outside of construction. The final result adjusts the relative difference for construction workers in experimental states to reflect the difference for nonconstruction workers in experimental states. To streamline the discussion I will limit the exploration of the results in the following tables to this final difference which in each table is labeled *Difference in Difference in Difference*.

Tables 5.20, 5.21, and 5.22 explore changes in pension coverage after repeal for the five occupational groups. Contrary to the pattern in union density by skill in Chapter 4 the largest relative declines in pension coverage occurred among high- and medium-skill occupations where pension coverage for construction workers in experimental states declined relative to all other workers (construction and non) by 18 and 20 percent respectively. For semiskill occupations and laborers the declines in pension coverage were only 12 and 13 percent respectively. For the occupations in the grouping other (Table 5.22), pension coverage actually increased relative to all other workers by 33 percent in experimental states.

Examining health insurance coverage in Tables 5.23, 5.24, and 5.25 they show that while health coverage declined for high- (7 percent) and medium-skill (10 percent) occupations in experimental states relative to all other similarly skilled workers, coverage for laborers in experimental states actually increased (9 percent) relative to all other similarly skilled workers. Unlike pension coverage and more in line with the expectations, health coverage among semiskill occupations in experimental states declined by 21 percent relative to similarly skilled workers. As previously for the occupations in the occupational grouping labeled other, health coverage increased relative to all other similarly classified occupations.

Finally in Tables 5.26, 5.27, 5.28, and 5.29 I find that relative to similarly skilled workers, coverage by both fringes declined for high- and medium-skill construction occupations by 21 and 28 percent respectively. This contrasts with semiskill and laborer construction occupations where coverage by both fringes declined by 14 and 4 percent respectively. Again in terms of coverage by both fringes the remaining construction

Table 5.20 High and Medium Skill, Percentage of Workers with a Pension in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
High Skill						
Treatment Group: Construction						
39.6	30.6	-22.88	53.8	49.3	-8.34	-14.54
Control Group: Nonconstruction (**Craftsman & Kindred**)						
51.5	45.6	-11.55	62.5	53.4	-14.57	3.02
			Difference in Difference in Difference			-17.56
Medium Skill						
Treatment Group: Construction						
27.3	21.0	-23.13	33.6	33.8	0.69	-23.82
Control Group: Nonconstruction (**Craftsman & Kindred**)						
51.5	45.6	-11.55	62.5	53.4	-14.57	3.02
			Difference in Difference in Difference			-26.84

Table 5.21 Semiskill and Laborers, Percentage of Workers with a Pension in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Semiskill						
Treatment Group: Construction						
20.7	10.3	-50.13	30.9	18.1	-41.45	-8.68
Control Group: Nonconstruction (**Craftsman & Kindred**)						
51.5	45.6	-11.55	62.5	53.4	-14.57	3.02
			Difference in Difference in Difference			-11.70
Laborers						
Treatment Group: Construction						
17.8	6.9	-61.23	28.7	17.5	-38.93	-22.29
Control Group: Nonconstruction (**Laborers**)						
30.2	20.6	-31.71	35.7	27.6	-22.56	-9.15
			Difference in Difference in Difference			-13.14

Table 5.22 Other, Percentage of Workers with a Pension in Experimental States before and after Repeal by Industry

Other						
Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Treatment Group: Construction						
27.8	31.6	13.30	50.1	38.6	-22.99	36.29
Control Group: Nonconstruction (**Craftsman & Kindred**)						
51.5	45.6	-11.55	62.5	53.4	-14.57	3.02
			Difference in Difference in Difference			33.27

Table 5.23 High and Medium Skill, Percentage of Workers with Health Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
High Skill						
Treatment Group: Construction						
66.1	51.7	-21.73	76.0	63.3	-16.72	-5.01
Control Group: Nonconstruction (**Craftsman & Kindred**)						
76.0	67.0	-11.85	82.2	70.6	-14.11	2.26
			Difference in Difference in Difference			-7.27
Medium Skill						
Treatment Group: Construction						
47.5	39.7	-16.37	52.4	48.0	-8.31	-8.05
Control Group: Nonconstruction (**Craftsman & Kindred**)						
76.0	67.0	-11.85	82.2	70.6	-14.11	2.26
			Difference in Difference in Difference			-10.31

Table 5.24 Semiskill and Laborers, Percentage of Workers with Health Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Semiskill						
Treatment Group: Construction						
38.7	16.2	-58.06	47.3	28.9	-38.94	-19.11
Control Group: Nonconstruction (**Craftsman & Kindred**)						
76.0	67.0	-11.85	82.2	70.6	-14.11	2.26
			Difference in Difference in Difference			-21.37
Laborers						
Treatment Group: Construction						
37.3	30.0	-19.74	42.2	31.3	-25.88	6.14
Control Group: Nonconstruction (**Laborers**)						
48.3	36.6	-24.30	54.3	42.6	-21.49	-2.81
			Difference in Difference in Difference			8.95

Table 5.25 Other, Percentage of Workers with Health Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Other						
Treatment Group: Construction						
55.8	50.6	-9.36	76.4	55.5	-27.35	17.99
Control Group: Nonconstruction (**Craftsman & Kindred**)						
76.0	67.0	-11.85	82.2	70.6	-14.11	2.26
			Difference in Difference in Difference			15.73

Table 5.26 High and Medium Skill, Percentage of Workers with Both a Pension and Health Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
High Skill						
Treatment Group: Construction						
39.6	25.8	-34.97	50.8	42.3	-16.70	-18.27
Control Group: Nonconstruction (Craftsman & Kindred)						
49.9	40.1	-19.56	60.6	47.2	-22.16	2.60
			Difference in Difference in Difference			-20.86
Medium Skill						
Treatment Group: Construction						
25.6	16.8	-34.28	30.6	28.0	-8.61	-25.67
Control Group: Nonconstruction (Craftsman & Kindred)						
49.9	40.1	-19.56	60.6	47.2	-22.16	2.60
			Difference in Difference in Difference			-28.27

Table 5.27 Semiskill, Percentage of Workers with Both a Pension and Health Coverage in Experimental States before and after Repeal by Industry

Semi Skill						
Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Treatment Group: Construction						
16.1	6.4	-60.04	27.3	14	-48.56	-11.49
Control Group: Nonconstruction (Craftsman & Kindred)						
49.9	40.1	-19.56	60.6	47.2	-22.16	2.6
			Difference in Difference in Difference			-14.08

Table 5.28 Laborers, Percentage of Workers with Both a Pension and Health Coverage in Experimental States before and after Repeal by Industry

Laborers						
Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Treatment Group: Construction						
14.5	6.6	-54.82	25.8	14.1	-45.35	-9.47
Control Group: Nonconstruction (Laborers)						
27.6	16.5	-40.06	33.5	22	-34.27	-5.79
			Difference in Difference in Difference			-3.68

Table 5.29 Other, Percentage of Workers with Both a Pension and Health Coverage in Experimental States before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
Other						
Treatment Group: Construction						
25.7	26.8	4.60	48.5	31.7	-34.66	39.26
Control Group: Nonconstruction (**Craftsman & Kindred**)						
49.9	40.1	-19.56	60.6	47.2	-22.16	2.60
			Difference in Difference in Difference			36.67

occupations in experimental states experienced a relative increase in coverage of 37 percent (other, Table 5.29). Across all three measures of benefits coverage I do see a skill difference in terms of the loss of coverage, but this difference is not exacerbated by repeal. In fact repeal has the opposite effect with respect to coverage by these fringes; repeal in relative terms disproportionately reduces coverage among more highly skill construction occupations. It remains to be seen whether these trends in coverage generated from simple differences remain after systematically controlling for other important individual differences.

5.4 Real Hourly Earnings

5.4.1 All construction workers. Table 5.30 presents the coefficients and standard errors from ordinary least squares (OLS) regression with the log of real hourly earnings

Table 5.30 Construction Only, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*		
	1	2	3
Repeal State*After Repeal	-0.020***		
	0.006		
Repeal State*Long After Repeal		-0.020***	-0.022***
		0.006	0.007
Repeal State*Shortly After Repeal		-0.019**	-0.027***
		0.008	0.008
State*Construction Fixed Effects	No	Yes	Yes
N	161,688	161,688	161,688

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-2002) of the Current Population Survey. All specifications control for time and state fixed effects. In column 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 3 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. Observations weighted using CPS weights.

as the dependent variable. In all specifications, control variables for human capital, time, and state fixed effects are included in the model but not reported in the tables. The sample here is limited to include only workers employed in the construction industry. In all three specifications repeal lowers wages by 2 percent. In Table 5.31 I apply equations 3.5 and 3.6 to a full sample of construction and nonconstruction workers. In columns 1 and 2 the focus variable is the interaction term *Repeal State*After Repeal*Construction* which identifies construction workers in repeal states a year or more after repeal. In the first column, real hourly wages fall by 3 percent as a result of repeal. In column 2, after including *state*construction* interaction terms, the magnitude of the effect decreases with real hourly wages falling by just 1 percent as a result of repeal. The next two columns distinguish between shortly and long after repeal. Defining long after repeal as three or more years following repeal, real hourly wages fall by 1.6 percent. Respecifying long

Table 5.31 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	1	2	3	4
Repeal State*After Repeal*Construction	-0.030***	-0.011*		
	0.005	0.006		
Repeal State*After Repeal	-0.005**	-0.006***		
	0.002	0.002		
Repeal State*Long After Repeal*Construction			-0.016**	-0.020***
			0.007	0.007
Repeal State*Shortly After Repeal*Construction			-0.001	-0.001
			0.008	0.008
Repeal State*Long After Repeal			-0.001	0.001
			0.002	0.002
Repeal State*Shortly After Repeal			-0.016***	-0.022***
			0.003	0.003
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	1,499,900	1,499,900	1,499,900	1,499,900

Note: All specifications control for time, time*construction, and state fixed effects. In columns 1 and 2 "after repeal" is defined as the year following repeal. In column 3, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 4 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. See Table 5.30 for additional notes.

after as five or more years after repeal, the real hourly wages of construction workers fall by 2 percent relative to all other workers.

These results are an extension of previous work by Katz and Kessler (2001), differing only by including CPS data collected between 1994 and 2002 and thus including a repeal in Oklahoma and a brief suspension in Michigan. They found that repeal decreased the real hourly wages of construction workers by 3.9 percent a year or more following repeal. After including interaction terms for *state*construction* fixed effects the coefficient for the effect of repeal a year or more following repeal was not

significantly different from 0. Furthermore when they distinguished between shortly and long after repeal, none of their coefficients were significantly different from 0. For a complete description of these previous findings as well as tables describing the replication of the same period of analysis see Appendix A.

5.4.2 Real hourly earnings by race. Table 5.32 presents the coefficients from equations 3.7 and 3.8 when the sample includes only construction workers. A year or more after repeal the real hourly wages of all construction workers in repeal states, Black and non Black decline by 1.9 percent relative to all other construction workers. The coefficient on the interaction term *Repeal State*After Repeal*Black* is not statistically different from 0, indicating no difference in the experience of Black and non-Black construction workers. Long after repeal real hourly wages for all construction workers

Table 5.32 Construction Only, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings by Race 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*		
	1	2	3
Repeal State*After Repeal*Black	-0.020		
	0.019		
Repeal State*After Repeal	-0.019***		
	0.006		
Repeal State*Long After Repeal*Black		-0.015	0.002
		0.020	0.021
Repeal State*Shortly After Repeal*Black		-0.035	-0.033
		0.027	0.025
Repeal State*Long After Repeal		-0.019***	-0.022***
		0.007	0.007
Repeal State*Shortly After Repeal		-0.017**	-0.025***
		0.008	0.008
N	161,688	161,688	161,688

Note: see Table 5.30.

decline by 1.9 percent three or more years after repeal and by 2.2 percent five or more years after repeal. Breaking up the effect of repeal into a short- and long-run effect, there is still no measurable relative difference in the wages of Black construction workers in repeal states from all other construction workers in repeal states.

In Table 5.33 I apply equations 3.7 and 3.8 to the full sample of construction and nonconstruction workers. A year or more following repeal as reported in the first column of the table the real hourly wages of construction workers (Black and non-Black) decline by 1.4 percent (*Repeal State*After Repeal*Construction*), but there is no evidence of a difference in the impact of repeal for Black construction workers compared to non-Blacks in repeal states. In column 2 where long after repeal is defined as three or more years following repeal, the wages of all construction workers declined by 2 percent but as in the previous column there was no measurable difference in the experience of Black and non-Black construction workers. In column 3, long after repeal the wages of all construction workers decline by 2.4 percent, but again there is no difference in the effect of repeal. These findings depart from earlier work on the racial differential in the impact of repeal. In Appendix A I find that the racial differential measured in previous work is not robust to the lengthening of the period of analysis.

5.4.3 Real hourly earnings by union membership. I begin my analysis by considering the effect of repeal on hourly wages without a nonconstruction control group. In Table 5.34, a year or more after repeal, the wages of all construction workers (union and nonunion) decline by 1.6 percent. In repeal states a year or more following repeal, the wages of unionized construction workers decline relative to nonunion members by 4.1 percent.

Table 5.33 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings by Race 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*		
	1	2	3
Repeal State*After Repeal*Construction*Black	0.003		
	0.020		
Repeal State*After Repeal*Construction	-0.014 **		
	0.006		
Repeal State*After Repeal*Black	-0.025 ***		
	0.006		
Repeal State*After Repeal	-0.003		
	0.002		
Repeal State*Long After Repeal*Construction*Black		0.007	0.018
		0.021	0.021
Repeal State*Shortly After Repeal*Construction*Black		-0.011	-0.010
		0.028	0.026
Repeal State*Long After Repeal*Construction		-0.020 ***	-0.024 ***
		0.007	0.007
Repeal State*Shortly After Repeal*Construction		-0.003	-0.004
		0.009	0.008
Repeal State*Long After Repeal*Black		-0.023 ***	-0.018 ***
		0.006	0.007
Repeal State*Shortly After Repeal*Black		-0.030 ***	-0.029 ***
		0.007	0.008
Repeal State*Long After Repeal		0.002	0.004
		0.003	0.003
Repeal State*Shortly After Repeal		-0.012 ***	-0.018 ***
		0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,499,900	1,499,900	1,499,900

Note: All specifications control for time, time*construction, and state fixed effects. In column 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 3 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. For additional notes see Table 5.31.

Table 5.34 Construction Only, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings by Union Membership 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*		
	1	2	3
Repeal State*After Repeal*Union	-0.041 ***		
	0.014		
Repeal State*After Repeal	-0.016 **		
	0.007		
Repeal State*Long After Repeal*Union		-0.059 ***	-0.058 ***
		0.016	0.017
Repeal State*Shortly After Repeal*Union		-0.007	-0.025
		0.019	0.019
Repeal State*Long After Repeal		-0.013 *	-0.018 **
		0.007	0.008
Repeal State*Shortly After Repeal		-0.024 **	-0.027 ***
		0.010	0.009
N	136,598	136,598	136,598

Note: Data set drawn from May (1977-81) and Outgoing Rotations (1983-02) of the Current Population Survey. See Table 5.30 for additional notes.

In the long run, the wages of all construction workers in repeal states declined by 1.3 percent three or more years after repeal and 1.8 percent five or more years after repeal. The wages of unionized construction workers declined relative to nonunion members long after repeal by 5.9 percent three or more years after repeal and by 5.8 percent five or more years after repeal.

Including nonconstruction workers as a control, in Table 5.35, a year or more following repeal the wages of unionized construction workers decline relative to non-union construction workers by 3 percent. In column 2, three or more years following repeal the wages of construction union members decline relative to nonunion members by 5 percent. In column 3 where long after repeal is defined as five or more years, the

Table 5.35 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings by Union Membership 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*		
	1	2	3
Repeal State*After Repeal*Construction*Union	-0.031 **		
	0.016		
Repeal State*After Repeal*Construction	-0.009		
	0.007		
Repeal State*After Repeal*Union	-0.013 **		
	0.006		
Repeal State*After Repeal	-0.003		
	0.003		
Repeal State*Long After Repeal*Construction*Union		-0.053 ***	-0.042 **
		0.018	0.019
Repeal State*Shortly After Repeal*Construction*Union		0.006	-0.006
		0.021	0.022
Repeal State*Long After Repeal*Construction		-0.008	-0.014 *
		0.008	0.008
Repeal State*Shortly After Repeal*Construction		-0.013	-0.007
		0.011	0.010
Repeal State*Long After Repeal*Union		-0.011 *	-0.021 ***
		0.007	0.007
Repeal State*Shortly After Repeal*Union		-0.015 **	-0.016 **
		0.007	0.008
Repeal State*Long After Repeal		-0.002	0.000
		0.003	0.003
Repeal State*Shortly After Repeal		-0.004	-0.014 ***
		0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,236,632	1,236,632	1,236,632

Note: See Tables 5.34 and 5.31 for additional notes.

wages of construction union members decreased relative to nonunion members by 4 percent.

5.4.4 Real hourly earnings by skill. The four columns in Tables 5.36, 5.37, and 5.38 represent the coefficients from equations 3.7 and 3.8 where the sample has been limited to make comparisons between different skill groupings within the construction industry. None of the coefficients of interest in these three tables are significantly different from 0. That is, I can find no evidence of a difference between the hourly wages of construction laborers and the four different reference groups which represent higher-skilled construction occupations. I also find no evidence of a relative difference between the wages of all construction workers and all other workers (*Repeal State*After Repeal*Construction* or alternatively *Repeal State*Long After Repeal*Construction*). Failing to find any evidence of a relative decline in the hourly wages of all construction workers[2] included in the sample I further consolidated the skill categories.

In Tables 5.39, 5.40, and 5.41 I continue to limit the nonconstruction portion of the sample to include only workers classified as craftsman or laborers. Among construction workers I merged those classified as laborers and semiskill workers into a single category labeled low skill. I then generated four different samples each with a variation of more skilled construction workers in the reference group. Low-skill construction occupations will be treated as the equivalent of laborers outside of the industry and each of our more skilled reference groups is considered equivalent to nonconstruction occupations defined as craftsman. In the columns labeled *vs. Craftsman*

[2] In Table 5.21 I found that the hourly wages of all construction workers declined relative to all other workers, depending on the specification, in range of 1 to 3 percent.

Table 5.36 Effects of State Prevailing Wage Law Repeal Real Hourly Wages a Year or More after Repeal by Skill 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	After Repeal = a year or more			
	Laborers			
	Vs. Craftsman	*Vs. High Skill*	*Vs.Medium Skill*	*Vs. Semiskill*
Repeal State*After Repeal*Construction***Laborer**	-0.013	-0.010	-0.028	-0.012
	0.017	0.020	0.019	0.021
Repeal State*After Repeal*Construction	0.003	-0.004	0.014	-0.001
	0.008	0.013	0.011	0.014
Repeal State*After Repeal***Laborer**	0.025 ***	0.025 ***	0.025 ***	0.025 ***
	0.008	0.008	0.008	0.008
Repeal State*After Repeal	-0.021 ***	-0.021 ***	-0.021 ***	-0.021 ***
	0.004	0.004	0.004	0.004
N	595,896	550,060	552,276	544,829

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-02) of the Current Population Survey (CPS). All specifications control for time, time*construction, state and state*construction fixed effects. The nonconstruction portion of the sample includes only workers classified as laborers or craftsmen. The construction portion of the sample in each column compares the experience of laborers to a reference group of more highly skilled construction occupations. In the column labeled vs. High Skill the reference group includes electricians, boilermakers, elevator constructors, iron workers, plumbers and pipefitters and sheetmetal workers. In the column labeled vs. Medium Skill the reference group includes carpenters and heavy equipment operators (operating engineers and teamsters). In the column labeled vs. Semiskill the reference group includes asbestos workers, brick layers, painters, plasters and roofers. Observations weighted using CPS weights.

Table 5.37 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After = 3 or more years			
	Laborers			
	Vs. Craftsman	*Vs. High Skill*	*Vs. Medium Skill*	*Vs. Semiskill*
Repeal State*Long After Repeal*Construction***Laborer**	-0.012	-0.001	-0.028	-0.010
	0.018	0.022	0.020	0.022
Repeal State*Shortly After Repeal*Construction***Laborer**	-0.016	-0.033	-0.030	-0.017
	0.022	0.026	0.024	0.027
Repeal State*Long After Repeal*Construction	0.002	-0.012	0.015	-0.002
	0.009	0.014	0.012	0.015
Repeal State*Shortly After Repeal*Construction	0.005	0.015	0.013	0.001
	0.011	0.018	0.015	0.019
Repeal State*Long After Repeal***Laborer**	0.028 ***	0.028 ***	0.028 ***	0.028 ***
	0.009	0.009	0.009	0.009
Repeal State*Shortly After Repeal***Laborer**	0.021 **	0.021 **	0.020 **	0.020 **
	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal	-0.021 ***	-0.021 ***	-0.021 ***	-0.021 ***
	0.005	0.005	0.005	0.005
Repeal State*Shortly After Repeal	-0.022 ***	-0.022 ***	-0.022 ***	-0.022 ***
	0.005	0.005	0.005	0.005
N	595,896	550,060	552,276	544,829

Note: See Table 5.36.

Table 5.38 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill

Dependent Variable = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After = 5 or more years			
	Laborers			
	Vs. Craftsman	*Vs. High Skill*	*Vs. Medium Skill*	*Vs. Semiskill*
Repeal State*Long After Repeal*Construction***Laborer**	-0.011	-0.004	-0.035	-0.003
	0.019	0.023	0.021	0.023
Repeal State*Shortly After Repeal*Construction***Laborer**	-0.010	-0.013	-0.030	-0.012
	0.022	0.026	0.024	0.027
Repeal State*Long After Repeal*Construction	-0.001	-0.011	0.020	-0.010
	0.009	0.015	0.012	0.016
Repeal State*Shortly After Repeal*Construction	0.003	-0.002	0.016	-0.001
	0.010	0.017	0.014	0.018
Repeal State*Long After Repeal***Laborer**	0.030***	0.030***	0.030***	0.030***
	0.009	0.009	0.009	0.009
Repeal State*Shortly After Repeal***Laborer**	0.004	0.004	0.004	0.003
	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal	-0.022***	-0.022***	-0.022***	-0.022***
	0.005	0.005	0.005	0.005
Repeal State*Shortly After Repeal	-0.025***	-0.025***	-0.025***	-0.024***
	0.006	0.006	0.006	0.006
N	595,896	550,060	552,276	544,829

Note: See Table 5.36

Table 5.39 Effects of State Prevailing Wage Law Repeal Real Hourly Wages a Year or More after Repeal by Skill 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	After Repeal = A year or more			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*After Repeal*Construction*Low Skill	-0.031 **	-0.015	-0.033 **	-0.026 *
	0.015	0.018	0.016	0.015
Repeal State*After Repeal*Construction	0.006	-0.006	0.013	0.006
	0.009	0.013	0.011	0.009
Repeal State*After Repeal*Low Skill	0.025 ***	0.025 ***	0.025 ***	0.025 ***
	0.008	0.008	0.008	0.008
Repeal State*After Repeal	-0.021 ***	-0.021 ***	-0.021 ***	-0.021 ***
	0.004	0.004	0.004	0.004
N	595,896	543,411	558,538	592,224

I compared low-skill construction workers to all other construction workers classified as craftsman. As discussed earlier the category craftsman represents the vast majority of construction workers. In Table 5.39, a year or more after repeal I find that the wages of low-skill construction workers declined relative to all other construction workers in my reference group by 3 percent. In Table 5.40, long after repeal (three or more years), I find that the wages of the low skill fall by 3 percent relative to the reference group. In Table 5.41, relative to the same reference group five or more years after repeal I find the wages of the low skill fall by 3.5 percent. Considering a more refined group of high-skill construction workers in Table 5.39 (column *vs. High Skill*) my new category of low-skill construction workers is compared to the occupations I have classified as high skill. Here and in Tables 5.40 and 5.41 there is no evidence that low-skill construction occupations experience a decline in wages relative to high-skill construction workers. However as in

Table 5.40 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After Repeal = 3 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	-0.031 *	-0.008	-0.034 **	-0.024
	0.016	0.019	0.017	0.016
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.031	-0.034	-0.032	-0.033 *
	0.019	0.023	0.021	0.019
Repeal State*Long After Repeal*Construction	0.005	-0.013	0.013	0.003
	0.010	0.014	0.012	0.010
Repeal State*Shortly After Repeal*Construction	0.008	0.013	0.012	0.012
	0.012	0.018	0.015	0.012
Repeal State*Long After Repeal*Low Skill	0.027 ***	0.028 ***	0.027 ***	0.027 ***
	0.009	0.009	0.009	0.009
Repeal State*Shortly After Repeal*Low Skill	0.020 **	0.020 **	0.020 **	0.020 **
	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal	-0.021 ***	-0.021 ***	-0.021 ***	-0.021 ***
	0.005	0.005	0.005	0.005
Repeal State*Shortly After Repeal	-0.021 ***	-0.022 ***	-0.021 ***	-0.021 ***
	0.005	0.005	0.005	0.005
N	595,896	543,411	558,538	592,224

Table 5.41 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	-0.035 **	-0.014	-0.044 **	-0.032 *
	0.017	0.020	0.018	0.017
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.017	-0.004	-0.022	-0.017
	0.019	0.023	0.021	0.019
Repeal State*Long After Repeal*Construction	0.004	-0.012	0.019	0.007
	0.010	0.015	0.013	0.010
Repeal State*Shortly After Repeal*Construction	0.005	-0.006	0.013	0.008
	0.011	0.017	0.014	0.012
Repeal State*Long After Repeal*Low Skill	0.029 ***	0.030 ***	0.029 ***	0.029 ***
	0.009	0.009	0.009	0.009
Repeal State*Shortly After Repeal*Low Skill	0.003	0.003	0.003	0.003
	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal	-0.022 ***	-0.022 ***	-0.022 ***	-0.022 ***
	0.005	0.005	0.005	0.005
Repeal State*Shortly After Repeal	-0.024 ***	-0.024 ***	-0.024 ***	-0.024 ***
	0.006	0.006	0.006	0.006
N	595,896	543,411	558,538	592,224

the previous tables I also find no evidence of an overall negative effect of repeal on the hourly wages of all constructions workers; all here means the occupations classified as high skill, semiskill, and laborers, which also is the smallest sample of construction occupations we have defined thus far.

In the column labeled *vs. Medium Skill* in Table 5.39 I find that the wages of low-skill construction workers decreased relative to medium-skill construction workers a year or more after repeal by 3 percent. In the column *vs. Medium Skill* in Tables 5.40 (three or more years after repeal) and 5.41 (five or more years after repeal) the wages of low-skill construction workers decreased relative to medium-skill construction workers by 3 and 4 percent.

In the final columns of the three tables labeled *vs. High and Medium Skill*, low-skill construction workers are compared relative to a combination of the reference groups from the previous two columns. In Table 5.39 a year or more after repeal the wages of low-skill construction occupations declined relative to high- and medium-skill occupations by 2.6 percent. In Table 5.40 the coefficient on the interaction term *Repeal State*Long After Repeal*Construction*Low Skill*, where the period long after repeal is three or more years, is no longer significant. Lengthening the period after repeal to five or more years I find that the wages of low-skill construction occupations declined relative to the higher-skilled groups by 3.2 percent (Table 5.41). This analysis of real hourly earnings by skill clearly shows that negative effect of repeal on hourly wages is concentrated among the six construction occupations we have classified as low-skill: asbestos workers, bricklayers, painters, plasterers, roofers and laborers.

5.4.5 Real hourly wages by skill and union membership. In Tables 5.42 through 5.46 I estimate the impact of repeal on real hourly earnings by skill and union membership. To produce these estimates I applied equations 3.7 and 3.8 first to a sample of only nonunion members and then again to a sample of only union members. In Table 5.42 I compare the effects of repeal on the hourly earnings of low-skill construction occupations to higher-skilled occupations a year or more after repeal. In the first half of the table the results from our nonunion sample show that the hourly wages of lesser-skilled workers fall relative to higher-skilled workers in range between 5 and 7 percent. Conversely in the second half of Table 5.42 I find no evidence that the wages of low-skill union members fall relative to higher-skill union members. Furthermore only in the column *vs. Crafstman* is there evidence that relative to nonconstruction union members the wages of construction union members declined as a result of repeal (3 percent).

Tables 5.43 and 5.44 divide the period following repeal into shortly and long after with the first reporting the results for nonunion workers and the second for union members. Among nonunion members once again I find that long after repeal the hourly wages of low-skill occupations dropped relative to higher skilled construction occupations between 3 and 6 percent. Of interest shortly after repeal, which is one to two years, the wages of nonunion members decline in a range of 6 to 9 percent. Significant results shortly after repeal is strong indication that unlike unionized labor markets, wages in the nonunion construction labor market are not characterized by downward rigidity.

In Table 5.44 I again find no evidence that low-skill construction union members experience wage declines relative to higher skilled union members. Unlike Table 5.42 I do find that all construction union members experience wage declines in a range of 5 to 6

Table 5.42 Effects of State Prevailing Wage Law Repeal Real Hourly Wages a Year or More after Repeal by Skill and by Union Membership 1977-2002

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	After Repeal = A year or more			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
	Nonunion			
Repeal State*After Repeal*Construction*Low Skill	-0.049 ***	-0.046 **	-0.066 ***	-0.052 ***
	0.018	0.022	0.019	0.018
Repeal State*After Repeal*Construction	0.001	0.004	0.025 *	0.014
	0.011	0.018	0.013	0.011
Repeal State*After Repeal*Low Skill	0.035 ***	0.038 ***	0.038 ***	0.034 ***
	0.009	0.009	0.009	0.010
Repeal State*After Repeal	-0.012 ***	-0.021 ***	-0.020 ***	-0.020 ***
	0.005	0.005	0.005	0.005
N	467,091	346,859	360,828	372,557
	Union			
Repeal State*After Repeal*Construction*Low Skill	0.015	0.031	0.032	0.004
	0.033	0.036	0.037	0.032
Repeal State*After Repeal*Construction	-0.031 *	-0.036	-0.035	-0.024
	0.018	0.024	0.025	0.018
Repeal State*After Repeal*Low Skill	-0.055 ***	-0.062 ***	-0.063 ***	-0.046 ***
	0.016	0.016	0.016	0.017
Repeal State*After Repeal	-0.006	-0.004	-0.004	-0.004
	0.008	0.008	0.008	0.008
N	145,765	112,500	110,263	119,526

Table 5.43 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill for Nonunion Members

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Nonunion			
	Long After Repeal = 3 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	-0.032 *	-0.041 *	-0.055 ***	-0.045 **
	0.019	0.024	0.021	0.019
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.090 ***	-0.049	-0.090 ***	-0.063 **
	0.025	0.033	0.027	0.025
Repeal State*Long After Repeal*Construction	-0.002	0.010	0.025 *	0.016
	0.012	0.019	0.014	0.012
Repeal State*Shortly After Repeal*Construction	0.008	-0.019	0.023	0.006
	0.016	0.027	0.019	0.016
Repeal State*Long After Repeal*Low Skill	0.028 ***	0.030 ***	0.030 ***	0.028 ***
	0.010	0.010	0.010	0.011
Repeal State*Shortly After Repeal*Low Skill	0.051 ***	0.055 ***	0.055 ***	0.045 ***
	0.012	0.012	0.012	0.013
Repeal State*Long After Repeal	-0.010 **	-0.019 ***	-0.019 ***	-0.019 ***
	0.005	0.006	0.006	0.006
Repeal State*Shortly After Repeal	-0.015 **	-0.024 ***	-0.024 ***	-0.024 ***
	0.006	0.007	0.007	0.007
N	467,091	346,859	360,828	372,557

Table 5.44 Long after Repeal (Three or More Years) and Shortly after Repeal (One to Two Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill for Union Members

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Union			
	Long After Repeal = 3 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.025	0.046	0.043	0.022
	0.038	0.041	0.042	0.037
Repeal State*Shortly After Repeal*Construction*Low Skill	0.000	0.007	0.014	-0.023
	0.043	0.047	0.048	0.043
Repeal State*Long After Repeal*Construction	-0.047 **	-0.064 **	-0.060 **	-0.048 **
	0.021	0.027	0.029	0.021
Repeal State*Shortly After Repeal*Construction	-0.006	0.009	0.005	0.014
	0.024	0.031	0.033	0.024
Repeal State*Long After Repeal*Low Skill	-0.073 ***	-0.075 ***	-0.075 ***	-0.067 ***
	0.019	0.019	0.019	0.020
Repeal State*Shortly After Repeal*Low Skill	-0.029	-0.044 **	-0.044 **	-0.017
	0.021	0.021	0.021	0.022
Repeal State*Long After Repeal	-0.001	0.004	0.004	0.003
	0.009	0.010	0.010	0.010
Repeal State*Shortly After Repeal	-0.012	-0.016	-0.016	-0.016
	0.010	0.011	0.011	0.011
N	145,765	112,500	110,263	119,526

Table 5.45 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill for Nonunion Members

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Nonunion			
	Long After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	-0.039 *	-0.044 *	-0.063 ***	-0.048 **
	0.020	0.025	0.022	0.020
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.063 ***	-0.022	-0.064 **	-0.036
	0.023	0.029	0.025	0.024
Repeal State*Long After Repeal*Construction	-0.006	0.004	0.024	0.013
	0.012	0.020	0.015	0.012
Repeal State*Shortly After Repeal*Construction	0.005	-0.027	0.017	-0.001
	0.014	0.023	0.018	0.015
Repeal State*Long After Repeal*Low Skill	0.027 **	0.028 ***	0.028 ***	0.023 **
	0.011	0.011	0.011	0.011
Repeal State*Shortly After Repeal*Low Skill	0.035 ***	0.030 **	0.030 **	0.019
	0.012	0.012	0.012	0.013
Repeal State*Long After Repeal	-0.009 *	-0.017 ***	-0.016 ***	-0.016 ***
	0.005	0.006	0.006	0.006
Repeal State*Shortly After Repeal	-0.021 ***	-0.021 ***	-0.021 ***	-0.020 ***
	0.006	0.007	0.007	0.007
N	467,091	346,859	360,828	372,557

Table 5.46 Long after Repeal (Five or More Years) and Shortly after Repeal (One to Four Years), Effects of State Prevailing Wage Law Repeal on Real Hourly Wages by Skill for Union Members

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Union			
	Long After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.007	0.038	0.008	-0.003
	0.040	0.044	0.045	0.040
Repeal State*Shortly After Repeal*Construction*Low Skill	0.038	0.065	0.072	0.029
	0.047	0.050	0.052	0.046
Repeal State*Long After Repeal*Construction	-0.046 **	-0.070 **	-0.038	-0.039 *
	0.022	0.029	0.031	0.022
Repeal State*Shortly After Repeal*Construction	-0.005	-0.005	-0.008	0.006
	0.025	0.033	0.035	0.025
Repeal State*Long After Repeal*Low Skill	-0.069 ***	-0.074 ***	-0.074 ***	-0.064 ***
	0.020	0.020	0.020	0.021
Repeal State*Shortly After Repeal*Low Skill	-0.070 ***	-0.105 ***	-0.106 ***	-0.079 ***
	0.023	0.023	0.023	0.024
Repeal State*Long After Repeal	-0.008	-0.004	-0.004	-0.004
	0.010	0.011	0.011	0.011
Repeal State*Shortly After Repeal	-0.035 ***	-0.022 *	-0.022 *	-0.022 *
	0.011	0.012	0.012	0.012
N	145,765	112,500	110,263	119,526

percent. Also reflecting the wage rigidity of collective bargained contacts in Table 5.44 there is no significant effect of repeal in the short run. Finally in Table 5.45 and 5.46 the period shortly after repeal is expanded to one to four years after repeal and long after repeal to five or more years. Long after repeal in the construction industry the wages of low-skill nonunion members decline relative to high-skill nonunion members by 4 to 6 percent.

In Table 5.46 there is no evidence that long after repeal low-skill union members lose relative to high-skill union members as a result of repeal. Long after repeal all construction union members lose relative to their nonconstruction union counterparts in the range of 4 to 7 percent.

5.5 Pension and Health Coverage

5.5.1 All construction workers. Table 5.47 presents the coefficients, standard errors, and odds ratios generated from equations 3.9 and 3.10. In all specifications, control variables for human capital, time, time*construction and state fixed effects are included in the model but not reported in the tables. In the first two specifications in Table 5.47, the focus variable is the interaction term *Repeal State*After Repeal*Construction* which identifies construction workers in repeal states a year or more after repeal. In contrast to the specification reported in column 1, in column 2 state construction fixed effects are included. This result indicates that the odds of a construction worker having a pension were between 19% and 11% lower as a result of repeal.

Table 5.47 Effects of State Prevailing Wage Law Repeal on Blue-Collar Pension Coverage 1979-2001

Dependent=Natural Log (P_{ist} / 1-P_{ist})	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	-0.210***	-0.121*		
	0.048	0.067		
	-18.93%	-11.38%		
Repeal State*After Repeal	0.086***	0.080***		
	0.023	0.023		
	8.93%	8.33%		
Repeal State*Long After Repeal*Construction			-0.162**	-0.176**
			0.074	0.079
			-14.93%	-16.12%
Repeal State*Shortly After Repeal*Construction			-0.066	-0.123
			0.081	0.084
			-6.39%	-11.59%
Repeal State*Long After Repeal			0.112***	0.113**
			0.026	0.029
			11.80%	11.95%
Repeal State*Shortly After Repeal			0.039	0.074**
			0.028	0.030
			4.02%	7.67%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	614,026	614,026	614,026	614,026

Notes: ***, ** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients followed by the percent change in odds. The percent change in the odds is calculated as follows: (eβ-1)*100. Data set drawn from March Supplement of the Current Population Survey (CPS), 1980 (1979) to 2002 (2001). All specifications control for time, time*construction, and state fixed effects. In columns 1 and 2 "after repeal" is defined as the year following repeal. In column 3, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 4 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. Observations weighted using CPS supplement weights.

In columns 3 and 4 of Table 5.47, I distinguish between shortly after repeal and long after repeal in order to capture the delayed effect of repeal that would be associated with labor contracts that expire sometime after repeal is effective. The focus variable is the interaction term *Repeal State*Long After Repeal*Construction*. In column 3, long after repeal is defined as three or more years after repeal the odds of pension coverage for construction workers are 15 percent lower. In column 4 where long after repeal is defined as 5 or more years after repeal the odds of pension coverage for construction workers in repeal states decline by 16%.

Table 5.48 repeats the four specifications described in Table 5.47 with health insurance coverage as the dependent variable. The decline in the odds of health coverage for construction workers ranges from 19 to 6 percent depending on the specification. It should also be noted that the coefficient of interest is insignificant when interaction terms for each states construction labor market are present. However in columns three and four after dividing the period following repeal into shortly and long after repeal even in the presence of state*construction fixed effects coefficients of interest are significant at the 10 percent level. Three or more years following repeal the odds of pension coverage decline by 11 percent. Five or more years after repeal the odds of pension coverage decline by 15 percent.

5.5.2 Pension and health coverage by race. The logistic regression coefficients reported in Tables 5.49 and 5.50, measure the differences in the impact of repeal by race on pension and health insurance coverage. As in previous tables, controls for human capital, as well as fixed effects for time, *time*construction* and state are present but not reported in the tables. Unlike the previous tables, all specifications control for

Table 5.48 Effects of State Prevailing Wage Law Repeal on Blue-Collar Health Insurance Coverage 1979-2001

Dependent=Natural Log (H_{ist}/ 1-H_{ist})	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	-0.206***	-0.065		
	0.044	0.061		
	-18.62%	-6.33%		
Repeal State*After Repeal	0.105***	0.089***		
	0.022	0.023		
	11.10%	9.33%		
Repeal State*Long After Repeal*Construction			-0.116*	-0.157**
			0.0665	0.072
			-10.98%	-14.51%
Repeal State*Shortly After Repeal*Construction			0.0095	-0.079
			0.0729	0.075
			0.95%	-7.56%
Repeal State*Long After Repeal			0.107***	0.114***
			0.025	0.028
			11.32%	12.02%
Repeal State*Shortly After Repeal			0.065**	0.043
			0.027	0.029
			6.72%	4.38%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	614,026	614,026	614,026	614,026

Notes: See Table 5.47.

Table 5.49 Effects of State Prevailing Wage Law Repeal on Blue Collar Pension Coverage by Race 1979-2001

Dependent=Natural Log (P_{ist} / 1-P_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Black	-0.062		
	0.225		
	-5.96%		
Repeal State*After Repeal*Construction	-0.106		
	0.071		
	-10.03%		
Repeal State*After Repeal*Black	0.012		
	0.066		
	1.16%		
Repeal State*After Repeal	0.074 ***		
	0.025		
	7.66%		
Repeal State*Long After Repeal*Construction*Black		0.005	0.148
		0.240	0.253
		0.48%	15.90%
Repeal State*Shortly After Repeal*Construction*Black		-0.291	-0.039
		0.297	0.288
		-25.26%	-3.83%
Repeal State*Long After Repeal*Construction		-0.150 *	-0.178 **
		0.078	0.085
		-13.96%	-16.26%
Repeal State*Shortly After Repeal*Construction		-0.045	-0.122
		0.085	0.089
		-4.44%	-11.46%
Repeal State*Long After Repeal*Black		0.102	0.062
		0.073	0.079
		10.71%	6.36%
Repeal State*Shortly After Repeal*Black		-0.127	-0.108
		0.080	0.086
		-11.93%	-10.26%
Repeal State*Long After Repeal		0.092 ***	0.098 ***
		0.028	0.031
		9.58%	10.34%
Repeal State*Shortly After Repeal		0.052 *	0.082 **
		0.030	0.033
		5.28%	8.51%
State*Construction Fixed Effects	Yes	Yes	Yes
N	614,026	614,026	614,026

Notes: In column 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 3 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. See Table 5.47 for additional notes.

Table 5.50 Effects of State Prevailing Wage Law Repeal on Blue Collar Health Insurance Coverage by Race 1979-2001

Dependent=Natural Log (H_{ist} / 1-H_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Black	-0.012		
	0.198		
	-1.14%		
Repeal State*After Repeal*Construction	-0.062		
	0.065		
	-5.96%		
Repeal State*After Repeal*Black	-0.009		
	0.062		
	-0.91%		
Repeal State*After Repeal	0.091 ***		
	0.025		
	9.48%		
Repeal State*Long After Repeal*Construction*Black		0.044	0.166
		0.209	0.220
		4.49%	18.07%
Repeal State*Shortly After Repeal*Construction*Black		-0.106	-0.060
		0.248	0.242
		-10.09%	-5.84%
Repeal State*Long After Repeal*Construction		-0.121 *	-0.175 **
		0.071	0.077
		-11.43%	-16.04%
Repeal State*Shortly After Repeal*Construction		0.023	-0.077
		0.077	0.080
		2.37%	-7.40%
Repeal State*Long After Repeal*Black		-0.003	0.000
		0.068	0.074
		-0.32%	-0.03%
Repeal State*Shortly After Repeal*Black		-0.023	-0.049
		0.075	0.079
		-2.28%	-4.82%
Repeal State*Long After Repeal		0.108 ***	0.114 ***
		0.028	0.030
		11.40%	12.10%
Repeal State*Shortly After Repeal		0.068 **	0.049
		0.030	0.032
		7.02%	5.05%
State*Construction Fixed Effects	Yes	Yes	Yes
N	614,026	614,026	614,026

Notes: See Table 5.49.

*state*construction* fixed effects and include additional controls for *time*construction*Black* and *state*construction*Black* fixed effects.

The focus variables in column 1 of Table 5.49 are *Repeal State*After Repeal*Construction*Black* and *Repeal State*After Repeal*Construction*. Although the odds of pension coverage for all construction workers (Black and non-Black) declined by 10 percent, this effect is not statistically significant. Likewise the odds of pension coverage for Black construction workers declined, but the effect is statistically insignificant. Three or more years after repeal the odds of pension coverage for all construction workers declined by 14 percent; five or more years after repeal the odds of coverage decline by 16 percent. Both of these results are consistent with the coefficients in columns 3 and 4 of Table 5.43. Because neither of the coefficients on the interaction term *Repeal State*Long After Repeal*Construction*Black* was significant, I can find no evidence that repeal benefits or harms Black construction workers relative to all other workers.

The coefficients for health coverage reported in Table 5.50 follow the same general pattern as those for pension coverage. A year or more after repeal (column 1) none of the coefficients of interest are different from 0. Three or more years after repeal (column 2) the odds of health coverage decline by 11 percent for all construction workers. Five or more years after repeal (column 3), I find that the odds of health coverage for Black and non-Black construction workers decline by 16 percent. There is no evidence of a relative (relative to the pattern for all construction workers) increase or decrease in the odds of health coverage for Black construction workers three or five years following repeal.

5.5.3 Benefits coverage by union status. Table 5.51 and 5.52 present the coefficients from equations 3.9 and 3.10 which allow for a differential impact of repeal upon benefits coverage by union status. This analysis suffers from two handicaps; the first is absence of data on union status prior to 1983 in the March supplement. The second is the availability of union status after 1983 for only a subset of the March sample. The absence of data prior to 1983 means my analysis begins after repeals were already in effect in Alabama, Arizona, Florida, and Utah.[3] In total both limitations reduce the sample of all workers from 614,026 to 99,398. These limitations explain why contrary to previous models there is no evidence in either Table 5.51 or 5.52 of long-run negative effect of repeal on the odds of pension or health coverage for all (union and non-union) construction workers.

Of the 69,335 construction workers in this sample, I know the union status of just 10,095. In Figure 5.3 I pool three years of data on benefits coverage by union status for construction workers living in experimental states at beginning and end our period of analysis. What limited data I do have suggests that pension and health insurance coverage increased for unionized construction workers by the end of the period. As discussed at the beginning of the chapter the percentage of union workers with both a pension and health insurance is similar to the percentage of nonunion workers with neither. Thus one way of illuminating the connection between repeal-induced changes in union membership and benefits coverage is to explore the impact of repeal on number of workers with both a pension and health coverage as is done in Tables 5.53 and 5.54.

[3] Utah repealed its law in 1981, and this analysis assumes that repeal was effective in the year following repeal. Utah's law is assumed to take effect in 1982, because the March supplement asks about health and pension coverage on the job last year. Data collected in 1983 provides information on coverage in 1982.

Table 5.51 Effects of State Prevailing Wage Law Repeal on Pension Coverage by Union Membership 1979-2001

Dependent=Natural Log (P_{ist} / 1-P_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Union	0.388		
	0.482		
	47.42%		
Repeal State*After Repeal*Construction	-0.135		
	0.256		
	-12.63%		
Repeal State*After Repeal*Union	-0.032		
	0.162		
	-3.13%		
Repeal State*After Repeal	0.023		
	0.072		
	2.35%		
Repeal State*Long After Repeal*Construction*Union		-0.103	0.315
		0.572	0.637
		-9.78%	37.00%
Repeal State*Shortly After Repeal*Construction*Union		1.122 *	-0.026
		0.574	0.644
		207.13%	-2.58%
Repeal State*Long After Repeal*Construction		0.178	0.075
		0.275	0.292
		19.45%	7.78%
Repeal State*Shortly After Repeal*Construction		-0.792 **	-0.264
		0.356	0.301
		-54.70%	-23.19%
Repeal State*Long After Repeal*Union		0.264	0.360
		0.213	0.245
		30.24%	43.30%
Repeal State*Shortly After Repeal*Union		-0.213	0.675 ***
		0.176	0.260
		-19.15%	96.32%
Repeal State*Long After Repeal		-0.069	-0.031
		0.082	0.091
		-6.63%	-3.02%
Repeal State*Shortly After Repeal		0.107	0.017
		0.080	0.090
		11.34%	1.71%
State*Construction Fixed Effects	Yes	Yes	Yes
N	99,398	99,398	99,398

Notes: See Table 5.49.

Table 5.52 Effects of State Prevailing Wage Law Repeal on Blue-Collar Health Insurance Coverage by Union Membership 1979-2001

Dependent=Natural Log (H_{ist} / 1-H_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Union	0.127		
	0.560		
	13.54%		
Repeal State*After Repeal*Construction	-0.046		
	0.212		
	-4.47%		
Repeal State*After Repeal*Union	-0.064		
	0.198		
	-6.18%		
Repeal State*After Repeal	-0.006		
	0.067		
	-0.56%		
Repeal State*Long After Repeal*Construction*Union		-0.885	-0.267
		0.734	0.774
		-58.71%	-23.39%
Repeal State*Shortly After Repeal*Construction*Union		1.087	0.327
		0.731	0.793
		196.48%	38.67%
Repeal State*Long After Repeal*Construction		0.086	0.038
		0.228	0.244
		8.95%	3.87%
Repeal State*Shortly After Repeal*Construction		-0.282	-0.097
		0.258	0.242
		-24.57%	-9.27%
Repeal State*Long After Repeal*Union		-0.034	0.007
		0.288	0.343
		-3.35%	-87.33%
Repeal State*Shortly After Repeal*Union		-0.082	-0.037
		0.211	0.346
		-7.85%	-3.67%
Repeal State*Long After Repeal		-0.019	-0.051
		0.078	0.086
		-1.89%	-4.94%
Repeal State*Shortly After Repeal		0.007	-0.051
		0.077	0.084
		0.72%	-5.01%
State*Construction Fixed Effects	Yes	Yes	Yes
N	99,398	99,398	99,398

Notes: See Table 5.49.

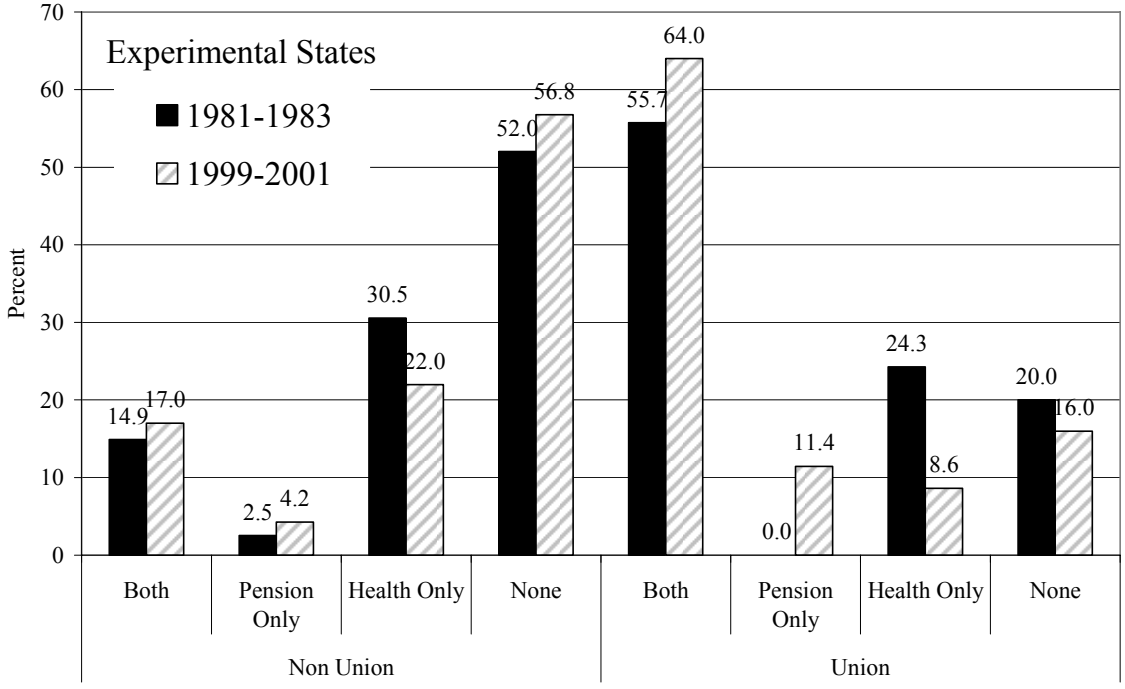

Figure 5.3 Overtime Benefits Coverage among Unionized Construction Workers in Experimental States Has Increased

In Table 5.53, a year or more following repeal the odds of a worker having both a pension and health insurance declined by 24 percent. Adding state construction fixed effects the change in odds a year after repeal fell to 16 percent. Separating short-run effects from long-run effects repeal reduces the long-run odds of workers having both a pension and health insurance by 23 and 24 percent (depending on the definition of the long run). Repeal has changed the composition of the construction labor market with the principle change being the disappearance of union members. As the union sector has contracted, the percentage of workers with both a pension and health insurance declined.

Table 5.53 Effects of State Prevailing Wage Law Repeal on Both Pension and Health Coverage 1979-2001

Dependent=Natural Log (PH_{ist} / 1-PH_{ist})	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	-0.269***	-0.179**		
	0.051	0.070		
	-23.55%	-16.40%		
Repeal State*After Repeal	0.080***	0.075***		
	0.023	0.024		
	8.31%	7.80%		
Repeal State*Long After Repeal*Construction			-0.265***	-0.278***
			0.0774	0.084
			-23.29%	-24.25%
Repeal State*Shortly After Repeal*Construction			-0.0587	-0.115
			0.0838	0.088
			-5.70%	-10.89%
Repeal State*Long After Repeal			0.101***	0.107***
			0.027	0.030
			10.62%	11.30%
Repeal State*Shortly After Repeal			0.043	0.076**
			0.029	0.031
			4.35%	7.85%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	614,026	614,026	614,026	614,026

Notes: See Table 5.47.

Table 5.54 explores the impact of repeal by race on the odds of construction workers being covered by both a pension and health insurance. The odds of pension and health coverage for all construction workers (Black and non-Black) decreased by 15 percent a year or more after repeal. The coefficient on the interaction term capturing a differential impact of repeal for Black workers is not significantly different from zero.

Long after repeal the odds of construction workers having both a pension and health insurance declined by 22 percent three or more years after repeal and by 23

Table 5.54 Effects of State Prevailing Wage Law Repeal on Pension and Health Coverage by Race 1979-2001

Dependent=Natural Log (PH_{ist} / 1-PH_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Black	-0.075		
	0.245		
	-7.26%		
Repeal State*After Repeal*Construction	-0.165 **		
	0.074		
	-		
	15.22%		
Repeal State*After Repeal*Black	-0.004		
	0.068		
	-0.40%		
Repeal State*After Repeal	0.072 ***		
	0.026		
	7.42%		
Repeal State*Long After Repeal*Construction*Black		-0.069	0.032
		0.261	0.274
		-6.65%	3.29%
Repeal State*Shortly After Repeal*Construction*Black		-0.094	-0.011
		0.312	0.308
		-9.01%	-1.09%
Repeal State*Long After Repeal*Construction		-0.246 ***	-0.267 ***
		0.082	0.089
		-21.78%	-23.41%
Repeal State*Shortly After Repeal*Construction		-0.056	-0.119
		0.088	0.093
		-5.41%	-11.25%
Repeal State*Long After Repeal*Black		0.076	0.027
		0.076	0.082
		7.94%	2.74%
Repeal State*Shortly After Repeal*Black		-0.124	-0.110
		0.083	0.090
		-11.69%	-10.43%
Repeal State*Long After Repeal		0.085 ***	0.099 ***
		0.029	0.032
		8.88%	10.35%
Repeal State*Shortly After Repeal		0.055 *	0.084 **
		0.031	0.034
		5.66%	8.77%
State*Construction Fixed Effects	Yes	Yes	Yes
N	614,026	614,026	614,026

Notes: See Table 5.49.

percent five or more years after repeal. Again in the long run there is no relative difference in the effect of repeal on the odds of benefits coverage for Black construction workers when compared to overall trends.

5.5.4 Benefits coverage by skill. My analysis of simple differences in rates of coverage by pensions, health insurance, and coverage by both fringes revealed, contrary to my expectations, that less skilled construction occupations were not disproportionately harmed by repeal. Particularly for laborers, this finding is driven by large declines in coverage across all state groupings. For this reason in particular I will simplify the following discussion by only reporting in this chapter the coefficients from equations 3.11 and 3.12 for a series of samples that combine semiskill occupations and laborers into the same category (low skill). To summarize those results I find no evidence that repeal harms or benefits construction laborers relative to any of the higher-skilled reference groups with respect to pension coverage, health coverage, or coverage by both fringes.

My analysis of pension coverage among low-skill construction occupations is reported in Tables 5.55, 5.56 and 5.57. Beginning in Table 5.55 where the period after repeal is a year or more after repeal I find no evidence of an effect of repeal on pension coverage for either low skill construction laborers or construction workers overall.

In Table 5.56 where I divide the period after repeal into a short- and long-run effect, again I find no evidence that repeal benefits or harms low-skill construction occupations relative to all other construction occupations included in the sample. I do find in two of the four specifications evidence that the odds of pension coverage decline for all of the construction workers included in the sample three or more years after repeal.

Table 5.55 Effects of State Prevailing Wage Law Repeal a Year or More after Repeal on Pension Coverage by Skill 1979-2001

Dependent=Natural Log (P_{ist} / 1-P_{ist})	*Logit*			
	After Repeal = a year or more			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*After Repeal*Construction*Low Skill	0.109	0.018	0.131	0.081
	0.175	0.198	0.193	0.174
	11.51%	1.78%	13.95%	8.44%
Repeal State*After Repeal*Construction	-0.118	-0.051	-0.152	-0.108
	0.093	0.133	0.127	0.095
	-11.13%	-4.98%	-14.10%	-10.19%
Repeal State*After Repeal*Low Skill	0.032	0.032	0.030	0.030
	0.087	0.087	0.086	0.086
	3.20%	3.21%	2.99%	3.08%
Repeal State*After Repeal	0.033	0.034	0.030	0.029
	0.044	0.044	0.044	0.044
	3.39%	3.44%	3.04%	2.90%
N	235,246	213,864	220,755	234,000

Specifically among all construction workers classified as either low skill or craftsman (see the column labeled *vs. Craftsman* in Table 5.56) the odds of pension coverage relative to all other similarly skilled workers declined by 18 percent. I find the same result in the column labeled *vs. High and Medium Skill* where the only difference between the two samples is the inclusion of 1,246 construction workers whose occupation under the general classification scheme is craftsman but under a more detailed division would be classified as other and therefore excluded from the fourth column of Table 5.56.

In Table 5.57 the definition long after repeal is pushed forward to include observations collected five or more years after repeal. Although I continue to find no

Table 5.56 Effects of State Prevailing Wage Law Repeal on Pension Coverage by Skill, Shortly (One to Two Years) and Long (Three or More Years) after Repeal, 1979-2002

Dependent=Natural Log (P_{ist} / 1-P_{ist})	*Logit* *After Repeal = 3 or more years* *Low Skill*			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.201	0.153	0.188	0.188
	0.195	0.220	0.213	0.193
	22.29%	16.54%	20.64%	20.68%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.022	-0.167	0.054	-0.069
	0.208	0.236	0.232	0.208
	-2.18%	-15.39%	5.57%	-6.67%
Repeal State*Long After Repeal*Construction	-0.199 *	-0.168	-0.186	-0.191 *
	0.103	0.147	0.138	0.104
	-18.06%	-15.46%	-16.96%	-17.41%
Repeal State*Shortly After Repeal*Construction	-0.001	0.110	-0.106	0.013
	0.112	0.158	0.154	0.114
	-0.12%	11.57%	-10.02%	1.26%
Repeal State*Long After Repeal*Low Skill	-0.005	-0.005	-0.012	-0.011
	0.096	0.097	0.096	0.096
	-0.47%	-0.47%	-1.14%	-1.04%
Repeal State*Shortly After Repeal*Low Skill	0.080	0.080	0.084	0.085
	0.103	0.103	0.103	0.103
	8.34%	8.35%	8.78%	8.85%
Repeal State*Long After Repeal	0.064	0.065	0.062	0.060
	0.049	0.049	0.049	0.049
	6.62%	6.66%	6.36%	6.23%
Repeal State*Shortly After Repeal	-0.008	-0.008	-0.013	-0.014
	0.052	0.052	0.052	0.052
	-0.81%	-0.76%	-1.30%	-1.41%
N	235,246	213,864	220,755	234,000

Table 5.57 Effects of State Prevailing Wage Law Repeal on Pension Coverage by Skill, Shortly (One to Four Years) and Long (Five or More Years) after Repeal, 1979-2001

Dependent=Natural Log (P_{ist} / $1-P_{ist}$)	*Logit*			
	After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.171	0.119	0.067	0.113
	0.210	0.237	0.229	0.208
	18.63%	12.60%	6.89%	11.94%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.430 *	-0.426 *	-0.479 *	-0.449 **
	0.228	0.256	0.249	0.227
	-34.92%	-34.69%	-38.07%	-36.17%
Repeal State*Long After Repeal*Construction	-0.207 *	-0.169	-0.102	-0.154
	0.111	0.160	0.148	0.113
	-18.66%	-15.57%	-9.66%	-14.30%
Repeal State*Shortly After Repeal*Construction	-0.044	-0.082	-0.012	-0.056
	0.115	0.166	0.157	0.118
	-4.30%	-7.84%	-1.17%	-5.45%
Repeal State*Long After Repeal*Low Skill	-0.094	-0.094	-0.104	-0.102
	0.106	0.106	0.105	0.105
	-8.96%	-8.98%	-9.90%	-9.72%
Repeal State*Shortly After Repeal*Low Skill	0.133	0.134	0.130	0.134
	0.109	0.110	0.109	0.109
	14.20%	14.35%	13.91%	14.36%
Repeal State*Long After Repeal	0.064	0.064	0.063	0.062
	0.053	0.053	0.053	0.053
	6.58%	6.62%	6.50%	6.34%
Repeal State*Shortly After Repeal	0.048	0.048	0.045	0.043
	0.055	0.055	0.055	0.055
	4.89%	4.86%	4.56%	4.36%
N	235,246	213,864	220,755	234,000

evidence of a long-run differential in the effect of repeal on the odds of pension coverage for low-skill occupations I do find a short-run negative on the odds of pension coverage for low-skill construction workers relative to all other construction workers, in all four specifications. In the column labeled *vs. Craftsman*, five or more years after repeal the odds of pension coverage decline by 19 percent for all construction workers included in the sample.

With respect to health insurance coverage in Tables 5.58, 5.59, and 5.60 I continue to find no evidence that the effect of repeal upon low skill construction occupations differed from that impacting all construction workers. In Table 5.58 where the period after repeal is defined as a year or more only in the column *vs. High Skill* is there evidence of an overall negative effect for all construction workers included in the sample. Here the sample is limited to include just low (semiskill and laborers) and high-skill occupations.

In Table 5.59 where *long after repeal* is defined as three or more years after repeal in three of the four different samples, the odds of health coverage decline for all construction workers in the sample. In Table 5.60 I also find when long after repeal is defined as five or more years after repeal that there is evidence in two of the four samples of a negative effect of repeal on the odds of health coverage for all construction workers.

In two of the samples in Table 5.60, *vs. Medium Skill* and *vs. High and Medium Skill*, I again find that the odds of health coverage decline one to four years after repeal (*Repeal State*Shortly After Repeal*Construction*Low Skill*) for low-skill construction workers relative to all other workers.

Table 5.58 Effects of State Prevailing Wage Law Repeal a Year or More after Repeal on Health Coverage by Skill 1979-2001

Dependent=Natural Log (H_{ist} / 1-H_{ist})	*Logit*			
	After Repeal = a year or more			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*After Repeal*Construction*Low Skill	-0.013	0.153	-0.177	-0.039
	0.154	0.186	0.168	0.153
	-1.32%	16.57%	-16.21%	-3.80%
Repeal State*After Repeal*Construction	-0.086	-0.280 **	0.050	-0.093
	0.093	0.140	0.116	0.094
	-8.19%	-24.43%	5.13%	-8.85%
Repeal State*After Repeal*Low Skill	-0.031	-0.037	-0.031	-0.031
	0.085	0.085	0.084	0.084
	-3.00%	-3.65%	-3.04%	-3.00%
Repeal State*After Repeal	0.120 **	0.122 **	0.121 **	0.120 **
	0.050	0.050	0.050	0.050
	12.72%	13.00%	12.89%	12.69%
N	235,246	213,864	220,755	234,000

Table 5.59 Effects of State Prevailing Wage Law Repeal on Health Coverage by Skill, Shortly (One to Two Years) and Long (Three or More Years) after Repeal, 1979-2002

Dependent=Natural Log (H_{ist} / 1-H_{ist})	*Logit* *After Repeal = 3 or more years* *Low Skill*			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.074	0.275	-0.111	0.057
	0.169	0.205	0.183	0.168
	7.65%	31.67%	-10.51%	5.89%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.143	-0.022	-0.279	-0.185
	0.184	0.222	0.200	0.183
	-13.36%	-2.21%	-24.38%	-16.86%
Repeal State*Long After Repeal*Construction	-0.170 *	-0.405 ***	-0.017	-0.189 *
	0.102	0.154	0.126	0.103
	-15.61%	-33.32%	-1.65%	-17.25%
Repeal State*Shortly After Repeal*Construction	0.041	-0.099	0.155	0.055
	0.111	0.169	0.139	0.113
	4.23%	-9.43%	16.72%	5.68%
Repeal State*Long After Repeal*Low Skill	-0.054	-0.058	-0.054	-0.054
	0.094	0.094	0.094	0.094
	-5.27%	-5.66%	-5.26%	-5.23%
Repeal State*Shortly After Repeal*Low Skill	0.002	-0.008	0.001	0.002
	0.101	0.101	0.101	0.101
	0.23%	-0.78%	0.12%	0.16%
Repeal State*Long After Repeal	0.136 **	0.138 **	0.137 **	0.136 **
	0.055	0.056	0.055	0.055
	14.60%	14.74%	14.72%	14.52%
Repeal State*Shortly After Repeal	0.096	0.100 *	0.098	0.097
	0.060	0.060	0.060	0.060
	10.11%	10.56%	10.33%	10.15%
N	235,246	213,864	220,755	234,000

Table 5.60 Effects of State Prevailing Wage Law Repeal on Health Coverage by Skill, Shortly (One to Four Years) and Long (Five or More Years) after Repeal, 1979-2001

Dependent=Natural Log (H_{ist} / 1-H_{ist})	*Logit*			
	After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.122	0.323	-0.145	0.058
	0.183	0.222	0.197	0.182
	12.92%	38.14%	-13.50%	5.99%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.227	-0.171	-0.441 **	-0.331 *
	0.193	0.232	0.209	0.192
	-20.31%	-15.73%	-35.65%	-28.21%
Repeal State*Long After Repeal*Construction	-0.202 *	-0.439 ***	0.032	-0.177
	0.110	0.169	0.135	0.111
	-18.29%	-35.54%	3.27%	-16.19%
Repeal State*Shortly After Repeal*Construction	-0.090	-0.174	0.105	-0.016
	0.113	0.173	0.142	0.115
	-8.59%	-16.00%	11.08%	-1.60%
Repeal State*Long After Repeal*Low Skill	-0.083	-0.087	-0.084	-0.083
	0.102	0.103	0.102	0.102
	-7.96%	-8.34%	-8.04%	-7.96%
Repeal State*Shortly After Repeal*Low Skill	0.050	0.041	0.044	0.048
	0.107	0.107	0.106	0.106
	5.09%	4.19%	4.49%	4.94%
Repeal State*Long After Repeal	0.113 *	0.112 *	0.114 *	0.112 *
	0.060	0.060	0.060	0.060
	11.91%	11.86%	12.06%	11.84%
Repeal State*Shortly After Repeal	0.068	0.069	0.071	0.068
	0.063	0.063	0.062	0.062
	7.02%	7.12%	7.34%	7.06%
N	235,246	213,864	220,755	234,000

In Tables 5.61, 5.62 and 5.63 I again find no evidence of a difference in the effect of repeal for low-skill construction occupations and all other construction workers included in the censored samples. Of all the skill regressions I find the most consistent evidence across all three different definitions of the period following repeal of an overall relative decline in the odds of benefits coverage for all construction workers.

In Table 5.61, a year or more after repeal the odds of workers being covered by both a pension and health insurance decline by 14 percent (*vs. craftsman*) , 21 percent (*vs. high skill*) and 20 percent (*vs. high and medium skill*).

In Table 5.62, in every specification repeal lowers the odds of coverage for all construction workers by anywhere from 22 to 32 percent three or more years after repeal. In Table 5.63, five or more years after repeal with the exception of the column *vs. Medium Skill* I again find an overall negative effect of repeal on the odds of coverage by both a pension and health insurance ranging from 25 to 30 percent. Contrary to the simple results in Tables 5.20 through 5.28 after controlling for individual differences there is no direct evidence that repeal benefited low-skill construction occupations relative to higher-skilled occupations in any of the samples I generated to measure differences in pension coverage, health coverage, or coverage by both fringes.

5.6 Race to the Bottom

In the last two and half decades, for all construction workers, inflation-adjusted wages, the percentage of workers with a pension or a health plan have declined. The construction workers earning the lowest wages and least likely to have either a pension or health insurance lived in the nine states that did not have a prevailing wage law in both

Table 5.61 Effects of State Prevailing Wage Law Repeal a Year or More after Repeal on Coverage by Both a Pension and Health Insurance by Skill 1979-2001

Dependent=Natural Log (PH_{ist} / 1-PH_{ist})	*OLS*			
	After Repeal = a year or more			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*After Repeal*Construction*Low Skill	0.065	0.120	0.159	0.132
	0.240	0.210	0.208	0.187
	6.68%	12.69%	17.26%	14.13%
Repeal State*After Repeal*Construction	-0.147 *	-0.201	-0.232 *	-0.219 **
	0.089	0.135	0.133	0.098
	-13.69%	-18.17%	-20.71%	-19.66%
Repeal State*After Repeal*Low Skill	-0.026	-0.031	-0.031	-0.025
	0.090	0.090	0.090	0.090
	-2.59%	-3.00%	-3.07%	-2.42%
Repeal State*After Repeal	0.058	0.052	0.054	0.058
	0.044	0.044	0.044	0.044
	5.95%	5.36%	5.50%	5.95%
N	235,246	213,857	220,755	234,023

Table 5.62 Effects of State Prevailing Wage Law Repeal on Coverage by Both a Pension and Health Plan by Skill, Shortly (One to Two Years) and Long (Three or More Years) after Repeal, 1979-2002

Dependent=Natural Log (PH_{ist} / 1-PH_{ist})	*OLS*			
	After Repeal = 3 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.019	0.259	0.191	0.218
	0.268	0.234	0.230	0.209
	1.94%	29.52%	21.01%	24.38%
Repeal State*Shortly After Repeal*Construction*Low Skill	0.094	-0.068	0.099	0.002
	0.276	0.247	0.247	0.221
	9.90%	-6.60%	10.45%	0.17%
Repeal State*Long After Repeal*Construction	-0.250 **	-0.378 **	-0.301 **	-0.347 ***
	0.098	0.150	0.144	0.108
	-22.10%	-31.50%	-25.96%	-29.28%
Repeal State*Shortly After Repeal*Construction	-0.006	0.034	-0.128	-0.038
	0.105	0.159	0.160	0.116
	-0.57%	3.44%	-11.97%	-3.72%
Repeal State*Long After Repeal*Low Skill	-0.053	-0.059	-0.060	-0.050
	0.100	0.100	0.100	0.100
	-5.11%	-5.76%	-5.80%	-4.89%
Repeal State*Shortly After Repeal*Low Skill	0.008	0.007	0.006	0.009
	0.107	0.107	0.106	0.107
	0.84%	0.72%	0.65%	0.93%
Repeal State*Long After Repeal	0.082 *	0.076	0.077	0.082 *
	0.049	0.049	0.049	0.049
	8.58%	7.84%	8.02%	8.53%
Repeal State*Shortly After Repeal	0.025	0.021	0.022	0.026
	0.052	0.052	0.052	0.052
	2.57%	2.15%	2.27%	2.62%
N	235,246	213,857	220,755	234,023

Table 5.63 Effects of State Prevailing Wage Law Repeal on Coverage by Both a Pension and Health Plan by Skill, Shortly (One to Four Years) and Long (Five or More Years) after Repeal, 1979-2001

Dependent=Natural Log (PH_{ist} / 1-PH_{ist})	*OLS*			
	After Repeal = 5 or more years			
	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
Repeal State*Long After Repeal*Construction*Low Skill	0.167	0.221	0.083	0.146
	0.291	0.253	0.248	0.226
	18.14%	24.77%	8.69%	15.67%
Repeal State*Shortly After Repeal*Construction*Low Skill	-0.119	-0.274	-0.356	-0.310
	0.311	0.270	0.266	0.243
	-11.19%	-23.97%	-29.95%	-26.66%
Repeal State*Long After Repeal*Construction	-0.281 ***	-0.358 **	-0.207	-0.289 **
	0.106	0.163	0.156	0.116
	-24.51%	-30.06%	-18.70%	-25.09%
Repeal State*Shortly After Repeal*Construction	-0.075	-0.146	-0.043	-0.106
	0.110	0.169	0.164	0.122
	-7.25%	-13.58%	-4.23%	-10.09%
Repeal State*Long After Repeal*Low Skill	-0.121	-0.131	-0.133	-0.118
	0.110	0.110	0.109	0.109
	-11.38%	-12.29%	-12.41%	-11.13%
Repeal State*Shortly After Repeal*Low Skill	0.075	0.072	0.066	0.075
	0.114	0.114	0.113	0.113
	7.73%	7.41%	6.79%	7.80%
Repeal State*Long After Repeal	0.067	0.061	0.063	0.067
	0.053	0.053	0.053	0.053
	6.94%	6.29%	6.48%	6.89%
Repeal State*Shortly After Repeal	0.064	0.059	0.061	0.064
	0.055	0.055	0.055	0.055
	6.59%	6.06%	6.31%	6.61%
N	235,246	213,857	220,755	234,023

1977 and 2002. Relative to all other construction workers, those living in states that repealed an existing prevailing wage law experienced the largest declines in wages and benefits coverage over this period.

As shown in Figure 5.4, for every dollar a worker earned outside of the industry in 1977, a construction worker living in a state with a prevailing wage over the entire period (Law) earned $1.47; similarly construction workers in states that would in later years repeal prevailing wage regulations in 1977 earned $1.45 for every dollar non-construction workers earned. By the end of the period, by which time the law had been repealed, the gap between these two groups of construction workers had widened with those in law states earning $1.31 for every dollar a nonconstruction worker earned and those in states that had repealed a law earning just $1.22 for every dollar earned outside the industry. Repeal has widened the gap between construction workers in law and repeal states.

In Figure 5.5 I calculate the ratio of the percentage of construction workers with a pension to the percentage of workers outside the industry with a pension. With a ratio close to one, workers in law states, both at the beginning and end of the period of analysis, were just as likely as all other workers to have a pension. With a ratio of 0.80 in 1979, construction workers in repeal were less likely to have a pension than all other workers in repeal states; by 2002, this ratio had fallen to 0.69. For workers in the nine states that did not have a prevailing wage law in 1979 and 2002 this ratio increased slightly from 0.66 to 0.69. Repeal has reduced the number of construction workers covered by a pension to a level prevalent in states that did not have prevailing wage regulations.

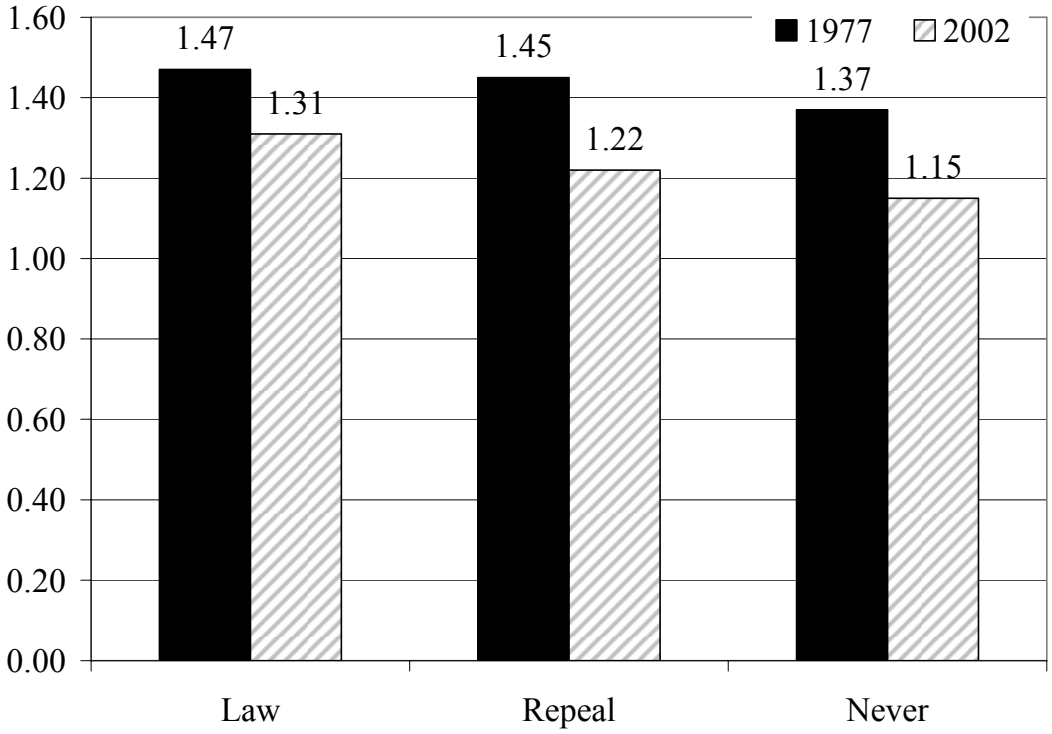

Figure 5.4 Ratio of Construction Real Wages to Nonconstruction Real Wages

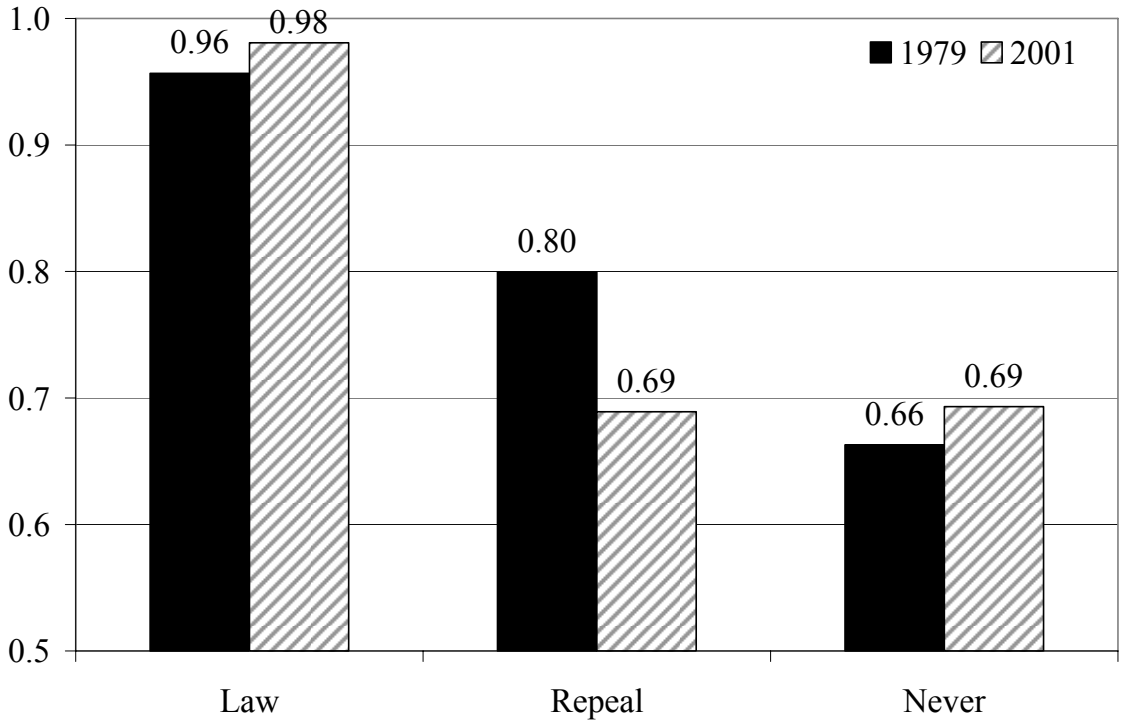

Figure 5.5 Ratio of Construction Pension Coverage to Nonconstruction Pension Coverage

Mirroring trends in pension coverage, the ratio of employer-provided health coverage in construction to all other industries (Figure 5.6) increased between 1979 and 2001 in both law and never states; counter to this trend construction workers in repeal states were increasingly less like to have a health coverage compared to workers outside the industry. By the end of the period in repeal states construction workers relative to all other workers were as likely to have health coverage as their counterparts in never states.

Figure 5.7 considers this same ratio for workers covered by both a pension plan and employer-provided health insurance. Compared to all other workers in never states, construction workers in 2001 were slightly less than two-thirds as likely to have both a pension and health coverage. In law states construction workers in 2001 were as likely as all other workers to have both a pension and health coverage. In 2001, construction workers in repeal states were just over two-thirds as likely to have both a pension and health insurance as all other workers; and unlike their counterparts, they have lost ground since 1979 when they were just under four-fifths as likely as other workers to have both fringe benefits.

5.7 Conclusion

Tables 5.64 through 5.70 summarize the statistical evidence presented in this chapter that conclusively links state prevailing wage law repeal to the declines in real hourly wages, pension coverage, and health insurance coverage for construction workers in repeal states.

Summarizing the results in Table 5.64, repeal has lowered the wages of all construction workers (on and off public construction projects) by anywhere from 1 to

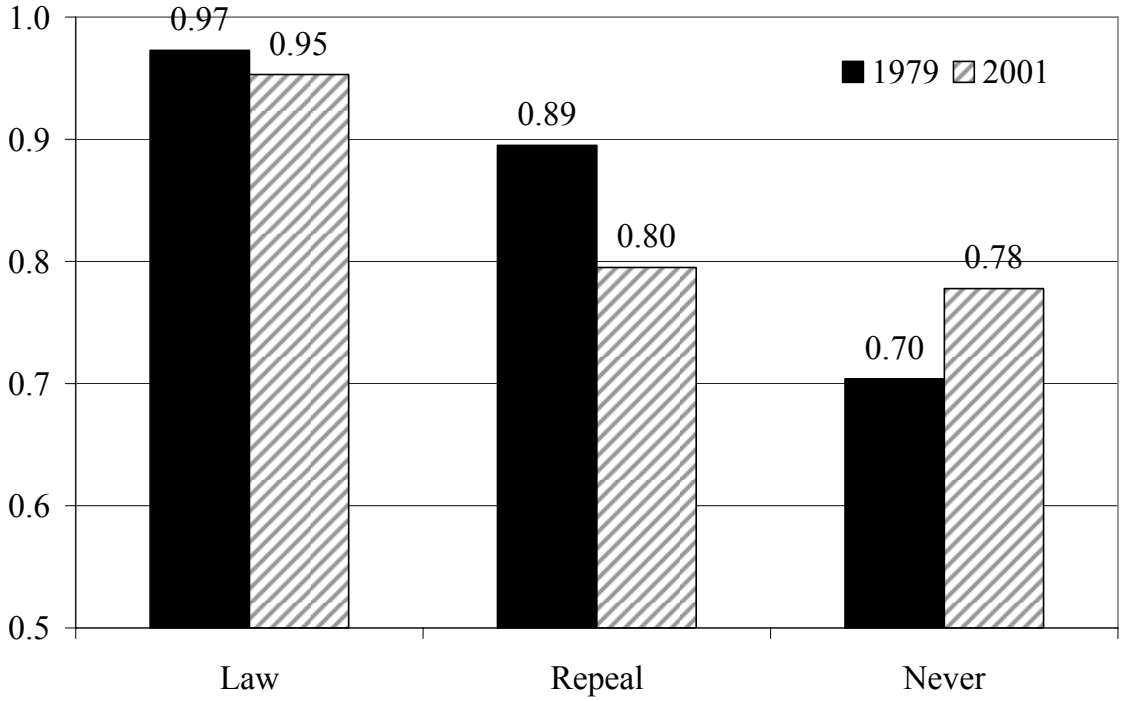

Figure 5.6 Ratio of Construction Health Coverage to Nonconstruction Health Coverage

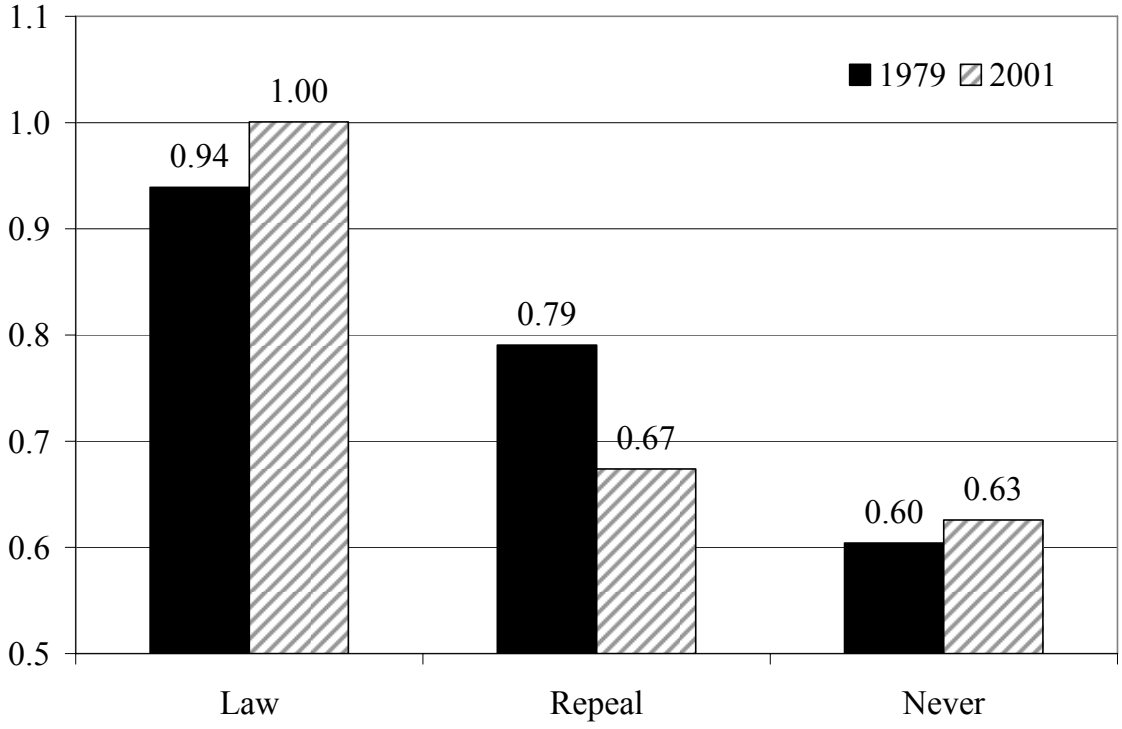

Figure 5.7 Ratio of Both Pension and Health Coverage for Construction Workers to Both Pension and Health Coverage among All Other Workers

Table 5.64 Percent Change in Real Hourly Earnings by Race and Union Membership

Black (Union) Construction Workers Relative to all other Construction Workers	*Overall*	*Race*	*Union Membership*
1 or more years after repeal		0.003	-0.031 **
		0.020	0.016
3 or more years after repeal		0.007	-0.053 ***
		0.021	0.018
5 or more years after repeal		0.018	-0.042 **
		0.021	0.019
Construction relative to non Construction			
1 or more years after repeal	-0.011 *	-0.014 **	-0.009
	0.006	0.006	0.007
3 or more years after repeal	-0.016 **	-0.020 ***	-0.008
	0.007	0.007	0.008
5 or more years after repeal	-0.020 ***	-0.024 ***	-0.014 *
	0.007	0.007	0.008

Note: ***,** and * indicate significance at the 1, 5, and 10 percent levels respectively.

Table 5.65 Percent Change in Real Hourly Earnings Overall by Skill

	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
1 or more years after repeal				
Low Skill	-0.031 **	-0.015	-0.033 **	-0.026 *
	0.015	0.018	0.016	0.015
All	0.006	-0.006	0.013	0.006
	0.009	0.013	0.011	0.009
3 or more years after repeal				
Low Skill	-0.031 *	-0.008	-0.034 **	-0.024
	0.016	0.019	0.017	0.016
All	0.005	-0.013	0.013	0.003
	0.010	0.014	0.012	0.010
5 or more years after repeal				
Low Skill	-0.035 **	-0.014	-0.044 **	-0.032 *
	0.017	0.020	0.018	0.017
All	0.004	-0.012	0.019	0.007
	0.010	0.015	0.013	0.010

Note: See Table 5.42.

Table 5.66 Percent Change in Real Hourly Earnings Overall by Skill

	Low Skill			
	vs. Craftsman	vs. High Skill	vs. Medium Skill	vs. High and Medium Skill
	Nonunion			
1 or more years after repeal				
Low Skill	-0.049 ***	-0.046 **	-0.066 ***	-0.052 ***
	0.018	0.022	0.019	0.018
All	0.001	0.004	0.025 *	0.014
	0.011	0.018	0.013	0.011
3 or more years after repeal				
Low Skill	-0.032 *	-0.041 *	-0.055 ***	-0.045 **
	0.019	0.024	0.021	0.019
All	-0.002	0.010	0.025 *	0.016
	0.012	0.019	0.014	0.012
5 or more years after repeal				
Low Skill	-0.039 *	-0.044 *	-0.063 ***	-0.048 **
	0.020	0.025	0.022	0.020
All	-0.006	0.004	0.024	0.013
	0.012	0.020	0.015	0.012
	Union			
1 or more years after repeal				
Low Skill	0.015	0.031	0.032	0.004
	0.033	0.036	0.037	0.032
All	-0.031 *	-0.036	-0.035	-0.024
	0.018	0.024	0.025	0.018
3 or more years after repeal				
Low Skill	0.025	0.046	0.043	0.022
	0.038	0.041	0.042	0.037
All	-0.046 **	-0.070 **	-0.038	-0.039 *
	0.022	0.029	0.031	0.022
5 or more years after repeal				
Low Skill	0.007	0.038	0.008	-0.003
	0.040	0.044	0.045	0.040
All	-0.046 **	-0.070 **	-0.038	-0.039 *
	0.022	0.029	0.031	0.022

Table 5.67 Percent Change in the Odds of Pension and Health Insurance Coverage

	Construction vs. Nonconstruction					
	Pension Coverage %		Health Coverage %		Both %	
1 year or more after repeal	-11.38	*	-6.33		-16.40	**
3 or more years after repeal	-14.93	**	-10.98	*	-23.29	***
5 or more years after repeal	-16.12	**	-14.51	**	-24.25	***

Note: ***,** and * indicate significance at the 1, 5, and 10 percent levels respectively.

Table 5.68 Percent Change in the Odds of Pension and Health Insurance Coverage by Race

	Black vs. non-Black					
Black Construction Workers Relative to all other Construction Workers	Pension Coverage %		Health Coverage %		Both %	
1 or more years after repeal	-5.96		-1.15		-7.26	
3 or more years after repeal	0.48		4.49		-6.65	
5 or more years after repeal	15.90		18.07		3.24	
Construction relative to Nonconstruction						
1 or more years after repeal	-10.03		-5.96		-15.22	**
3 or more years after repeal	-13.96	*	-11.43	*	-21.78	***
5 or more years after repeal	-16.26	**	-16.04	**	-23.41	***

Note: See Table 5.67.

Table 5.69 Low Skill vs. Craftsman and High Skill, Percentage Change in the Odds of Pension and Health Insurance Coverage by Skill

	Pension Coverage %		Health Coverage %		Both %	
	Low Skill vs. Craftsman					
Low Skill Construction Workers Relative to Craftsman						
1 year or more after repeal	11.51		-1.32		0.13	
3 or more years after repeal	22.29		7.65		-16.98	
5 or more years after repeal	18.63		12.92		12.63	
Construction relative to Nonconstruction						
1 year or more after repeal	-11.13		-8.19		-13.69	*
3 or more years after repeal	-18.06	*	-15.61	*	-22.10	**
5 or more years after repeal	-18.66	*	-18.29	*	-24.51	***
	Low Skill vs. High Skill					
Low Skill Construction Workers Relative to High Skill						
1 year or more after repeal	1.78		16.57		12.72	
3 or more years after repeal	16.54		31.67		15.59	
5 or more years after repeal	12.60		38.14		26.01	
Construction relative to Nonconstruction						
1 year or more after repeal	-4.98		-24.43	**	-18.17	
3 or more years after repeal	-15.46		-33.32	***	-31.50	**
5 or more years after repeal	-15.57		-35.54	***	-30.06	**

Note: See Table 5.67.

Table 5.70 Low Skill vs. Medium and Both High and Medium Skill, Percentage Change in the Odds of Pension and Health Insurance Coverage by Skill

	Pension Coverage %		Health Coverage %		Both %	
	Low Skill vs. Medium Skill					
Low Skill Construction Workers Relative to Medium Skill						
1 year or more after repeal	13.95		-16.21		17.41	
3 or more years after repeal	20.64		-10.51		8.95	
5 or more years after repeal	6.89		-13.50		11.26	
Construction relative to Nonconstruction						
1 year or more after repeal	-14.10		5.13		-20.71	*
3 or more years after repeal	-16.96		-1.65		-25.96	**
5 or more years after repeal	-9.66		3.27		-18.70	
	Low Skill vs. Both High and Medium Skill					
Low Skill Construction Workers Relative to High and Medium Skill						
1 year or more after repeal	8.44		-3.80		17.41	
3 or more years after repeal	20.68		5.89		8.95	
5 or more years after repeal	11.94		5.99		11.26	
Construction relative to Nonconstruction						
1 year or more after repeal	-10.19		-8.85		-19.66	**
3 or more years after repeal	-17.41	*	-17.25	*	-29.28	***
5 or more years after repeal	-14.30		-16.19		-25.09	**

Note: See Table 5.67.

2 percent over the past two and half decades. There is no conclusive evidence that repeal benefits or harms Black construction workers relative to non-Blacks in terms of hourly wages. Repeal is associated with a relative decline in the wages of union members of 3 to 5 percent. A relative reduction of 3 to 5 percent means the union wage premium has been reduced by about a quarter.

Summarized in Table 5.65, is evidence that the negative effect of repeal upon hourly wages has fallen more heavily upon less-skilled construction workers. Relative to higher-skill construction occupations, I find that the wages of the less-skilled occupations decreased by 2.6 to 4.4 percent as a result of repeal. The immediate question raised by the results in Table 5.64 where construction union wages fall by 3 to 5 percent and in Table 5.65 where the hourly earnings of low-skill construction occupations fall by 3 to 4 percent is how these results relate. In Table 5.66 I find consistent with my union results in Table 5.64 that the wages of all union members decline by 3 to 5 percent in the column *vs. Craftsman* where the largest sample which is also the most similar to the sample in Table 5.65.

In these specifications I find no evidence that low skill construction union members experienced declines in wages relative to other more highly-skilled union members. On the other hand, relative to other nonunion members we find that the wages of low-skill construction workers decline as result of repeal by 3 to 7 percent relative to higher skilled nonunion members.

In Tables 5.67, 5.68, and 5.69 I summarize my findings on the effect of repeal on benefits coverage, reporting in each table the percent change in odds and whether the coefficient was significant. With respect to pensions, the odds of coverage for all

construction workers decline by 11 to 16 percent. The odds of health coverage decline as a result of repeal in range of 11 to 14 percent. The odds of coverage by both these fringes decline as a result of repeal by 16 to 24 percent. Given the high concentration of union members among workers with both these fringe benefits, this final result is a proxy for the role repeal-induced declines in union density play in the downward drift in benefits coverage.

Consistent with my analysis of hourly earnings by race, in Table 5.68 there is no evidence of a relative gain or loss in terms of pension coverage, health coverage, or coverage by both fringes for Black construction workers relative to non-Black construction workers. The change in the odds of coverage for all construction workers (Black and non-Black) is consistent with the average effect of repeal on all construction workers in Table 5.67.

In Tables 5.69 and 5.70 I summarize the results of my analysis of benefits coverage by skill. Although I find some evidence of an overall negative effect of repeal on benefits coverage, contrary to my results on hourly earnings by skill I have no conclusive evidence that repeal-reduced benefits coverage for less-skilled construction occupations relative to higher-skilled occupations.

The repeal of state prevailing wage laws lowers hourly wages within the construction labor market. Consistent with previous research I find that in particular the relative wages of unionized construction workers were lowered as a result of repeal. Going beyond previous work (Kessler and Katz 2001) this research has shown that the negative effect of repeal upon hourly wages is concentrated among low-skill construction occupations. This research has also cast doubt on the proposition that repeal of

prevailing wage laws operates to raise the wages of Black construction workers relative to non-Black construction workers.

In addition to lowering hourly wages, repeal has resulted in a decline in health and pension coverage throughout the construction industry of repeal states. Although previous work (Petersen 2000) has found that the level of pension and health benefits has declined among unionized construction workers as a result of repeal, my research indirectly suggests that repeal has not lead construction unions to eliminate benefits coverage. In particular there is strong evidence that the decline in coverage among construction workers by both a pension plan and health insurance has been driven by the decline in union density within repeal states. In Chapter 4 I revealed a link between repeal and the decline in construction union density in repeal states. My analysis of fringe benefits coverage further supports my conclusions regarding the effect of repeal on Black construction workers. I find no evidence that repeal alters pension or health coverage for Black construction workers relative to non-Black construction workers.

Furthermore my examination of coverage by both fringes finds no evidence that Black construction workers gain or lose relative to non-Black construction workers as a result of repeal. To the extent that coverage by both fringes is a proxy for union membership, the absence of a race effect in coverage by both fringes, represents stronger evidence than in the previous literature that if there is a race effect it is not operating through the racial composition of the union labor force.

CHAPTER 6

HUMAN CAPITAL

6.1 Introduction

The primary intent behind the enactment of prevailing wage laws was to prevent contractors from undercutting local wage and benefit levels by importing cheap labor from other localities. The removal of these laws creates a competitive environment where contractors can pursue a low-road labor market strategy to gain a competitive advantage. Such a strategy involves importing cheaper labor from other localities or cultivating a source of cheap labor within the existing locality. Repeal gives contractors an incentive to substitute less-skilled and less-experienced workers for higher-skilled, better paid workers with access to health, and/or pension benefits. As was shown in Chapter 5, hourly wages, coverage by health and or pension benefits have all fallen as a result of repeal. In this chapter I will explore the changing composition of human capital within the construction labor market of repeal states.

In the United States between 1977 and 2002 the percentage of workers with less than a high school diploma decreased from 42 percent to 22 percent.[1] Reflecting this overall trend the percentage of construction workers without a high school diploma fell from 39 to 25 percent between 1977 and 2002. In Table 6.1 I report the percentage of

[1] This is an estimate based on a sample limited in every year to employed workers age 16 to 64.

Table 6.1 Percentage of High School Dropouts among Construction Workers before and after Repeal

Age 16 to 64			
	Law	Repeal	Never
Before Repeal (1977)	37.3	39.0	50.1
After Repeal (2002)	23.5	28.7	30.1
Percent Change	-37.0	-26.3	-40.0

Age 25 to 64			
	Law	Repeal	Never
Before Repeal (1977)	41.9	43.8	55.7
After Repeal (2002)	22.0	26.8	28.9
Percent Change	-47.5	-38.9	-48.0

Note: Michigan briefly suspended its prevailing wage law between 1995 and 1997 and is treated as a law state in 1977 and 2002.

construction workers age 16 to 64 at the beginning and end of my period of analysis that were high school dropouts in law, repeal, and never law states; also included in this table as a point of reference are the same percentages for workers age 25 to 64.

Although the percentage of workers without a diploma has fallen across all three state groupings, the smallest decline occurred in states that had by 2002 repealed state prevailing wage regulations. This same pattern holds when the sample is limited to include workers between the ages of 25 and 64. Unless stated otherwise the rest of the descriptive statistics discussed in this chapter will be based on a sample of construction workers age 16 to 64. Because some of the differences in the percentage of workers without a diploma reflect regional differences in educational attainment (Table 6.2), I report the difference in trends in the percentage of workers within construction without a diploma after adjusting for trends in those same regions for workers employed outside of the construction industry; as in previous chapters my regional analysis classified states

Table 6.2 Percentage of High School Dropouts Among Workers before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Before Law Repeal (1977)	After Law Repeal (2002)	Time Diff. For Location %	Difference (in % Change)
		Treatment Group: Construction				
39.0	28.7	-26.30	42.8	21.6	-49.48	23.19
		Control Group: Nonconstruction				
39.3	24.5	-37.64	41.7	20.8	-50.11	12.47
					Simple Difference in Difference in Difference	10.72

Note: See Table 6.1.

without a prevailing wage law in 1977 and 2002 as well as states with a law over the entire period as nonexperimental states. While the percentage of construction workers in experimental states without a diploma fell by 26 percent by 2002, in nonexperimental states there was a 50 percent decline in the percentage of such workers. The decrease in the percentage of high school dropouts among nonconstruction workers in experimental states (38 percent) also lagged behind the trend in nonexperimental states (50 percent); taken together these trends reveal a relative increase of 11 percent in the number of high school dropouts among construction workers in experimental states.

6.2 High School Dropouts by Race

In Table 6.3 I pool observations over three years at the beginning of my period of analysis and three years at the end to estimate differences in the percentage of Black and non-black construction workers without a high school diploma. Among Black

Table 6.3 Percentage of High School Dropouts among Construction Workers before and after Repeal by Race

	Black		
	Law	Repeal	Never
Before Repeal (77-79)	55.2	59.7	66.8
After Repeal (00-02)	13.6	24.2	27.5
Percent Change	-75.3	-59.4	-58.9

	Non Black		
	Law	Repeal	Never
Before Repeal (77-79)	35.0	34.6	43.9
After Repeal (00-02)	24.0	29.7	29.5
Percent Change	-31.4	-14.2	-32.8

Note: Michigan briefly suspend its prevailing wage law between 1995 and 1997 and is treated as a law state in 1977-79 and 2000-02.

construction workers high school dropouts represented 55 percent in law states, 60 percent in repeal states and 67 percent in never states. By the end of the period the percentage of high school dropouts among Black construction workers in repeal and never states was more than a third higher than in law states. Across all three state groupings the percentage of dropouts among non-Black construction workers was higher than among Black construction workers at the beginning of the period, a gap that was erased by the end of the period.

There was a 14 percent decline in the number of non-Black workers without a diploma in repeal states, compared to a decline of a little less than a third in law and never states.

Capturing regional trends in Table 6.4 I can see that for Black construction workers in experimental states there is a very slight relative increase of less than 1

Table 6.4 Percentage of High School Dropouts among Workers before and after Repeal by Industry and Race

Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
Black						
Treatment Group: Construction						
59.7	24.2	-59.41	59.6	18.6	-68.80	9.39
Control Group: Nonconstruction						
51.9	22.2	-57.11	49.2	16.9	-65.62	8.51
			Difference in Difference in Difference			0.88
Non-Black						
Treatment Group: Construction						
34.6	29.7	-14.21	36.3	24.8	-31.62	17.41
Control Group: Non-Construction						
38.0	22.5	-40.83	39.3	22.5	-42.91	2.08
			Difference in Difference in Difference			15.33%
			Difference in Difference in Difference in Difference			-14.44%

Note: See Table 6.3.

percent in the number of Black high school dropouts. For non-Blacks in experimental states there was a relative increase in the number of dropouts of 15 percent over the period. Taking one more difference, comparing Blacks to non-Blacks, the number of Black high school dropouts in experimental states fell by 14 percent over the period.

6.3 High School Dropouts by Union Membership

Nationwide and across all industries the percentage of union members who were high school dropouts has declined from slightly more than a third in 1977-79 to just 12 percent in 2000-02. Among nonunion members there has been a slight divergence of those in construction from all other workers, where the percentage of high school dropouts among nonunion construction workers declined from 41 percent in 1977-79 to 29 percent in 2000-02; among all other nonunion workers the percentage of dropouts fell from 43 to 23 percent.

In Table 6.5 I distribute these national trends across my three state prevailing wage groupings and find very small differences in the trends with and across union membership. Consistent with overall trends we do find that the smallest declines in the number of high school dropouts among construction workers living in repeal states. In Table 6.6 I adjust these trends in construction for broader regional trends in the number of high school dropouts.

Comparing union members within the construction industry of experimental states to all other workers within experimental states as well those in nonexperimental states there is almost no difference in the change in the number of high school dropouts. The same is not true for nonunion members in experimental states, where there is a relative

Table 6.5 Percentage of High School Dropouts among Construction Workers before and after Repeal by Union Membership

	Law	Repeal	Never
	Union		
Before Repeal (77-79)	32.8	31.0	33.0
After Repeal (00-02)	11.4	13.2	10.3
Percent Change	-65.1	-57.4	-68.9
	Non Union		
Before Repeal (77-79)	37.8	38.1	47.5
After Repeal (00-02)	28.0	30.9	30.7
Percent Change	-25.8	-18.9	-35.3

Note: See Table 6.3.

Table 6.6 Percentage of High School Dropouts among Workers before and after Repeal by Industry and Union Membership

Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
Union						
Treatment Group: Construction						
39.5	13.2	-66.56	33.5	11.4	-66.04	-0.52
Control Group: Non-Construction						
33.5	11.4	-66.16	37.1	12.6	-66.12	-0.04
					Difference in Difference in Difference	-0.48
Nonunion						
Treatment Group: Construction						
37.2	30.9	-16.94	42.1	28.6	-32.13	15.18
Control Group: Non-Construction						
42.7	23.4	-45.29	43.2	23.4	-45.95	0.65
					Difference in Difference in Difference	14.53%
					Difference in Difference in Difference in Difference	-15.01%

Note: See Table 6.3.

increase of 14 percent in the high school dropouts among nonunion workers employed in construction. Taken together there is a relative decline of 15 percent in the number of high school dropouts among union members in experimental states.

6.4 High School Dropouts by Skill

Examining trends in years of schooling by skill in Table 6.7 I find that over time less-skilled construction occupations in repeal states are populated by greater numbers of workers without a high school diploma when compared to higher-skilled occupations in repeal states. Although this is also true in law and never states, the less skilled occupations in repeal states also became relatively less educated after repeal than similarly skilled occupations in the other state groupings.

Taking into account regional trends in years of schooling in Table 6.8 I find that high-skill construction occupations in experimental states lost ground in terms of the percentage of workers with less than a high school diploma when compared to their counterparts in nonexperimental states. For medium skill construction occupations this trend is reversed with the percentage high school dropouts in experimental states approaching the same percentage in nonexperimental states by the end of the period. In Table 6.9 I find large relative increases in the number of high school dropouts among the construction occupations I have defined as semiskill and laborers.

Table 6.7 Percentage of High School Dropouts among Construction Workers before and after Repeal by Skill

	Law	Repeal	Never
	High Skill		
Before Repeal (77-79)	20.3	21.5	32.8
After Repeal (00-02)	9.4	14.0	16.9
Percent Change	-53.8	-34.7	-48.5
	Medium Skill		
Before Repeal (77-79)	36.3	42.7	46.6
After Repeal (00-02)	20.7	25.1	33.7
Percent Change	-42.8	-41.1	-27.7
	Semi Skill		
Before Repeal (77-79)	41.5	36.7	56.6
After Repeal (00-02)	34.5	43.1	38.6
Percent Change	-17.0	17.6	-31.8
	Laborers		
Before Repeal (77-79)	49.1	48.3	54.7
After Repeal (00-02)	34.4	41.0	35.7
Percent Change	-29.9	-15.1	-34.7
	Other		
Before Repeal (77-79)	36.9	34.4	49.0
After Repeal (00-02)	22.3	23.5	19.4
Percent Change	-39.6	-31.9	-60.3

Note: See Table 6.3.

Table 6.8 High Skill and Medium Skill– Percentage of High School Dropouts among Workers before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Non experimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
High Skill						
Treatment Group: Construction						
21.5	14.0	-34.72	22.0	10.5	-52.40	17.68
Control Group: Non-Construction (**Craftsman & Kindred**)						
27.9	13.2	-52.51	27.8	12.4	-55.27	2.76
					Simple Difference in Difference in Difference	14.93%
Medium Skill						
Treatment Group: Construction						
42.7	25.1	-41.13	38.0	22.8	-40.03	-1.10
Control Group: Nonconstruction (**Craftsman & Kindred**)						
27.9	13.2	-52.51	27.8	12.4	-55.27	2.76
					Simple Difference in Difference in Difference	-3.86%

Note: See Table 6.3.

Table 6.9 Semiskill and Laborers, Percentage of High School Dropouts among Workers before and after Repeal by Industry

Experimental States: States That Repealed Prevailing Wage Laws			Nonexperimental States: States That Did Not Repeal Prevailing Wage Laws			
Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Before Law Repeal (77-79)	After Law Repeal (00-02)	Time Diff. For Location %	Difference (in % Change)
Semiskill						
Treatment Group: Construction						
36.7	43.1	17.57	44.2	35.1	-20.48	38.05
Control Group: Non-Construction (**Craftsman & Kindred**)						
27.9	13.2	-52.51	27.8	12.4	-55.27	2.76
			Simple Difference in Difference in Difference			35.30%
Laborers						
Treatment Group: Construction						
48.3	41.0	-15.06	50.1	34.6	-30.84	15.78
Control Group: Nonconstruction (**Laborers**)						
48.3	29.2	-39.49	50.1	34.6	-30.84	-8.65
			Simple Difference in Difference in Difference			24.43%

Note: See Table 6.3.

6.5 Regression Analysis

6.5.1 High school dropouts in construction. Excluding all but construction workers from the analysis, a year or more after repeal the odds of employment of high school dropouts increased by 12 percent (Table 6.10). Three or more years after repeal the odds of employment for dropouts increased by 17 percent; five or more years after repeal the odds of employment increased by 21 percent for this group of workers. In Appendix B I consider two modifications to the sample designed to examine the influence of age and Spanish ethnicity upon these results. I conclude that limiting the sample to include only workers age 25 to 64 or to include only non-Hispanic workers did not in either case significantly alter my conclusions based on the full sample and thus throughout my analysis I include all workers age 16 to 64 as well as all workers of Spanish ethnicity.

In Table 6.11 a year or more after repeal the odds of employment for construction workers with less than high school diploma increased by 26 percent. The addition of an interaction term for each state's construction labor market reduced the magnitude of the increase in the odds of employment of high school dropouts to 12 percent. Three or more years after repeal (column 3) the odds of employment for workers with less than a high school diploma increased by 16 percent. Five or more years after repeal the odds of employment for dropouts increased by 21 percent.

6.5.2 High school dropouts by race. In Table 6.12 as a preliminary to the full model I apply equations 3.15 and 3.16 to a sample limited to include only construction workers. I find no evidence a year or more after repeal, three or even five or more years after repeal of a relative gain or loss in the odds of employment of high school

Table 6.10 Construction Only, Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal	0.115 ***		
	0.036		
	12.20%		
Repeal State*Long After Repeal		0.155 ***	0.192 ***
		0.039	0.040
		16.80%	21.20%
Repeal State*Shortly After Repeal		0.017	0.036
		0.049	0.046
		1.71%	3.66%
N	161,689	161,689	161,689

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients followed by the percent change in odds. The percent change in the odds is calculated as follows: (eβ-1)*100. Data set drawn from May (1977-78) and Outgoing Rotations (1979-2002) of the Current Population Survey. All specifications control for time and state fixed effects. In columns 1 "after repeal" is defined as the year following repeal. In column 2, "long after repeal" is 3 or more years, "shortly after repeal" is one to two years. In column 3 "long after repeal" is 5 or more years, "shortly after repeal" is one to four years. Observations weighted using CPS supplement weights.

Table 6.11 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	0.229***	0.111***		
	0.030	0.038		
	25.75%	11.73%		
Repeal State*After Repeal	0.002	0.016		
	0.013	0.014		
	0.21%	1.63%		
Repeal State*Long After Repeal*Construction			0.152***	0.190***
			0.041	0.043
			16.38%	20.88%
Repeal State*Shortly After Repeal*Construction			0.009	0.017
			0.052	0.049
			0.90%	1.72%
Repeal State*Long After Repeal			0.017	0.025
			0.015	0.016
			1.70%	2.54%
Repeal State*Shortly After Repeal			0.015	0.026
			0.018	0.017
			1.51%	2.60%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	1,499,900	1,499,900	1,499,900	1,499,900

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients followed by the percent change in odds. The percent change in the odds is calculated as follows: (eβ-1)*100. Data set drawn from May (1977-78) and Outgoing Rotations (1979-2002) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. In columns 1 and 2 "after repeal" is defined as the year following repeal. In column 3, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 4 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. Observations weighted using CPS supplement weights.

Table 6.12 Construction Only, Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts by Race 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Black	0.086		
	0.115		
	9.02%		
Repeal State*After Repeal	0.125***		
	0.039		
	13.33%		
Repeal State*Long After Repeal*Black		0.000	-0.008
		0.121	0.125
		-0.04%	-0.79%
Repeal State*Shortly After Repeal*Black		0.324**	0.112
		0.164	0.149
		38.26%	11.85%
Repeal State*Long After Repeal		0.179***	0.217***
		0.041	0.043
		19.58%	24.21%
Repeal State*Shortly After Repeal		-0.001	0.044
		0.052	0.049
		-0.11%	4.51%
State*Construction Fixed Effects	Yes	Yes	Yes
N	161,689	161,689	161,689

Note: See Table 6.10.

dropouts among Black construction workers. I do find a relative increase in the odds of employment of dropouts among all construction workers in repeal states; Ie find that the odds of employment for dropouts increase by 13 percent a year or more after repeal, 20 percent three or more years after repeal, and 24 percent five or more years after repeal.

In Table 6.13 I apply equations 3.15 and 3.16 to a full sample of construction and nonconstruction workers. A year or more after repeal the coefficient identifying Black construction workers a year or more after repeal is not significantly different from zero. For all construction workers a year or after repeal the odds of employment for construction workers without a high school diploma increase by 14 percent.

The coefficients on the interaction terms *Repeal State*Long After Repeal*Construction*Black* where *Long After Repeal* is defined first as three or more years after repeal and then as five or more years after repeal are not different from zero.

On the other hand, for all construction workers, *Repeal State*Long After Repeal*Construction* the odds of the employment for those without a high school diploma increased by 19 percent three or more years after repeal and 24 percent five or more years after repeal.

6.5.3 High school dropouts by union membership. Contrary to my simple result in Table 6.6, I find no evidence in Table 6.14, where I apply the controls in equations 3.15 and 3.16 to a sample limited to include only construction workers, of a relative difference in the odds of employment of high school dropouts among unionized construction workers.

Table 6.13 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts by Race 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Black	0.045		
	0.120		
	4.58%		
Repeal State*After Repeal*Construction	0.129***		
	0.041		
	13.71%		
Repeal State*After Repeal*Black	0.127***		
	0.036		
	13.48%		
Repeal State*After Repeal	0.009		
	0.015		
	0.89%		
Repeal State*Long After Repeal*Construction*Black		-0.030	-0.021
		0.127	0.131
		-2.91%	-2.05%
Repeal State*Shortly After Repeal*Construction*Black		0.254	0.042
		0.170	0.155
		28.85%	4.26%
Repeal State*Long After Repeal*Construction		0.179***	0.216***
		0.044	0.046
		19.57%	24.09%
Repeal State*Shortly After Repeal*Construction		0.005	0.039
		0.055	0.052
		0.51%	3.93%
Repeal State*Long After Repeal*Black		0.116***	0.095**
		0.039	0.041
		12.31%	9.97%
Repeal State*Shortly After Repeal*Black		0.147***	0.146***
		0.047	0.046
		15.82%	15.74%
Repeal State*Long After Repeal		0.015	0.027
		0.016	0.017
		1.55%	2.75%
Repeal State*Shortly After Repeal		-0.003	0.011
		0.019	0.019
		-0.34%	1.12%
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,499,900	1,499,900	1,499,900

Note: See Table 6.11.

Table 6.14 Construction Only, Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts by Union Membership 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Union	-0.059		
	0.105		
	-5.69%		
Repeal State*After Repeal	0.152 ***		
	0.046		
	16.44%		
Repeal State*Long After Repeal*Union		-0.126	-0.119
		0.117	0.124
		-11.81%	-11.22%
Repeal State*Shortly After Repeal*Union		0.069	0.018
		0.138	0.136
		7.14%	1.86%
Repeal State*Long After Repeal		0.169 ***	0.206 ***
		0.049	0.051
		18.39%	22.89%
Repeal State*Shortly After Repeal		0.104	0.096
		0.066	0.059
		11.00%	10.06%
State*Construction Fixed Effects	Yes	Yes	Yes
N	136,599	136,599	136,599

Note: See Table 6.10.

I do find a relative increase in the odds of employment of workers with less than four years of high school education among all construction workers: 16 percent increase a year or more after repeal, 18 percent increase three or more years after repeal, and 23 percent increase five or more years after repeal.

In Table 6.15 I apply equations 3.15 and 3.16 to a sample that includes all industries and again find no relative difference as a result of repeal between unionized construction workers and all other construction workers in terms of the employment of workers with less than four years of high school. As in the previous table I do find a relative increase in the odds of employment of all construction workers with less than four years of high school: 13 percent a year or more after repeal, 17 percent three or more years after repeal, and 22 percent five or more years after repeal. I do find evidence that the percentage of dropouts among all union members (construction and otherwise) declined relative to all nonunion members in repeal states.

6.5.4 High school dropouts by skill. When comparing laborers to the majority of all other construction workers in the column *vs. Craftsman* in Tables 6.16, 6.17, and 6.18 I only find statistically significant evidence of a relative increase in the odds of employment of workers with less than a high school diploma among construction laborers when long after repeal is defined as three or more years (Table 6.17). I also find evidence in both of the long after repeal specifications of a relative increase in the likelihood of employment of high school dropouts among construction workers, where the odds increase by 13 percent three or more years after repeal and 17 percent five or more years after repeal. Given that the majority of our construction sample is composed

Table 6.15 Effects of State Prevailing Wage Law Repeal a Year or More after Repeal on the Employment of High School Dropouts by Union Membership 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*		
	1	2	3
Repeal State*After Repeal*Construction*Union	-0.002		
	0.111		
	-0.19%		
Repeal State*After Repeal*Construction	0.117 **		
	0.048		
	12.45%		
Repeal State*After Repeal*Union	-0.087 **		
	0.042		
	-8.29%		
Repeal State*After Repeal	0.022		
	0.016		
	2.22%		
Repeal State*Long After Repeal*Construction*Union		0.003	-0.039
		0.124	0.132
		0.29%	-3.82%
Repeal State*Shortly After Repeal*Construction*Union		0.049	-0.020
		0.148	0.146
		5.01%	-2.00%
Repeal State*Long After Repeal*Construction		0.156 ***	0.195 ***
		0.051	0.053
		16.89%	21.57%
Repeal State*Shortly After Repeal*Construction		0.006	0.016
		0.070	0.062
		0.57%	1.58%
Repeal State*Long After Repeal*Union		-0.106 **	-0.044
		0.048	0.052
		-10.08%	-4.28%
Repeal State*Shortly After Repeal*Union		-0.069	0.004
		0.054	0.057
		-6.70%	0.39%
Repeal State*Long After Repeal		0.013	0.007
		0.018	0.019
		1.28%	0.73%
Repeal State*Shortly After Repeal		0.042 *	0.027
		0.022	0.021
		4.32%	2.73%
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,236,632	1,236,632	1,236,632

Note: See Table 6.11.

Table 6.16 Effects of State Prevailing Wage Law Repeal a Year or More after Repeal on the Employment of High School Dropouts by Skill 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*			
	After Repeal = a year or more			
	Laborer			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semskill*
Repeal State*After Repeal*Construction***Laborer**	0.123	0.102	0.294 **	-0.039
	0.103	0.137	0.114	0.125
	13.11%	10.78%	34.21%	-3.85%
Repeal State*After Repeal*Construction	0.087	0.152	-0.044	0.281 ***
	0.054	0.103	0.071	0.086
	9.13%	16.38%	-4.30%	32.47%
Repeal State*After Repeal***Laborer**	0.014	0.011	0.013	0.017
	0.051	0.051	0.051	0.051
	1.41%	1.15%	1.30%	1.71%
Repeal State*After Repeal	-0.010	-0.008	-0.009	-0.011
	0.031	0.031	0.031	0.031
	-0.95%	-0.83%	-0.87%	-1.05%
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	595,897	513,970	529,097	509,726

Note: See Table 6.11.

Table 6.17 The Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts by Skill, Shortly (One to Two Years) and Long (Three or More Years) after Repeal 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*			
	Long After = 3 or more years			
	Laborer			
	vs. Craftsman	*vs. High Skill*	*vs. Medium Skill*	*vs. Semiskill*
Repeal State*Long After Repeal*Construction***Laborer**	0.182 *	0.150	0.365 ***	0.006
	0.110	0.146	0.123	0.134
	19.93%	16.18%	44.11%	0.64%
Repeal State*Shortly After Repeal*Construction***Laborer**	0.004	0.022	0.144	-0.131
	0.137	0.184	0.153	0.166
	0.36%	2.17%	15.47%	-12.29%
Repeal State*Long After Repeal*Construction	0.118 **	0.198 *	-0.021	0.330 ***
	0.058	0.110	0.076	0.092
	12.51%	21.86%	-2.10%	39.07%
Repeal State*Shortly After Repeal*Construction	0.000	0.019	-0.108	0.158
	0.073	0.141	0.097	0.115
	0.04%	1.87%	-10.26%	17.12%
Repeal State*Long After Repeal***Laborer**	-0.011	-0.014	-0.013	-0.008
	0.056	0.056	0.056	0.056
	-1.12%	-1.38%	-1.24%	-0.80%
Repeal State*Shortly After Repeal***Laborer**	0.062	0.059	0.061	0.065
	0.066	0.066	0.066	0.066
	6.39%	6.11%	6.30%	6.67%
Repeal State*Long After Repeal	0.003	0.005	0.004	0.002
	0.034	0.034	0.034	0.034
	0.32%	0.46%	0.42%	0.23%
Repeal State*Shortly After Repeal	-0.035	-0.034	-0.034	-0.036
	0.041	0.041	0.041	0.041
	-3.42%	-3.33%	-3.37%	-3.54%
N	595,897	513,970	529,097	509,726

Note: See Table 6.11.

Table 6.18 The Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts by Skill, Shortly (One to Four Years) and Long (Five or More Years) after Repeal 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*							
	Long After = 5 or more years							
	Laborer							
	vs. Craftsman		*vs. High Skill*		*vs. Medium Skill*		*vs. Semi Skill*	
Repeal State*Long After Repeal*Construction***Laborer**	0.178		0.158		0.383	***	-0.059	
	0.116		0.153		0.129		0.140	
	19.48%		17.06%		46.61%		-5.69%	
Repeal State*Shortly After Repeal*Construction***Laborer**	0.157		0.129		0.355	**	-0.081	
	0.132		0.173		0.147		0.159	
	17.03%		13.81%		42.58%		-7.78%	
Repeal State*Long After Repeal*Construction	0.154	**	0.215	*	-0.014		0.420	***
	0.061		0.115		0.079		0.097	
	16.67%		23.97%		-1.38%		52.15%	
Repeal State*Shortly After Repeal*Construction	-0.030		0.062		-0.172	*	0.247	**
	0.069		0.128		0.091		0.110	
	-2.92%		6.34%		-15.83%		27.98%	
Repeal State*Long After Repeal***Laborer**	-0.042		-0.045		-0.043		-0.038	
	0.059		0.059		0.059		0.059	
	-4.12%		-4.41%		-4.25%		-3.77%	
Repeal State*Shortly After Repeal***Laborer**	-0.018		-0.022		-0.019		-0.013	
	0.065		0.065		0.065		0.065	
	-1.78%		-2.15%		-1.84%		-1.25%	
Repeal State*Long After Repeal	0.020		0.021		0.021		0.019	
	0.036		0.036		0.036		0.036	
	1.97%		2.16%		2.09%		1.91%	
Repeal State*Shortly After Repeal	-0.007		-0.006		-0.007		-0.009	
	0.039		0.039		0.039		0.039	
	-0.70%		-0.56%		-0.66%		-0.89%	
N	595,897		513,970		529,097		509,726	

Note: See Table 6.11.

of workers classified as craftsman or laborers I am not surprised that these results closely mirror my overall results from Table 6.11.

Limiting the construction portion of the sample to include just high skill and the laborers occupation (*vs. High Skill*), I find no evidence in Table 6.16, 6.17, or 6.18 of a relative increase in the odds of employment of high school graduates among laborers. I do find long after repeal in Tables 6.17 and 6.18 a relative increase in the odds of employment of high school graduates for all construction workers of 22 and 24 percent. As I observed at the beginning of Chapter 6 in Table 6.7 and 6.8 both the high-skill and laborer occupations experienced relative increases in the percent of workers with less than a high diploma among their respective ranks. I find the most consistent evidence of a relative increase in the odds of employment for high school dropouts among laborers when the construction portion of the sample is limited to include medium-skill occupations (*vs. Medium Skill*), a group that includes carpenters and heavy equipment operators. Here the odds of employment for high school dropouts among laborers increase by 34 percent a year or more after repeal, 44 percent three or more years after repeal and 46 percent five or more years after repeal. In Table 6.7 medium-skill construction workers were the only ones in repeal states for whom the trends in years of schooling tracked with workers in nonexperimental states. In Tables 6.16, 6.17, and 6.18 these workers were included in the columns labeled *vs. Craftsman* but not in the columns labeled *vs. High Skill* and thus when they are present they lower the relative increase among all construction workers in the odds of employment of high school dropouts. When they are absent there is still no relative difference for laborers, but the relative

increase in the odds of employment of high school dropouts increases among all construction workers (high skill and laborers).

Finally in the column labeled *vs. Semiskill* in Table 6.16, 6.17, and 6.18 the construction portion of the sample is limited to include just laborers and semiskill construction occupations such as painters and bricklayers.

Given my findings in Table 6.8 I am not surprised that I find no evidence of a relative increase in the odds of employment high school dropouts among laborers when they are compared to semiskill occupations only. I do find that the odds of employment of high school dropouts among all construction workers (here defined as all laborers and semiskill occupations) of 33 percent a year or more after repeal, 40 percent three or more years after repeal, and 52 percent five or more years after repeal. Although the number of high school dropouts is falling economy wide including within construction, the declines are smallest in the construction industry of repeal states. These smaller declines are evidence that employers, enabled by prevailing wage law repeal, substitute less educated workers for more educated workers and that this substitution is more likely the less-skilled the occupation.

6.6 Conclusion

Table 6.19 summarizes the key findings of my analysis of the employment of high school dropouts in the construction industry of repeal states. The relative odds of employment of high school dropouts among construction workers in states that repealed a state prevailing wage law, depending on the definition of the period after repeal,

Table 6.19 Percent Change in the Odds of the Employment of High School Dropouts Overall, by Race and by Union Membership

Black (Union) Construction Workers Relative to all other Construction Workers	*Overall*		*Race*		*Union Membership*	
1 or more years after repeal			4.58%		-0.19%	
3 or more years after repeal			-2.91%		0.29%	
5 or more years after repeal			-2.05%		-3.82%	
Construction relative to nonconstruction						
1 or more years after repeal	11.73%	***	13.71%	***	12.45%	**
3 or more years after repeal	16.38%	***	19.57%	***	16.89%	***
5 or more years after repeal	20.88%	***	24.09%	***	21.57%	***

Note: ***,** and * indicate significance at the 1, 5, and 10 percent levels respectively.

increased in range of 12 to 21 percent. I could find no evidence to suggest that repeal altered the odds of the employment of Black high school dropouts relative to non-Blacks. We had the same result for union membership, with no evidence that repeal altered the odds of employment of high school dropouts among construction union members relative to nonunion members. I did find that the relative odds of employment of high school dropouts among all union members within and outside of construction declined in repeal states after repeal.

In Table 6.20 I summarize the results of my analysis of the impact of repeal on the employment of high school dropouts by skill. The relative increase in the employment of high school dropouts among all construction workers in repeal states differs by skill level with the increase in dropouts among less-skilled construction occupations like laborers and painters greater than the increases in the number of dropouts among higher-skill occupations like electricians and heavy equipment operators.

Table 6.20 Change in the Odds of the Employment of High School Dropouts by Skill

	Laborer							
	vs. Craftsman		vs. High Skill		vs. Medium Skill		vs. Semiskill	
1 or more years after repeal								
Laborers	13.11%		10.78%		34.21%	**	-3.85%	
All	9.13%		16.38%		-4.30%		32.47%	***
3 or more years after repeal								
Laborers	19.93%	*	16.18%		44.11%	***	0.64%	
All	12.51%	**	21.86%	*	-2.10%		39.07%	***
5 or more years after repeal								
Laborers	19.48%		17.06%		46.61%	***	-5.69%	
All	16.67%	**	23.97%	*	-1.38%		52.15%	***

Note: See Table 6.19.

The repeal of prevailing wage laws alters the human capital structure of the construction labor force increasing (in relative terms) the participation of high school dropouts in the industry. Because prevailing wage repeals lower wages and benefits paid in construction, a likely causal factor in the shift towards a less educated labor force is the relative decline of the monetary rewards derived from construction employment. It may also be that working conditions worsen as well, but working conditions over time are difficult to measure and consequently this proposition has not been tested. A salient result of this research is the fact that the decline in formal educational achievement has not been concentrated among union workers despite the finding by Kessler and Katz (2001) that union workers felt the brunt of repeal-generated wage declines. However, Kessler and Katz did not measure the effect of repeals on benefits.

In Chapter 5 we found that the declines in benefits generated by prevailing wage law repeals were not concentrated among union workers. Rather my analysis suggests

that as union membership was eroded by repeal, on average benefits coverage declined not because unions dropped coverage but because of the greater share of the labor market represented by nonunion workers. The general absence of these fringes in the open shop is among the factors causing the decline in formal educational attainment in the construction labor market. These findings are consistent with a common concern expressed within the industry press that construction is increasingly facing a skilled labor shortage. However, this research suggests that the relative shortage in formally trained workers is exacerbated in states that have repealed their prevailing wage laws.

CHAPTER 7

CONCLUSION

The construction labor market is shaped by two distinct sectors: the union and open shop. Contractors in the open shop compete both with other open shop firms as well as with unionized contractors. This inter- and intrasector competition in turn influences average wages, union density, pension and health coverage, and the years of schooling of the construction labor force.

Competition among contractors in the union sector is shaped by the presence of a collective bargaining agreement which establishes for all the signatory contractors a set of wage and benefit rates for each construction occupation. Furthermore each contractor is required under the agreement to make contributions to an apprenticeship program. In exchange for these mandated levels of wage, benefit, and training expenditure, the signatories gain access to the current pool of unionized labor. Sectorwide rates of compensation and training expenditure mean that contractors are prevented from gaining a competitive advantage through the pursuit of lower rates of compensation or spending on training. Of course the total wage bill is not just a function of labor rates, but it is also a function of hours of work, and thus contractors are free under collective bargaining to achieve a competitive advantage by organizing the production process in a manner which lowers the hours of work required to complete a project. Such competition can take the

form of better materials management and the maintenance of high-quality capital equipment.

The defining feature of competition among firms in the open shop is the potential for contractors to gain a competitive advantage through access to the lowest possible wage rates and spending on training. Even here this kind of competition is limited by the contractor's need for a set of high-skill blue-collar workers. Contractors in the open shop are unable to establish comprehensive multiemployer apprenticeship programs because such programs would require setting a standard contribution by each employer and an agreement across all contractors on how to share access to the workers trained by such programs. In the absence of a collective bargaining agreement open shop multiemployer apprenticeship programs would be plagued by a version of the prisoner's dilemma. Although all contractors may benefit from a standard contribution, every contractor has an incentive to cheat, to gain a competitive advantage through violation of the agreement. The same incentive may exist under collective bargaining, but the problem is avoided by the presence of a third party (the union) to the contract that can penalize cheaters by denying access to the pool of trained labor.

Open shop contractors still have a need for skilled labor and thus they bifurcate their workforce into skilled key workers and interchangeable relatively unskilled workers. Key workers are given access to health insurance, pension plans, and informal promises of steady employment with the contractor from project to project. Any desire the firm may have to gain a competitive advantage by bidding down the wages or benefits of these workers is limited by the lack of a steady supply of similarly skilled workers either in the construction labor market or the overall labor market. It is among

less-skilled construction workers that employers can pursue policies and procedures which achieve the lowest possible rate of pay. These low-skill laborers are not given access to a health plan or a pension and are hired and fired in accordance with the firm's needs. Depending on the size of the contractor there will also need to be key workers among the less skilled who operate as supervisors and on-the-job trainers for a pool of workers who will often either be new to the industry or returning after stint in another low-wage labor market.

Contractors in these two distinct sectors also compete with one another, with union contractors typically succeeding in markets where the final product is nonstandard and highly complex, commercial, and industrial work. Even here open shop contractors can effectively compete but typically only as very large firms. Large firm size lowers the cost of providing pension plans and health coverage, key fringes that in addition to high wages are needed to attract skilled workers. With size also comes the promise of steady employment which when combined with the appropriate level and mix of compensation allows expenditures on training to pose less of a risk in terms of poaching by smaller open shop contractors. However open shop contractors generally succeed in standard, less complex markets like residential home construction and light commercial development.

Prevailing wage laws promote collective bargaining by assuring contractors that the rates of pay and training expenditure on publicly financed construction projects are not subject to being undercut by open shop contractors who could as a result submit the lowest bid. The repeal of prevailing wage laws thus removes this protection for union contractors. The first consequence of repeal, as was shown in Chapter 4, is to erode

union membership, as union contractors either go out of business or fail to renew their collective bargaining agreements. As a further consequence of repeal as demonstrated in Chapter 5, the remaining union contractors win wage concessions from their entire union workforce. In Chapter 5 I could find no evidence that these wage concessions were concentrated among less-skilled trades; rather repeal lowered all union members' wages equally. Although others (Peterson 2001, 2004) have shown these concessions included the level of contributions to benefits particularly pension plans, Chapter 5 also illustrated that the erosion of union density had the consequence of lowering the percentage of workers with both a pension and health plan. As union membership has declined, so has the percentage of workers with both a pension and health insurance. The effect of repeal was not concentrated in the union sector but also rippled through the nonunion labor force with the effect shaped by the dual nature of the open shop labor force. Specifically I have shown that repeal lowered the relative wages of less-skilled construction occupations in the open shop. Repeal did not lower the relative wages of higher-skilled open shop construction workers, a result which confirms the lack of bargaining power contractors have in a market with few formal institutions generating high-skilled construction labor.

The presence of formal apprenticeship training programs which most often require a high school diploma for admittance directly increases the average level of educational attainment in the construction labor market both by virtue of the requirement of a diploma and in some cases through requirements of additional years of schooling as part of training. Furthermore the investment in human capital in these programs also attracts workers that demonstrate a greater willingness to invest in themselves, this is,

because the skills imparted provide access to a career that involves relatively high wages, health insurance to protect these investments, and old age insurance in the form of pension plans.

To the extent that state prevailing wage law repeal undermines collective bargaining, it will also eliminate or greatly reduce in absolute and relative terms the volume of apprenticeship training in construction labor market. In Chapter 6 I found that state prevailing wage law repeal increased the relative participation of high school dropouts in the construction labor market. Furthermore these relative increases in the participation of high school dropouts in the construction labor market were concentrated among less-skilled construction workers. This finding is further evidence that prevailing wage law repeal frees contractors competing in or entering into the market for state-financed construction projects to gain a competitive advantage by pursuing the lowest possible wage rate among low-skill construction workers. Specifically I interpret the relative increase in participation of construction workers with less than a high school diploma among less-skilled construction workers as evidence that with repeal, on average, contractors lower wages by competing more aggressively for low-wage workers from other sectors.

My findings on race suggest the need for substantial additional research. Although I found that repeal lowered the union density of Black construction workers, I attribute this effect to the high concentration of Black construction workers in the construction unions hardest hit by repeal, low-skill unions (Chapter 4). In general I find that between 1977 and 2002 there was a shift in the participation of Blacks across the entire construction labor market (including experimental and non-experimental states).

Specifically the shares of Black construction workers employed in low-skill construction occupations declined while the shares participating in higher-skilled occupations across the union and nonunion sector increased.

In the midst of this occupational shift I find that in analysis based on the Current Population Survey (CPS) evidence of relative gains for Black construction workers in terms of hourly wages as a result of repeal is not robust to the inclusion of additional years of data, starting in 1995 and proceeding up to 2002 (Appendix A).[1] Further research requires an analysis of the effect of repeal on the average wage of Black construction workers based on a sample that includes data from the Decennial Census (Census) between 1969 and 1999. This additional research is needed to confirm whether the conclusions this dissertation has made regarding the robustness of CPS-based results also plague similar findings generated from Census samples. This work could also support or refute this dissertation's failure to find relative to the trend affecting all construction workers a gain or loss in the participation of Black high school dropouts. Finally additional Census work is required to support the findings across all these labor market outcomes with respect to the occupation-based skill categories.

[1] I also fail to find relative to the trend affecting all construction workers a gain or loss in coverage by pension plans, health insurance, or both fringes together.

APPENDIX A

1977 TO 1993

A.1 Introduction

The findings on real hourly wages are consistent with previous published work with only one critical exception. I find no evidence that the effect of repeal for Black construction workers differs from the effect on non-Black workers while Katz and Kessler (2001) found that the wages of Black construction workers increased relative to non-Blacks as a result of repeal. This discrepancy necessitates a comparison of the results to those of previous authors. I find that while this sample differs by 30 observations from the sample used by Katz and Kessler, the results are essentially the same between 1977 and 1993 for construction overall, by race and by union status. Confirming the existence of the discrepancy by race in my own sample I evaluate the robustness of the race results and conclude that the bulk of evidence suggests there is no differential impact of repeal by race.

Table A.1 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	After Repeal = a year or more			
	Kessler and Katz	Price	Kessler and Katz	Price
Repeal State*After Repeal*Construction	-0.039 **	-0.038 ***	-0.002	-0.001
	0.016	0.007	0.013	0.008
Repeal State*After Repeal	-0.012 *	-0.012 ***	-0.015 **	-0.015 ***
	0.007	0.003	0.007	0.003
State*Construction Fixed Effects	No	No	Yes	Yes
N	1,017,875	1,017,905	1,017,875	1,017,905

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-93) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. After repeal is defined as the year following repeal. Observations weighted using CPS weights.

A.2 Construction 1977 to 1993

In Table A.1 the coefficients generated from the sample with the period of analysis limited to data collected between 1977 and 1993[1] are compared to those of previous authors. The models applied in both analyses are identical. Throughout this study the measurement of the effect of repeal has included a control for race which is actually an amalgamation of race and Spanish ethnicity; specifically our control for Black compares Black non-Hispanics to all other racial and ethnic groups. In order to be sure that my analysis approximates as closely as possible the controls used in Katz and Kessler the results compared to previous work in this appendix include a racial control

[1] Using the same sampling procedure as well as the same source of CPS data (National Bureau of Economic Research - http://www.nber.org/data/cps_index.html) my sample of nonagricultural blue-collar workers age 16 to 64 collected between 1977 and 1993 included 1,017,905 observations. The sample size reported by Katz and Kessler for the same sample period is smaller by 30 observations (1,017,875). For the purposes of comparison in the samples limited to data collected between 1977 and 1993 both Michigan and Oklahoma are treated as nonexperimental states because both states had a prevailing wage law between 1979 and 1993.

that ignores ethnicity and thus compares Blacks to non-Blacks. Given the small percentage of Hispanics who also report being Black, this distinction changes the coefficients little if at all. A year or more following repeal I find that the real hourly wages of construction workers declined by 3.8 percent, a result consistent with Katz and Kessler. In both sets of analysis the introduction of a dummy variable for each states construction labor market eliminates the negative effect of repeal on real hourly wages. In Table A.2 we present the coefficients from equation 3.6 where the period following repeal is divided into a short- and long-run effect. Consistent across both sets of analysis there is no evidence of a negative effect of repeal on real hourly wages for construction workers.

A.3 Race 1977 to 1993

In Tables A.3 and A.4 we reproduce our and previous findings on race between 1977 and 1993. A year or more after repeal Katz and Kessler find that the real hourly wages of Black construction workers increase relative to all construction workers by 5.5 percent while in my replication I find a relative gain of 4.7 percent.

In Table A.4 we report the coefficients from equation 3.6 which allows for short- and long-run differences in the effect of repeal on hourly wages by race. Three or more years following repeal the real hourly wages of Black construction workers increase relative to all construction workers by 5.6 percent in Katz and Kessler and in my analysis by 4.7 percent. Five or more years following repeal the relative increase in the hourly wages of Black construction workers increased by 6.8 percent in Katz and Kessler and by 6.5 percent in my analysis. Furthermore only in our specification there is evidence of an

Table A.2 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long and Shortly after Repeal 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After = 3 or more years		*Long After = 5 or more years*	
	Kessler and Katz	Price	Kessler and Katz	Price
Repeal State*Long After Repeal*Construction	0.005	-0.006	0.004	-0.010
	0.015	0.009	0.014	0.009
Repeal State*Shortly After Repeal*Construction	-0.005	0.009	-0.008	0.006
	0.014	0.010	0.015	0.008
Repeal State*Long After Repeal	-0.020 **	-0.012 ***	-0.021 ***	-0.007 **
	0.009	0.003	0.007	0.003
Repeal State*Shortly After Repeal	-0.014 **	-0.020 ***	-0.010	-0.020 ***
	0.007	0.003	0.008	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,017,875	1,017,905	1,017,875	1,017,905

Note: In the first two columns, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In the last two columns "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. Observations weighted using CPS weights. See Table A.1 for additional notes.

Table A.3 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings a Year or More Following Repeal by Race 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*	
	After Repeal = a year or more	
	Katz & Kessler	Price
Repeal State*After Repeal*Construction*Black	0.055 *	0.047 *
	0.032	0.025
Repeal State*After Repeal*Construction	-0.013	-0.011
	0.014	0.008
Repeal State*After Repeal*Black	-0.036 ***	-0.036 ***
	0.011	0.007
State*Construction Fixed Effects	Yes	Yes
N	1,017,875	1,017,905

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-93) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. After repeal is defined as the year following repeal. Observations weighted using CPS weights.

Table A.4 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after and Shortly after Repeal by Race 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long After = 3 or more years		*Long After = 5 or more years*	
	Katz & Kessler	Price	Katz & Kessler	Price
Repeal State*Long After Repeal*Construction*Black	0.056 *	0.047 *	0.068 *	0.065 **
	0.034	0.027	0.036	0.029
Repeal State*Shortly After Repeal*Construction*Black	0.051	0.046	0.037	0.030
	0.034	0.031	0.031	0.027
Repeal State*Long After Repeal*Construction	-0.015	-0.016 *	-0.020	-0.022 **
	0.015	0.009	0.016	0.010
Repeal State*Shortly After Repeal*Construction	-0.006	-0.002	-0.006	-0.004
	0.016	0.010	0.015	0.009
Repeal State*Long After Repeal*Black	-0.035 ***	-0.036 ***	-0.034 ***	-0.030 ***
	0.012	0.008	0.012	0.009
Repeal State*Shortly After Repeal*Black	-0.040 **	-0.036 ***	-0.039 ***	-0.040 ***
	0.016	0.009	0.013	0.008
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,017,875	1,017,905	1,017,875	1,017,905

Note: In the first two columns "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In the last two columns "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. See Table A.3 for additional notes.

overall decline in the wages of construction workers (relative to nonconstruction workers) as a result of repeal.

A.4 Union Membership 1977 to 1993

In Tables A.5 and A.6 I report the effect of repeal on real hourly earnings by union membership. A year or more after repeal Katz and Kessler found the earnings of union members decreased relative to nonunion members by 5.9 percent which is slightly greater than our own relative decline of 4.8 percent.

Three or more years after repeal (Table A.6) Katz and Kessler found that the wages of union members declined by 9.8 percent while five or more years after repeal union wages fell by 11.2 percent. My estimates from the same period were of a relative decline in union wages of 9 percent three or more years after repeal, and 9.7 percent five or more years after repeal, slightly smaller but in any case very similar results.

A.5 Revisiting Race

In Table 5.33 of Chapter 5 I found no evidence between 1977 and 2002 of a relative gain in hourly wages for Black[2] construction workers as a result of repeal. However between 1977 and 1993 (Table A.3 and Table A.4) I find evidence consistent with previous authors of a relative gain in hourly earnings for Black construction workers as a result of repeal.[3] Crucially a relative gain in real wages for Black construction

[2] In chapter 5 all specifications used a control for race and ethnicity and thus Black non Hispanic construction workers were compared to all other racial and ethnic groups. Eliminating ethnicity from the definition of Black we still find no evidence of a relative gain for Black construction workers as a result of repeal.

[3] The addition of each state's annual unemployment rate to equations 5.3 and 5.4 did not alter the race effect in either sample (1977 to 1993 and 1977 to 2002).

Table A.5 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings a Year or More Following Repeal by Union Membership 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*	
	After Repeal = a year or more	
	Kessler and Katz	Price
Repeal State*After Repeal*Construction*Union	-0.059**	-0.048**
	0.026	0.021
Repeal State*After Repeal*Construction	-0.001	-0.002
	0.019	0.010
Repeal State*After Repeal*Union	-0.015	-0.016**
	0.012	0.008
Repeal State*After Repeal	-0.007	-0.007**
	0.008	0.003
State*Construction Fixed Effects	Yes	Yes
N	754,609	754,636

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-93) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. After repeal is defined as the year following repeal. Observations weighted using CPS weights.

Table A.6 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after and Shortly after Repeal by Union Membership 1977-1993

Dependent = Natural Log (Real Hourly Earnings)	*OLS*			
	Long after = 3 or more years		*Long After = 5 or more years*	
	Kessler and Katz	Price	Kessler and Katz	Price
Repeal State*Long After Repeal*Construction*Union	-0.098***	-0.090***	-0.112***	-0.097***
	0.026	0.024	0.028	0.027
Repeal State*Shortly After Repeal*Construction*Union	0.051	0.023	-0.006	-0.020
	0.035	0.028	0.030	0.024
Repeal State*Long After Repeal*Construction	0.006	0.004	0.007	0.000
	0.020	0.011	0.021	0.011
Repeal State*Shortly After Repeal*Construction	-0.026	-0.017	-0.012	-0.004
	0.026	0.013	0.019	0.011
Repeal State*Long After Repeal*Union	-0.006	-0.007	-0.011	-0.018*
	0.013	0.009	0.014	0.010
Repeal State*Shortly After Repeal*Union	-0.043*	-0.034***	-0.020	-0.015*
	0.026	0.011	0.018	0.009
Repeal State*Long After Repeal	-0.008	-0.007**	-0.006	-0.002
	0.009	0.004	0.009	0.004
Repeal State*Shortly After Repeal	-0.004	-0.006	-0.009	-0.011***
	0.011	0.004	0.009	0.004
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	754,609	754,636	754,609	754,636

Note: In the first two columns "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In the last two columns "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. See Table A.5 for additional notes.

workers between 1977 and 1993 remains an effect without a proper explanation. The most obvious theory would suggest that because repeal has a relatively greater effect on the real hourly earnings of union members the relative gain for Black construction workers must result from their concentration among nonunion construction workers, but my own analysis from Chapter 4 has shown that Black union density over this entire period has been equal to or slightly higher than non-Black union density. Complicating matters further, after lengthening the period of analysis I can find no evidence of a relative gain in wages for Black construction workers.

In Table A.7, A.8, and A.9 I report the coefficients from equations 3.7 and 3.8 for a series of samples prior to and post-1993. My intent here is to evaluate the robustness of the results from the sample covering the whole period up to 2002 as well as those from the sample limited to the period between 1977 and 1993. In the following tables I returned to a control for race and ethnicity where Black is defined as Black non-Hispanic. I created 13 samples all beginning in 1977 but with sequence of endpoints that start in 1990 and end in 2002. Each column is labeled with the last year of data contained in the sample.

None of the coefficients for the effect of repeal on construction workers Black or otherwise are significantly different from 0 for the sample covering the period between 1977 and 1990; this result is not entirely surprising given that I have reduced the span of time available to measure the impact of repeal. Indeed the evidence of an effect of repeal on all construction workers in the next sample covering the period between 1977 and 1991 is fairly weak showing up only in Table A.9 where the period after repeal is five or more years. After 1991 there is stronger evidence in every subsequent sample up to and

Table A.7 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings a Year or More Following Repeal by Race

Dependent = Natural Log (Real Hourly Earnings)	After Repeal = a year or more				
	1990	1991	1992	1993	1994
Repeal State*After Repeal*Construction*Black	0.030	0.038	0.049 *	0.046 *	0.038
	0.027	0.026	0.025	0.025	0.024
Repeal State*After Repeal*Construction	-0.004	-0.007	-0.009	-0.011	-0.013
	0.009	0.009	0.009	0.008	0.008
Repeal State*After Repeal*Black	-0.028 ***	-0.028 ***	-0.033 ***	-0.036 ***	-0.032 ***
	0.008	0.008	0.008	0.007	0.007
Repeal State*After Repeal	-0.007 **	-0.009 ***	-0.010 ***	-0.010 ***	-0.011 ***
	0.003	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	837,540	899,270	958,913	1,017,905	1,074,664
Dependent = Natural Log (Real Hourly Earnings)					
	1995	1996	1997	1998	1999
Repeal State*After Repeal*Construction*Black	0.012	0.017	0.008	0.010	0.006
	0.023	0.022	0.022	0.021	0.021
Repeal State*After Repeal*Construction	-0.013 *	-0.016 **	-0.016 **	-0.016 **	-0.015 **
	0.008	0.007	0.007	0.007	0.007
Repeal State*After Repeal*Black	-0.032 ***	-0.033 ***	-0.034 ***	-0.031 ***	-0.030 ***
	0.007	0.007	0.006	0.006	0.006
Repeal State*After Repeal	-0.010 ***	-0.009 ***	-0.007 ***	-0.006 ***	-0.006 **
	0.003	0.003	0.002	0.002	0.002
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,130,913	1,180,957	1,231,940	1,283,089	1,387,051

Dependent = Natural Log (Real Hourly Earnings)	2000	2001	2002
Repeal State*After Repeal*Construction*Black	-0.002	0.000	0.003
	0.020	0.020	0.020
Repeal State*After Repeal*Construction	-0.014 **	-0.014 **	-0.014 **
	0.007	0.007	0.006
Repeal State*After Repeal*Black	-0.029 ***	-0.027 ***	-0.025 ***
	0.006	0.006	0.006
Repeal State*After Repeal	-0.004 *	-0.003	-0.003
	0.002	0.002	0.002
State*Construction Fixed Effects	Yes	Yes	Yes
N	1,387,051	1,441,856	1,499,900

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients. Data set drawn from May (1977-78) and Outgoing Rotations (1979-93) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. After repeal is defined as the year following repeal. Observations weighted using CPS weights. Black here is defined as Black non-Hispanic.

Table A.8 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after (Three or More Years) and Shortly after (One to Two Years) Repeal by Race

Dependent = Natural Log (Real Hourly Earnings)	After Repeal = 3 or more years			
	1990	1991	1992	1993
Repeal State*Long After Repeal*Construction*Black	0.022	0.032	0.049 *	0.048 *
	0.030	0.029	0.028	0.027
Repeal State*Shortly After Repeal*Construction*Black	0.040	0.045	0.047	0.044
	0.033	0.032	0.031	0.031
Repeal State*Long After Repeal*Construction	-0.009	-0.012	-0.014	-0.016 *
	0.011	0.010	0.010	0.009
Repeal State*Shortly After Repeal*Construction	0.001	-0.001	-0.002	-0.002
	0.011	0.010	0.010	0.010
Repeal State*Long After Repeal*Black	-0.026 ***	-0.024 ***	-0.032 ***	-0.036 ***
	0.010	0.009	0.009	0.008
Repeal State*Shortly After Repeal*Black	-0.031 ***	-0.031 ***	-0.034 ***	-0.035 ***
	0.010	0.009	0.009	0.009
Repeal State*Long After Repeal	-0.004	-0.005	-0.007 **	-0.008 **
	0.004	0.004	0.003	0.003
Repeal State*Shortly After Repeal	-0.011 ***	-0.014 ***	-0.015 ***	-0.015 ***
	0.004	0.004	0.004	0.004
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	837,540	899,270	958,913	1,017,905
Dependent = Natural Log (Real Hourly Earnings)	1994	1995	1996	1997
Repeal State*Long After Repeal*Construction*Black	0.039	0.012	0.020	0.013
	0.026	0.025	0.024	0.023
Repeal State*Shortly After Repeal*Construction*Black	0.037	0.012	0.010	-0.003
	0.031	0.030	0.029	0.028
Repeal State*Long After Repeal*Construction	-0.018 **	-0.019 **	-0.023 ***	-0.025 ***
	0.009	0.008	0.008	0.008
Repeal State*Shortly After Repeal*Construction	-0.002	-0.003	-0.005	-0.004
	0.010	0.010	0.009	0.009
Repeal State*Long After Repeal*Black	-0.031 ***	-0.030 ***	-0.031 ***	-0.032 ***
	0.008	0.007	0.007	0.007
Repeal State*Shortly After Repeal*Black	-0.033 ***	-0.036 ***	-0.038 ***	-0.038 ***
	0.009	0.009	0.008	0.008
Repeal State*Long After Repeal	-0.008 **	-0.008 **	-0.006 *	-0.003
	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.016 ***	-0.014 ***	-0.013 ***	-0.012 ***
	0.004	0.004	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,074,664	1,130,913	1,180,957	1,231,940

Table A.8 (cont)

Dependent = Natural Log (Real Hourly Earnings)	After Repeal = 3 or more years				
	1998	1999	2000	2001	2002
Repeal State*Long After Repeal*Construction*Black	0.018	0.013	0.002	0.004	0.007
	0.023	0.022	0.021	0.021	0.021
Repeal State*Shortly After Repeal*Construction*Black	-0.007	-0.008	-0.012	-0.012	-0.011
	0.028	0.028	0.028	0.028	0.028
Repeal State*Long After Repeal*Construction	-0.024***	-0.022***	-0.021***	-0.020***	-0.020***
	0.008	0.007	0.007	0.007	0.007
Repeal State*Shortly After Repeal*Construction	-0.004	-0.003	-0.002	-0.003	-0.003
	0.009	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.030***	-0.029***	-0.028***	-0.025***	-0.023***
	0.007	0.007	0.007	0.006	0.006
Repeal State*Shortly After Repeal*Black	-0.035***	-0.033***	-0.032***	-0.031***	-0.030***
	0.008	0.008	0.008	0.007	0.007
Repeal State*Long After Repeal	-0.002	-0.001	0.001	0.002	0.002
	0.003	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.012***	-0.012***	-0.012***	-0.012***	-0.012***
	0.003	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,283,089	1,387,051	1,387,051	1,441,856	1,499,900

Note: See Table A.7.

Table A.9 Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after (Five or More Years) and Shortly after (One to Four Years) Repeal by Race

Dependent = Natural Log (Real Hourly Earnings)	After Repeal = 5 or more years			
	1990	1991	1992	1993
Repeal State*Long After Repeal*Construction*Black	0.037	0.049	0.063**	0.064**
	0.032	0.031	0.030	0.029
Repeal State*Shortly After Repeal*Construction*Black	0.024	0.029	0.037	0.030
	0.030	0.029	0.028	0.027
Repeal State*Long After Repeal*Construction	-0.013	-0.019*	-0.021**	-0.022**
	0.012	0.011	0.010	0.010
Repeal State*Shortly After Repeal*Construction	0.000	-0.002	-0.003	-0.004
	0.010	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.026**	-0.023**	-0.027***	-0.029***
	0.010	0.010	0.009	0.009
Repeal State*Shortly After Repeal*Black	-0.031***	-0.032***	-0.037***	-0.040***
	0.009	0.009	0.008	0.008
Repeal State*Long After Repeal	0.001	-0.001	-0.003	-0.004
	0.004	0.004	0.004	0.004
Repeal State*Shortly After Repeal	-0.011***	-0.013***	-0.014***	-0.015***
	0.004	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	837,540	899,270	958,913	1,017,905
Dependent = Natural Log (Real Hourly Earnings)	1994	1995	1996	1997
Repeal State*Long After Repeal*Construction*Black	0.053*	0.026	0.034	0.029
	0.028	0.026	0.025	0.024
Repeal State*Shortly After Repeal*Construction*Black	0.023	0.011	0.010	0.004
	0.027	0.027	0.027	0.027
Repeal State*Long After Repeal*Construction	-0.024**	-0.022**	-0.029***	-0.031***
	0.009	0.009	0.009	0.008
Repeal State*Shortly After Repeal*Construction	-0.004	-0.003	-0.008	-0.008
	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.024***	-0.023***	-0.023***	-0.023***
	0.008	0.008	0.008	0.007
Repeal State*Shortly After Repeal*Black	-0.037***	-0.036***	-0.035***	-0.033***
	0.008	0.008	0.008	0.008
Repeal State*Long After Repeal	-0.004	-0.005	-0.004	-0.002
	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.016***	-0.017***	-0.017***	-0.017***
	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,074,664	1,130,913	1,180,957	1,231,940

Note: See Table A.7.

Table A.9 (cont)

Dependent = Natural Log (Real Hourly Earnings)	After Repeal = 5 or more years				
	1998	1999	2000	2001	2002
Repeal State*Long After Repeal*Construction*Black	0.031	0.026	0.014	0.017	0.018
	0.023	0.023	0.022	0.022	0.021
Repeal State*Shortly After Repeal*Construction*Black	-0.001	-0.001	-0.009	-0.009	-0.010
	0.026	0.026	0.026	0.026	0.026
Repeal State*Long After Repeal*Construction	-0.029***	-0.027***	-0.026***	-0.026***	-0.024***
	0.008	0.008	0.008	0.007	0.007
Repeal State*Shortly After Repeal*Construction	-0.007	-0.005	-0.004	-0.004	-0.004
	0.009	0.008	0.008	0.008	0.008
Repeal State*Long After Repeal*Black	-0.021***	-0.022***	-0.022***	-0.020***	-0.018***
	0.007	0.007	0.007	0.007	0.007
Repeal State*Shortly After Repeal*Black	-0.030***	-0.031***	-0.030***	-0.030***	-0.029***
	0.008	0.008	0.008	0.008	0.008
Repeal State*Long After Repeal	-0.001	0.001	0.003	0.004	0.004
	0.003	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.017***	-0.018***	-0.018***	-0.018***	-0.018***
	0.003	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,283,089	1,334,797	1,387,051	1,441,856	1,499,900

Note: See Table A.7.

including 2002 of a relative decline in the hourly wages of construction workers as a result of repeal. Of the 12 samples where there is evidence of an effect of repeal on all construction workers there is evidence of a relative gain for Black construction workers in only three (the samples ending in 1992, 1993, and 1994).

It is important to note that the samples collected prior to and post-1993 differ in one important respect, one additional repeal in Oklahoma (1995), and one brief suspension in Michigan (1994 to 1997). In samples prior to repeal or suspension both of these states are treated as nonexperimental states as they were in Katz and Kessler's (2001) analysis. However in later samples these states are treated as experimental states. Is the switching of Oklahoma and Michigan from law to repeal linked to the failure to find a robust differential effect of repeal by race? To find out I repeated the sampling procedure described above and excluded all observations from both Michigan and Okalahoma from each of the 13 samples. Having made this adjustment the results were the same with evidence in only three (again 1992, 1993, and 1994) of 12[4] samples of a differential race effect. The results with Michigan and Oklahoma removed from the sample are presented in Tables A.10 through A.12.

In conclusion in addition to lacking a mechanism to explain how a law which has no explicit racial dimension to its application can affect Black and non-Black workers differently, my analysis suggests that the result itself is not robust.

[4] The exclusion of Oklahoma and Michigan did eliminate evidence of a negative effect for all construction workers from the sample covering the period between 1977 and 1991. Thus of the 11 samples where there is evidence of a negative effect on all construction workers there is evidence in only three of a relative gain for Black construction workers.

Table A.10 Michigan and Oklahoma Excluded, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings a Year or More Following Repeal by Race

	OKLAHOMA & MICHIGAN EXCLUDED			
Dependent = Natural Log (Real Hourly Earnings)	**After Repeal = a year or more**			
	1990	1991	1992	1993
Repeal State*After Repeal*Construction*Black	0.027	0.036	0.047 *	0.041 *
	0.027	0.026	0.026	0.025
Repeal State*After Repeal*Construction	-0.002	-0.005	-0.007	-0.008
	0.009	0.009	0.009	0.008
Repeal State*After Repeal*Black	-0.029 ***	-0.029 ***	-0.034 ***	-0.037 ***
	0.008	0.008	0.008	0.007
Repeal State*After Repeal	-0.011 ***	-0.012 ***	-0.014 ***	-0.014 ***
	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	792,490	850,688	906,777	962,163

Dependent = Natural Log (Real Hourly Earnings)	1994	1995	1996	1997
Repeal State*After Repeal*Construction*Black	0.036	0.017	0.022	0.019
	0.024	0.024	0.023	0.023
Repeal State*After Repeal*Construction	-0.010	-0.011	-0.015 *	-0.017 **
	0.008	0.008	0.008	0.008
Repeal State*After Repeal*Black	-0.033 ***	-0.031 ***	-0.031 ***	-0.031 ***
	0.007	0.007	0.007	0.007
Repeal State*After Repeal	-0.014 ***	-0.015 ***	-0.013 ***	-0.011 ***
	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,015,459	1,068,160	1,115,440	1,163,626

Note: See Table A.7.

Table A.10 (cont)

	OKLAHOMA & MICHIGAN EXCLUDED				
Dependent = Natural Log (Real Hourly Earnings)	**After Repeal = a year or more**				
	1998	1999	2000	2001	2002
Repeal State*After Repeal*Construction*Black	0.024	0.021	0.014	0.020	0.020
	0.022	0.022	0.021	0.021	0.021
Repeal State*After Repeal*Construction	-0.017**	-0.016**	-0.017**	-0.017**	-0.017**
	0.008	0.008	0.007	0.007	0.007
Repeal State*After Repeal*Black	-0.030***	-0.030***	-0.030***	-0.028***	-0.027***
	0.007	0.007	0.007	0.007	0.007
Repeal State*After Repeal	-0.010***	-0.009***	-0.007***	-0.006**	-0.005*
	0.003	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,211,864	1,260,643	1,310,089	1,362,259	1,417,806

Note: See Table A.7.

Table A.11 Michigan and Oklahoma Excluded, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after (Three or More Years) and Shortly after (One to Two Years) Repeal by Race

	OKLAHOMA & MICHIGAN EXCLUDED			
Dependent = Natural Log (Real Hourly Earnings)	**After Repeal = 3 or more years**			
	1990	1991	1992	1993
Repeal State*Long After Repeal*Construction*Black	0.018	0.028	0.046 *	0.045 *
	0.030	0.029	0.028	0.027
Repeal State*Shortly After Repeal*Construction*Black	0.040	0.045	0.047	0.043
	0.033	0.032	0.031	0.031
Repeal State*Long After Repeal*Construction	-0.006	-0.009	-0.011	-0.013
	0.011	0.010	0.010	0.009
Repeal State*Shortly After Repeal*Construction	0.003	0.000	0.000	-0.001
	0.011	0.010	0.010	0.010
Repeal State*Long After Repeal*Black	-0.027 ***	-0.025 ***	-0.033 ***	-0.037 ***
	0.010	0.009	0.009	0.008
Repeal State*Shortly After Repeal*Black	-0.032 ***	-0.032 ***	-0.035 ***	-0.037 ***
	0.010	0.009	0.009	0.009
Repeal State*Long After Repeal	-0.007 *	-0.009 **	-0.012 ***	-0.012 ***
	0.004	0.004	0.003	0.003
Repeal State*Shortly After Repeal	-0.014 ***	-0.016 ***	-0.017 ***	-0.017 ***
	0.004	0.004	0.004	0.004
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	792,490	850,688	906,777	962,163
Dependent = Natural Log (Real Hourly Earnings)	1994	1995	1996	1997
Repeal State*Long After Repeal*Construction*Black	0.036	0.014	0.022	0.018
	0.026	0.025	0.024	0.024
Repeal State*Shortly After Repeal*Construction*Black	0.037	0.025	0.023	0.020
	0.031	0.031	0.031	0.031
Repeal State*Long After Repeal*Construction	-0.015 *	-0.015 *	-0.020 **	-0.023 ***
	0.009	0.009	0.008	0.008
Repeal State*Shortly After Repeal*Construction	0.000	0.000	-0.002	-0.002
	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal*Black	-0.032 ***	-0.030 ***	-0.030 ***	-0.031 ***
	0.008	0.008	0.007	0.007
Repeal State*Shortly After Repeal*Black	-0.035 ***	-0.033 ***	-0.032 ***	-0.032 ***
	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal	-0.013 ***	-0.013 ***	-0.011 ***	-0.009 ***
	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.018 ***	-0.019 ***	-0.019 ***	-0.019 ***
	0.004	0.004	0.004	0.004
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,015,459	1,068,160	1,115,440	1,163,626

Table A.11 (cont)

Dependent = Natural Log (Real Hourly Earnings)	OKLAHOMA & MICHIGAN EXCLUDED				
	After Repeal = 3 or more years				
	1998	1999	2000	2001	2002
Repeal State*Long After Repeal*Construction*Black	0.024	0.021	0.012	0.019	0.019
	0.023	0.023	0.022	0.022	0.021
Repeal State*Shortly After Repeal*Construction*Black	0.024	0.025	0.021	0.024	0.022
	0.031	0.031	0.031	0.031	0.031
Repeal State*Long After Repeal*Construction	-0.021***	-0.021***	-0.021***	-0.021***	-0.020***
	0.008	0.008	0.008	0.008	0.007
Repeal State*Shortly After Repeal*Construction	-0.002	-0.001	-0.001	-0.002	-0.002
	0.010	0.010	0.010	0.010	0.010
Repeal State*Long After Repeal*Black	-0.029***	-0.030***	-0.029***	-0.028***	-0.026***
	0.007	0.007	0.007	0.007	0.007
Repeal State*Shortly After Repeal*Black	-0.031***	-0.031***	-0.031***	-0.030***	-0.030***
	0.009	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal	-0.008***	-0.006**	-0.004	-0.002	-0.002
	0.003	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.019***	-0.020***	-0.020***	-0.019***	-0.020***
	0.004	0.004	0.004	0.004	0.004
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,211,864	1,260,643	1,310,089	1,362,259	1,417,806

Note: See Table A.7.

Table A.12 Michigan and Oklahoma Excluded, Effects of State Prevailing Wage Law Repeal on Real Hourly Earnings Long after (Five or More Years) and Shortly after (One to Four years) Repeal by Race

	OKLAHOMA & MICHIGAN EXCLUDED			
Dependent = Natural Log (Real Hourly Earnings)	**After Repeal = 5 or more years**			
	1990	1991	1992	1993
Repeal State*Long After Repeal*Construction*Black	0.033	0.045	0.060 **	0.061 **
	0.032	0.031	0.030	0.029
Repeal State*Shortly After Repeal*Construction*Black	0.023	0.028	0.036	0.029
	0.030	0.029	0.028	0.028
Repeal State*Long After Repeal*Construction	-0.010	-0.016	-0.018 *	-0.018 *
	0.012	0.011	0.010	0.010
Repeal State*Shortly After Repeal*Construction	0.002	0.000	-0.001	-0.002
	0.010	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.027 ***	-0.024 **	-0.028 ***	-0.030 ***
	0.010	0.010	0.009	0.009
Repeal State*Shortly After Repeal*Black	-0.032 ***	-0.033 ***	-0.038 ***	-0.041 ***
	0.009	0.009	0.008	0.008
Repeal State*Long After Repeal	-0.003	-0.005	-0.007 *	-0.008 **
	0.004	0.004	0.004	0.004
Repeal State*Shortly After Repeal	-0.013 ***	-0.016 ***	-0.017 ***	-0.018 ***
	0.004	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	792,490	850,688	906,777	962,163
Dependent = Natural Log (Real Hourly Earnings)	1994	1995	1996	1997
Repeal State*Long After Repeal*Construction*Black	0.050 *	0.022	0.031	0.027
	0.028	0.026	0.025	0.024
Repeal State*Shortly After Repeal*Construction*Black	0.022	0.011	0.008	0.006
	0.027	0.027	0.027	0.027
Repeal State*Long After Repeal*Construction	-0.021 **	-0.022 **	-0.025 ***	-0.027 ***
	0.009	0.009	0.009	0.008
Repeal State*Shortly After Repeal*Construction	-0.002	-0.003	-0.004	-0.004
	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.026 ***	-0.023 ***	-0.025 ***	-0.027 ***
	0.008	0.008	0.008	0.008
Repeal State*Shortly After Repeal*Black	-0.039 ***	-0.036 ***	-0.037 ***	-0.036 ***
	0.008	0.008	0.008	0.008
Repeal State*Long After Repeal	-0.009 ***	-0.005	-0.008 **	-0.005 *
	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.019 ***	-0.017 ***	-0.020 ***	-0.020 ***
	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,015,459	1,130,913	1,115,440	1,163,626

Table A.12 (cont)

Dependent = Natural Log (Real Hourly Earnings)	*OKLAHOMA & MICHIGAN EXCLUDED*				
	After Repeal = 5 or more years				
	1998	1999	2000	2001	2002
Repeal State*Long After Repeal*Construction*Black	0.032	0.027	0.018	0.024	0.024
	0.024	0.023	0.023	0.022	0.022
Repeal State*Shortly After Repeal*Construction*Black	0.009	0.009	0.006	0.008	0.005
	0.027	0.027	0.027	0.027	0.027
Repeal State*Long After Repeal*Construction	-0.025***	-0.024***	-0.024***	-0.024***	-0.023***
	0.008	0.008	0.008	0.008	0.008
Repeal State*Shortly After Repeal*Construction	-0.003	-0.002	-0.002	-0.003	-0.003
	0.009	0.009	0.009	0.009	0.009
Repeal State*Long After Repeal*Black	-0.026***	-0.027***	-0.027***	-0.025***	-0.024***
	0.007	0.007	0.007	0.007	0.007
Repeal State*Shortly After Repeal*Black	-0.035***	-0.036***	-0.036***	-0.035***	-0.035***
	0.008	0.008	0.008	0.008	0.008
Repeal State*Long After Repeal	-0.004	-0.003	0.000	0.002	0.002
	0.003	0.003	0.003	0.003	0.003
Repeal State*Shortly After Repeal	-0.020***	-0.020***	-0.020***	-0.020***	-0.020***
	0.003	0.003	0.003	0.003	0.003
State*Construction Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	1,211,864	1,260,643	1,310,089	1,362,259	1,417,806

Note: See Table A.7.

APPENDIX B

ADDITIONAL RESULTS YEARS OF SCHOOLING

B.1 Introduction

In this appendix I explore our results on the percent of high school dropouts employed in the construction industry of repeal states by age and Spanish ethnicity. I will compare and contrast the effect of repeal on the employment of high dropouts on a sample limited to include only workers age 25 to 64 to the overall results based on a sample that includes workers age 16 to 64. The results will lead me to test for a difference associated with repeal in the employment of workers age 16 to 24. I will also examine trends in the employment of high school dropouts after excluding Hispanics from the sample.

B.2 Age 25 to 64

In Table B.1 I compare of the results from a sample of all workers age 16 to 64 to a sample limited to just workers age 25 to 64. Across all specifications limiting the sample to include just workers age 25 to 64 reduces the magnitude of the relative increase in the odds of employment of high school dropouts in repeal states; in most cases the difference between the results is relatively small. For example, in the presence of state

Table B.1 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*			
	25 to 64	16 to 64	25 to 64	16 to 64
	After Repeal = 1 or more years			
Repeal State*After Repeal*Construction	0.155***	0.229***	0.098**	0.111***
	0.035	0.030	0.045	0.038
	16.81%	25.75%	10.26%	11.73%
Repeal State*After Repeal	-0.013	0.002	-0.007	0.016
	0.016	0.013	0.016	0.014
	-1.31%	0.21%	-0.66%	1.63%
State*Construction Fixed Effects	No	No	Yes	Yes
N	1,135,808	1,499,900	1,135,808	1,499,900
Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Long After = 3 or more years*		Long After = 5 or more years	
Repeal State*Long After Repeal*Construction	0.136***	0.152***	0.160***	0.190***
	0.048	0.041	0.051	0.043
	14.55%	16.38%	17.33%	20.88%
Repeal State*Shortly After Repeal*Construction	0.004	0.009	-0.010	0.017
	0.060	0.052	0.057	0.049
	0.39%	0.90%	-1.01%	1.72%
Repeal State*Long After Repeal	-0.004	0.017	0.014	0.025
	0.018	0.015	0.019	0.016
	-0.42%	1.70%	1.36%	2.54%
Repeal State*Shortly After Repeal	-0.011	0.015	0.022	0.026
	0.021	0.018	0.021	0.017
	-1.11%	1.51%	2.23%	2.60%
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,135,808	1,499,900	1,135,808	1,499,900

Note:***,** and * indicate significance at the 1, 5, and 10 percent levels respectively. Standard errors reported below coefficients followed by the percent change in odds. The percent change in the odds is calculated as follows: (eβ-1)*100. Data set drawn from May (1977-78) and Outgoing Rotations (1979-2002) of the Current Population Survey. All specifications control for time, time*construction, and state fixed effects. In columns 1 and 2 "after repeal" is defined as the year following repeal. In column 3, "long after repeal" is 3 or more years, "shortly after repeal" is 1-2 years. In column 4 "long after repeal" is 5 or more years, "shortly after repeal" is 1-4 years. Observations weighted using CPS supplement weights.

construction fixed effects a year or more after repeal the odds of employment of high school dropouts increased by 10 percent for workers age 25 to 64 and 12 percent for all workers age 16 to 64. Three or more years after repeal (*Long After Repeal*) the odds of the employment of high school dropouts among workers age 25 to 64 increase 15 percent compared to an increased of 16 percent among workers age 16 to 64. Five or more years after repeal dropouts among construction workers age 25 to 64 increased 17 percent compared to 21 percent among construction workers age 16 to 64. What differences exist between the results from these two samples might be the result of increased participation of workers age 16 to 25 in the construction labor market as a result of repeal.

In order to test for this possibility I substituted the variable $Teen_{ist}$ for the dependent variable ED_{ist} in equations 6.1 and 6.2 where $Teen_{ist}$ is equal to 1 for workers age 16 to 25 and 0 otherwise. In Table B.2 I find no evidence that repeal increased the participation of these workers in the construction labor market.

B.3 Spanish Ethnicity

As illustrated in Figure B.1, there has been, since 1977, a steady rise in the Hispanic share of employment, and in the late 1990s the share of Hispanics within construction increased relative to the share outside the industry. The rising share of employment that Hispanics represent within construction is an important factor to be considered in the analysis of trends in years of schooling. Figure B.2 illustrates the percentage of high school dropouts by Spanish ethnicity for construction workers in 1977 and 2002. Although the percentage of high school dropouts among all other ethnic groups employed in construction have fallen from 37 to 16 percent over this period,

Table B.2 Effects of State Prevailing Wage Law Repeal on the Employment Workers Age 16 to 25 between 1977-2002

Dependent=Natural Log ($Teen_{ist}$ / 1-$Teen_{ist}$)	*Logit*			
	1	2	3	4
Repeal State*After Repeal*Construction	0.020	0.001		
	0.034	0.043		
	2.04%	0.08%		
Repeal State*After Repeal	-0.005	-0.003		
	0.015	0.015		
	-0.46%	-0.27%		
Repeal State*Long After Repeal*Construction			-0.007	-0.010
			0.047	0.049
			-0.67%	-0.97%
Repeal State*Shortly After Repeal*Construction			0.018	0.036
			0.058	0.056
			1.82%	3.68%
Repeal State*Long After Repeal			-0.002	-0.020
			0.017	0.018
			-0.16%	-2.01%
Repeal State*Shortly After Repeal			-0.005	-0.016
			0.020	0.020
			-0.48%	-1.62%
State*Construction Fixed Effects	No	Yes	Yes	Yes
N	1,499,900	1,499,900	1,499,900	1,499,900

Note: See Table B.1.

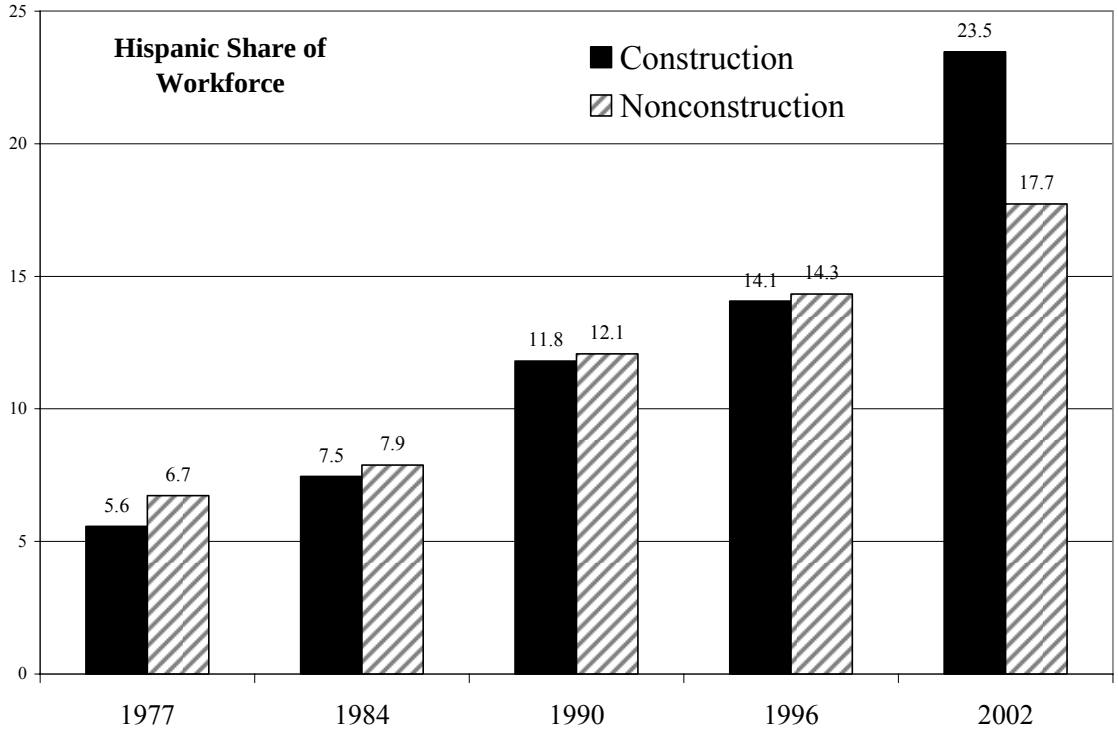

Figure B.1 Hispanic Share of Employment by Industry, 1977-2002

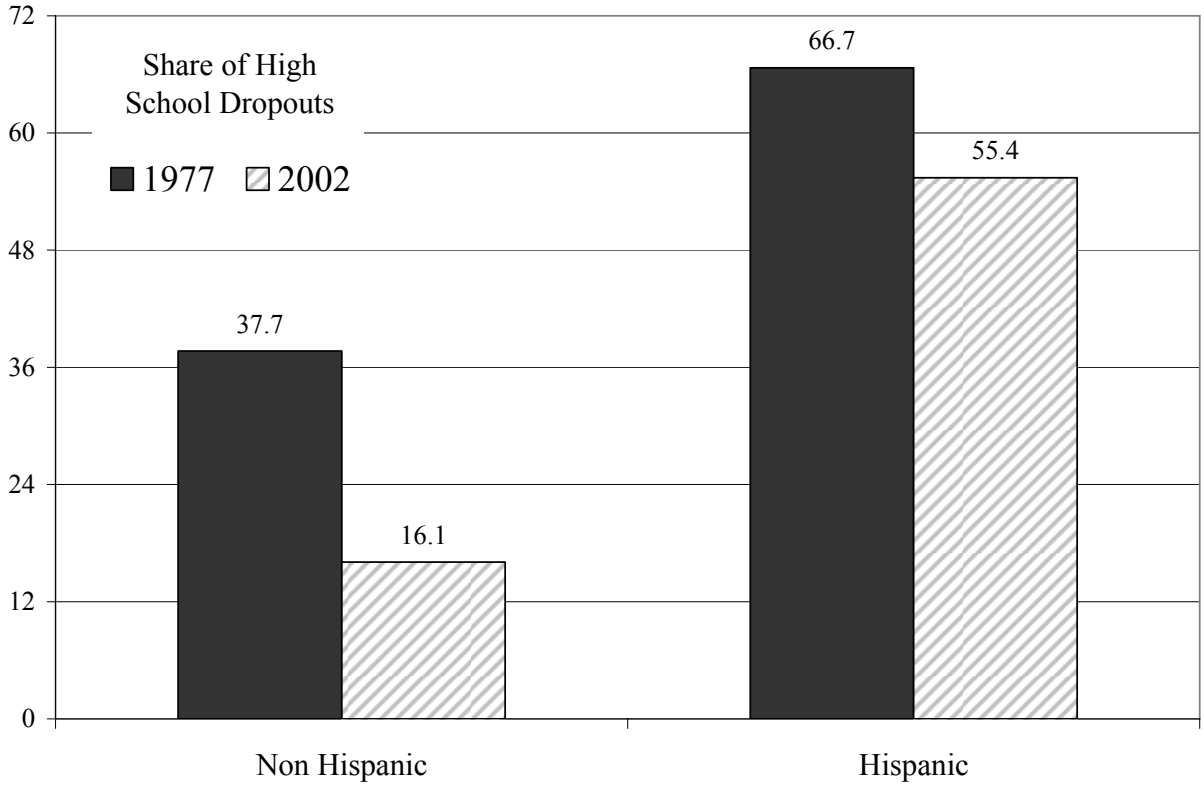

Figure B.2 Percent of High School Dropouts by Spanish Ethnicity Construction Only, 1977-2002

among Hispanics the share of high school dropouts in the industry has only declined from 66.7 to 55 percent. In Table B.3 I compare the overall results on the odds of employment of high school dropouts as a result of repeal to the same results on a sample that excludes all workers of Spanish ethnicity. In the presence of state construction fixed effects both when Hispanics are present and when they are absent, the odds of employment of high school dropouts increase as a result of repeal by 12 percent. Three or more years after repeal in the sample that excludes Hispanics, the odds of employment of high school dropouts among all construction workers are 15 percent compared to 16 percent in the larger sample. Five or more years after repeal the odds of employment of high school dropouts when Hispanics are absent increased by 19 percent compared to 21 percent in the larger sample. The trends in Spanish ethnicity influence little the overall effect of repeal on the employment of high school dropouts in the construction industry.

In Table B.4 compares the results by race with and without Hispanics in the sample. My definition of race in the column labeled *ALL* is a mixture of race and ethnicity where we compare Black non-Hispanic workers to all other workers. By excluding Hispanics from the sample in the column labeled *NO HISPANIC* the reference group is now non-Black non-Hispanic.

Even with the removal of Hispanics from the sample I find no evidence of a differential impact of repeal for Black construction workers in either Table B.4 (*Repeal State*After Repeal*Construction*Black*) or Table B.5 (*Repeal State*Long After Repeal*Construction*Black*). The effects of repeal on all construction workers relative to all other workers in Tables B.4 (*Repeal State*After Repeal*Construction*) and B.5

Table B.3 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*			
	NO HISPANIC	ALL	NO HISPANIC	ALL
	After Repeal = 1 or more years			
Repeal State*After Repeal*Construction	0.218 ***	0.229 ***	0.109 ***	0.111 ***
	0.032	0.030	0.041	0.038
	24.33%	25.75%	11.54%	11.73%
Repeal State*After Repeal	0.087 ***	0.002	0.101 ***	0.016
	0.014	0.013	0.014	0.014
	9.12%	0.21%	10.62%	1.63%
State*Construction Fixed Effects	No	No	Yes	Yes
N	1,352,911	1,499,900	1,352,911	1,499,900
Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Long After = 3 or more years*		Long After = 5 or more years	
Repeal State*Long After Repeal*Construction	0.136 ***	0.152 ***	0.172 ***	0.190 ***
	0.044	0.041	0.047	0.043
	14.55%	16.38%	18.79%	20.88%
Repeal State*Shortly After Repeal*Construction	0.043	0.009	0.066	0.017
	0.055	0.052	0.052	0.049
	4.35%	0.90%	6.82%	1.72%
Repeal State*Long After Repeal	0.117 ***	0.017	0.128 ***	0.025
	0.016	0.015	0.017	0.016
	12.42%	1.70%	13.69%	2.54%
Repeal State*Shortly After Repeal	0.072 ***	0.015	0.076 ***	0.026
	0.019	0.018	0.018	0.017
	7.43%	1.51%	7.85%	2.60%
State*Construction Fixed Effects	Yes	Yes	Yes	Yes
N	1,352,911	1,499,900	1,352,911	1,499,900

Note: See Table B.1.

Table B.4 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts a Year or More after Repeal 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	*Logit*	
	After Repeal = a year or more	
	NO HISPANIC	ALL
Repeal State*After Repeal*Construction*Black	0.046	0.045
	0.121	0.120
	4.74%	4.58%
Repeal State*After Repeal*Construction	0.121***	0.129***
	0.045	0.041
	12.84%	13.71%
Repeal State*After Repeal*Black	0.043	0.127***
	0.037	0.036
	4.41%	13.48%
Repeal State*After Repeal	0.099***	0.009
	0.016	0.015
	10.41%	0.89%
N	1,352,911	1,499,900

Note: See Table B.1.

Table B.5 Effects of State Prevailing Wage Law Repeal on the Employment of High School Dropouts Shortly and Long after Repeal 1977-2002

Dependent=Natural Log (ED_{ist} / 1-ED_{ist})	Logit			
	Long After = 3 or more years		Long After = 5 or more years	
	NO HISPANIC	ALL	NO HISPANIC	ALL
Repeal State*Long After Repeal*Construction*Black	-0.017	-0.030	-0.006	-0.021
	0.127	0.127	0.132	0.131
	-1.66%	-2.91%	-0.63%	-2.05%
Repeal State*Shortly After Repeal*Construction*Black	0.224	0.254	-0.007	0.042
	0.170	0.170	0.155	0.155
	25.12%	28.85%	-0.66%	4.26%
Repeal State*Long After Repeal*Construction	0.157***	0.179***	0.190***	0.216***
	0.048	0.044	0.051	0.046
	16.99%	19.57%	20.94%	24.09%
Repeal State*Shortly After Repeal*Construction	0.035	0.005	0.089	0.039
	0.059	0.055	0.056	0.052
	3.57%	0.51%	9.26%	3.93%
Repeal State*Long After Repeal*Black	0.018	0.116***	-0.006	0.095**
	0.040	0.039	0.042	0.041
	1.81%	12.31%	-0.63%	9.97%
Repeal State*Shortly After Repeal*Black	0.088*	0.147***	0.098**	0.146***
	0.047	0.047	0.046	0.046
	9.23%	15.82%	10.26%	15.74%
Repeal State*Long After Repeal	0.122***	0.015	0.138***	0.027
	0.018	0.016	0.019	0.017
	12.99%	1.55%	14.80%	2.75%
Repeal State*Shortly After Repeal	0.059***	-0.003	0.064***	0.011
	0.021	0.019	0.021	0.019
	6.02%	-0.34%	6.65%	1.12%
N	1,352,911	1,499,900	1,352,911	1,499,900

Note: See Table B.1.

(*Repeal State*Long After Repeal*Construction*) are consistent with the same effects in Table B.3.

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