

What Is the Intent of Davis-Bacon Act: An Inference by Means of Cluster Statistical Method?

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Abstract

The Davis-Bacon Act was passed in 1931, Armond Thieblot (1975) put forward a new point of view, i.e. at least in part, the Davis-Bacon Act was motivated by racial bigotry. Thieblot's point of view resulted in controversy, formed a bipartisan view, and is still in dispute. This article uses clustering statistical method to cluster the data on the occupational status of the Whites and the Blacks of construction industry of Virginia in 1909, 1910, 1911, 1920, and 1928, divides the occupational status of the Whites and the Blacks of construction industry into five groups, then, the characteristics of these five occupational groups have been analyzed, further, the relationship between the Whites & the Blacks' employment rate and average wage level in these five occupational groups have been studied. The study shows that the change in wage levels is not a means to control the employment rate of the Black, and it is inferred that the intent for the enacting of the Davis-Bacon Act is not out of racial bigotry, but of job protection under the premise of maintaining existing local standards.

Keywords: Davis-Bacon Act Intent Cluster Statistical Method Racial Bigotry Local Standard

1 Introduction

The enacting of any Act has its intents. The Davis-Bacon Act was passed in 1931. The Act requires that federal construction contractors pay their workers "prevailing wages." What is the intent of adoption of the Davis-Bacon Act? There are two opposing views on this issue: one is that the intent of the Davis-Bacon Act is to discriminate against Black men, i.e., racism. The representatives of this view are Armond Thieblot,² the CATO Institute, and the Institute for Justice. The other view is that the Davis-Bacon Act's exclusionary intent is job protection under the premise of maintaining the existing local standards. The representatives of this view are Peter Philips³ and Dale Belman.⁴

The debate on this issue is ongoing. Bernstein (2018) still insists on the "significance of race" characteristic embedded in the Davis-Bacon Act. Based on the reviews of relative literature, this paper continues to argue and support the view of job protection via empirical cluster statistical analysis method and econometric models.

2 Literature Review

The debate over prevailing wage laws in construction was limited to its effect on project costs and taxpayer expenses before the mid-1970 (Belman & Philips, 1998). In 1975, Armond Thieblot inserted a new perspective into the debate: he thought that the Davis-Bacon Act was, at least in part, motivated by racial bigotry. Thieblot used two proofs to argue his racial bigotry point: the issue of race was mentioned explicitly during the House debate on Davis-Bacon by a southern congressman, and thinly veiled allusions to race could be found in other speeches, including those of Congressman Bacon.

In the CATO Institute's briefing paper No. 17, 1993, Bernstein (1993, p.1) published the following important point⁵: The Davis-Bacon Act "was with the intent of favoring white workers who belonged to white-

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² Thieblot, Armond J., Jr. (1975). The Davis Bacon Act, Industrial Research Unit, Report No. 10, Wharton School, University of Pennsylvania, Philadelphia.

³ content.csbs.utah.edu/.../Prevailing%20Wages/.../Thoughtless%20Think%20Tanks—race3.michigan.doc

⁴ http://www.faircontracting.org/PDFs/prevailing_wages/Prevailing%20Wage%20Laws_%20Unions%20and%20Minority%20Employment%20in%20Construction.pdf

⁵ <https://www.cato.org/publications/briefing-paper/davisbacon-act-lets-bring-jim-crow-end>

only unions over non-unionized black workers.” In 1993, the Institute for Justice, in their constitutional challenge to the Davis-Bacon Act, contended that “The law, the Davis-Bacon Act, was passed with the specific intent of preventing non-unionized black and immigrant laborers from competing with unionized white workers for scarce jobs during the Depression. And the devastating discriminatory effects persist.”⁶

Belman and Philips (1998) use an historical analysis method to evaluate prevailing wage laws in construction, including the Davis-Bacon Act and the state and federal acts that preceded it, as well as an empirical analysis method to estimate the effect of state prevailing wages on minority employment. Based on the historical analysis, they find

Limited evidence of exclusionary intent toward racial minorities. Such evidence is overwhelmed both by the emphasis on the exclusion of white transient and low wage labor from Northern Europe and the Great Plains and by the prominence of abolitionists and other individuals with explicit records opposing racial legislation among the supporters of prevailing wage legislation. (Belman & Philips, 1998, p.2).

Based on their empirical analysis, they find “a simple negative correlation between state prevailing wage legislation and minority employment. This disappears once we control for the racial composition of state’s labor force” (Belman & Philips, 1998, p.2).

Because think tanks are the successors and representatives of the view of racial bigotry contained in the Davis–Bacon Act, Philips (2001) denies think tanks’ views by criticizing their research methods.

It has shown that slipshod scholarship at think tanks has replaced careful research as the resource relied upon by opinion makers.....

The real story here is on of the debasement of political discourse through the spread of factoids by thoughtless think tanks (Philips, 2001, p.24).

The health field met the same problem as the construction industry field. There have been mortality differentials between Whites and Blacks in the US (Navarro ,1990). For most causes of death, the death rate in Blacks is higher than that in Whites, and for many causes of death, mortality differentials are increasing rather than decreasing⁷, so that the federal government has chosen the reduction of these differentials as its objective. However, Navarro (1990) thinks that these differentials cannot be explained merely by looking at race, as some Blacks have better health indicators than some Whites, and not all Whites have similar mortality indicators. Further, Navarro thinks the growing disparity of wealth and income by class mainly explains the race differentials in morbidity and mortality.

3 Via Clustering Statistical Method to Cluster the Data on the Occupational Status of the Whites and the Blacks of Construction Industry of Virginia in 1908, 1909, 1910, 1911, 1920, and 1928

3.1 Basis of Cluster Analysis Method Being Used

Carpenters are workers with certain skills, but in construction occupations, carpentry is not the most skilled work. Many types of work require higher skill too, for example: bricklaying, painting, paperhanging, plastering, plumbing, stone cutting, stone masonry, and tinner.

These high-skilled jobs generally have higher wages than carpenters, but those jobs exclude Blacks, except for bricklaying and plastering. Black occupations are generally low-level, dangerous, and laborious, such as general laborer, bricklayer helper, latherer. Blacks are hired as bricklayers and plasterers, because these jobs are dangerous and laborious work. Bricklayers lay bricks, pre-cut stone, concrete blocks, and other types of building blocks in mortar to construct and repair walls, foundations, partitions, arches, and other structures. A plasterer is someone who applies coats of plaster or stucco to walls, ceilings, or partitions for functional and decorative purposes. When these jobs need certain skills, the workers will be paid higher wages. Different occupations have different skill requirements, different injury risks, different salary levels, different requirements for open-air work, and different levels of physical exertion, which provide basis support for the application of cluster analysis methods here.

⁶<https://ij.org/case/brazier-construction-co-inc-v-reich/>

⁷ US health gap is widening between whites and blacks. New York Times, March 23, 1990: A17.

3.2 The Intuitive Classification for Ethnic Employment Distribution Status and Wage Difference Between the White and the Black in 1907-1908

We calculate the data characteristics of basic employment in the construction industry in Virginia in 1907-1908. The calculation results are shown in Table 1. We also calculate the wage difference for some occupations between the White and the Black in 1907-1908, the calculation results are shown in Table 2. The ratios of wages for white monopolized occupations to carpenter wage in 1907-1908 is shown in Table 3. The results in the Table 3 show that the occupations monopolized by the White have high wage levels, either significantly higher than or similar to the hourly wage of a carpenter. The results in the Table 2 show that the hourly wage levels of the White and the Black are not much different. In some occupations, their hourly wage levels are basically close, but their employment rates in some occupations are very different. The difference in employment rates between the White and the Black in certain occupations can also be seen from the results in Table 1.

Table 1 1907-1908 Employment Data Characteristics

Variable	Obs	Mean	Std. Dev	Min	Max
Pct_black (%)	649	17.134	18.406	0	100
Employment	649	17.601	28.457	1	352
Bricklayer_c	649	0.071	0.473	0	6
Bricklayer_w	649	1.006	3.102	0	50
Carpenter_w	649	6.311	11.888	0	130
Carpenter_c	649	0.239	2.556	0	62
Laborer_w	649	1.598	5.437	0	110
Laborer_c	649	3.644	8.896	0	100
Lather_w	649	0.332	1.296	0	18
Lather_c	649	0.071	0.528	0	8
Plasterer_w	649	0.470	1.339	0	15
Plasterer_c	649	0.048	0.502	0	10
Pct_black	649	17.134	18.406	0	100
Pct_laborer_c	649	15.316	17.113	0	88.24
Black_employment	649	4.072	9.556	0	100
Bricklayer_w_total	154	19.824	26.746	2	250
Bricklayer_w	649	1.006	3.103	0	50
Bricklayer_c_total	23	6.728	5.686	1.5	21
Bricklayer_c	649	0.071	0.473	0	6
Carpenter_w_total	426	25.737	41.001	1.75	422.5
Carpenter_w	649	6.311	11.888	0	130
Carpenter_c_total	39	5.187	10.004	1	62
Carpenter_c	649	0.239	2.556	0	62
Laborer_w_total	210	7.149	14.428	0.75	191.4
Laborer_w	649	1.598	5.437	0	110
Laborer_c_total	377	8.892	15.977	0.87	139.5
Laborer_c	649	3.644	8.896	0	100
Lather_w_total	74	7.674	8.503	1	54
Lather_w	649	0.333	1.296	0	18
Lather_c_total	21	3.888	3.689	1.5	18.4
Lather_c	649	0.071	0.528	0	8
Plasterer_w_total	111	10.123	10.308	1.5	75
Plasterer_w	649	0.470	1.339	0	15
Plasterer_c_total	11	9.441	10.519	0	35
Plasterer_c	649	0.048	0.502	0	10
Painter_total	104	6.834	7.311	1.25	48
Painter	649	0.418	1.299	0	16
Paper_total	18	3.847	2.369	1	12
Paper	649	0.042	0.277	0	4

Table 1 continued

Plumber_total	264	10.352	10.620	0	90
Plumber	649	1.137	2.139	0	20
Tinners_total	183	7.169	6.673	1.75	60
Tinners	649	0.703	1.727	0	24
Cutters_total	24	9.948	8.727	0	40
Cutters	649	0.103	0.655	0	10
Masons_total	31	6.210	5.252	0	24.5
Masons	649	0.096	0.530	0	7
Apprentice_total	162	2.556	2.110	0	15.54
Apprentice	649	0.658	1.493	0	14

Table 2 Wage Difference Between the White and the Black in 1907-1908

Occupation	Average wage of the white	Average wage of the black	B_w: the ratio of the average wage of the black to the white in the same occupation	Pct_black
Bricklayer	4.675	3.364	0.720	6.58%
Plasterer	3.684	3.350	0.909	9.23%
Carpenter	2.677	1.305	0.488	3.65%
Laborer	1.448	1.417	0.979	69.52%
Lather	2.629	1.775	0.675	17.58%

Table 3 White Monopoly Occupation and the Ratio of the Wages of These Occupation to the Carpenter's Wage in 1907-1908

Occupation	The ratio of the wages of these occupations to the carpenter's wage.
Painter	$2.623/2.677=0.980$
Paperhanger	$2.565/2.677=0.958$
Plumber	$3.703/2.677=1.383$
stone mason	$3.105/2.677=1.160$
stone cutter	$3.563/2.677=1.331$
Tinner	$2.877/2.677=1.075$

3.3 The Classification of Cluster Analysis Methods for Ethnic Employment Distribution Status and Wage Difference Between Whites and Blacks in 1909 Data

Using the cluster analysis statistical method, we first cluster the Virginia construction industry data of 1909 into five construction work categories:

1. The first category contains three occupations: helper, painter, paperhanger.

These three occupations are monopolized by White people, which require specific skills, and are less open air, less cumbersome, less hot, and less cold. In 1909, a White worker's average wage for these three types of occupations was \$2.353 per hour, using the simple arithmetic average method.

2. The second category contains two occupations: bricklayer, plasterer.

These two occupations are shared by both Whites and Blacks, which require higher skills, and are open-air, hot or cold, very dirty, and cumbersome. In 1909, a white worker's average wage for these two types of occupations was \$4.145 per hour, and a black worker's average wage for these two types of occupations was \$3.025 per hour, using the simple arithmetic average method.

3. The third category contains two occupations: carpenter, lather.

These two occupations are shared by both White and Black people, which require specific skills, and are open-air, hot or cold, and a little cumbersome. In 1909, a White worker's average wage for these two types of occupations was \$2.42 per hour, and a Black worker's average wage for these two types of occupations was \$2.205 per hour, using the simple arithmetic average method.

4. The fourth category contains two occupations: general laborer and plumbing laborer.

These two occupations are shared by white people and black people, which require a little skill, open-air, hot or cold, and heavy. In 1909 the white worker's average wage for these two types of occupations was 1.41\$ per hour, and the black worker's average wage for these two types of occupations was 1.405\$ per hour, using the simple arithmetic average method to calculate.

5. The fifth category contains four occupations: plumber, stone cutter, stone mason, and tinner.

These four occupations are monopolized by white people, which require high skills, but less open-air, little cumbersome, less hot, less cold. In 1909 the average wage for these four types of occupations was 3.57\$ per hour, using the simple arithmetic average method to calculate.

3.4 The Classification of Cluster Analysis Methods for Ethnic Employment Distribution Status and Wage Difference between the White and the Black in 1910 Data

Clustering the Virginia construction industry data of 1910 by cluster analysis statistical method, the construction industry data is clustered into five categories, and the results are as follows:

1. The first category contains three occupations: painter, paper hanger, and metal sheet worker.

These three occupations are monopolized by white people, which require specific skills, less open-air, less cumbersome, less hot, less cold. In 1910 the white worker's average wage for these three types of occupations was 2.65\$ per hour, using the simple arithmetic average method to calculate.

2. The second category contains two occupations: bricklayer, plasterer.

In 1910 the white worker's average wage for these two types of occupations was 4.105\$ per hour, and the black worker's average wage for these two types of occupations was 3.365\$ per hour, using the simple arithmetic average method to calculate.

3. The third category contains two occupations: carpenter, lather.

In 1910 the white worker's average wage for these two types of occupations was 2.46\$ per hour, and the black worker's average wage for these two types of occupations was 1.86\$ per hour, using the simple arithmetic average method to calculate.

4. The fourth category contains two occupations: general laborer and general helper.

In 1910 the white worker's average wage for these two types of occupations was 1.585\$ per hour, and the black worker's average wage for these two types of occupations was 1.63\$ per hour, using the simple arithmetic average method to calculate.

5. The fifth category contains three occupations: plumber, stone cutter, stone mason.

These three occupations are monopolized by white people, which require high skills, but less open-air, little cumbersome, less hot, less cold. In 1910 the average wage for these three types of occupations was 3.563\$ per hour, using the simple arithmetic average method to calculate.

3.5 The Classification of Cluster Analysis Methods for Ethnic Employment Distribution Status and Wage Difference Between the White and the Black in 1911 Data

Clustering the Virginia construction industry data of 1911 by cluster analysis statistical method, the construction industry data is clustered into five categories, and the results are as follows:

1. The first category contains three occupations: painters, paper hanger, and metal sheet worker.

These three occupations are monopolized by white people, which require specific skills, less open-air, less cumbersome, less hot, less cold. In 1911 the white worker's average wage for these three types of occupations was 2.65\$ per hour, using the simple arithmetic average method to calculate.

2. The second category contains two occupations: bricklayer, plasterer.

In 1911 the white worker's average wage for these two types of occupations was 4.38\$ per hour, and the black worker's average wage for these two types of occupations was 3.307\$ per hour, using the simple arithmetic average method to calculate.

3. The third category contains four occupations: carpenter, lather, general helper, and bricklayer helper.

In 1911 the white worker's average wage for these four types of occupations was 2.153\$ per hour, and the black worker's average wage for these four types of occupations was 1.883\$ per hour, using the simple arithmetic average method to calculate.

4. The fourth category contains four occupations: general laborer and bricklayer laborer, plumbing apprentice, plumbing laborer.

In 1911 the white worker's average wage for these four types of occupations was 1.305\$ per hour, and the black worker's average wage for these three types of occupations was 1.583\$ per hour, using the simple arithmetic average method to calculate.

5. The fifth category contains four occupations: two types of plumber& fitter, stone cutter, stone mason.

These four occupations are monopolized by white people, which require high skills, but less open-air, little cumbersome, less hot, less cold. In 1911 the average wage for these four types of occupations was 4.67\$ per hour.

3.6 The Classification of Cluster Analysis Methods for Ethnic Employment Distribution Status and Wage Difference Between the White and the Black in 1920 Data

Clustering the Virginia construction industry data of 1911 by cluster analysis statistical method, the construction industry data is clustered into five categories, and the results are as follows:

1. The first category contains six occupations: helper in paint paper type, iron worker in plumbing type, carpenter in plumbing type, paperhanger in paint paper type, engineer in plumbing type, electrician in plumbing type.

In 1920 the white worker's average wage for these six types of occupations was 5.632\$ per hour, using the simple arithmetic average method to calculate.

2. The second category contains seven occupations: bricklayer in general type, plasterer in general type, steam fitter in plumbing type, engineer in general type, lather in general type, cement worker in general type, sheet metal worker in general type.

In 1920 the white worker's average wage for these seven types of occupations was 7.064\$ per hour, and the black worker's average wage for these seven types of occupations was 7.121\$ per hour, using the simple arithmetic average method to calculate.

3. The third category contain twelve occupations: Slater& tile setter in plumbing type, helper in general type, helper in plumbing type, hod carrier in general type, sheet metal worker in plumbing type, painter in paint paper type, carpenter in general type, plumber& fitter in plumbing type, painter in general type, plaster in paint paper type, painter in plumbing type, miscellaneous type.

In 1920 the white worker's average wage for these five types of occupations was 4.75\$ per hour, and the black worker's average wage for these five types of occupations was 3.404\$ per hour, using the simple arithmetic average method to calculate.

4. The fourth category contains seven occupations: apprentice in plumbing type, apprentice in paint paper type, apprentice in general type, laborer in general type, laborer in plumbing type, and laborer in paint paper type, cement worker in plumbing type.

In 1920 the white worker's average wage for these four types of occupations was 3.25\$ per hour, and the black worker's average wage for these six types of occupations was 3.227\$ hour, using the simple arithmetic average method to calculate.

5. The fifth category contains seven occupations: plumber& fitter in general type, stone mason in general type, ironworker in general type, steam fitter in general type, plasterer in plumbing type, electrician in general type, slater & tile setter in general type.

These seven occupations are monopolized by white people, which require high skills, but less open-air, a little cumbersome, less hot, less cold. In 1920 the average wage for these thirteen types of occupations was 7.429\$ per hour, using the simple arithmetic average method to calculate.

3.7 The Classification of Cluster Analysis Methods for Ethnic Employment Distribution Status and Wage Difference Between the White and the Black in 1928 Data

Clustering the Virginia construction industry data of 1928 by cluster analysis statistical method, the construction industry data is clustered into five categories, and the results are as follows:

1. The first category contains eight occupations: ironworker in general type, electrician in general type, electrician in plumbing type, paperhanger in paint paper type, steam fitter in plumbing type, miscellaneous in general type, miscellaneous in paint paper type, slater & tile setter in plumbing type.

These eight occupations are monopolized by white people, which require specific skills, less open-air, less cumbersome, less hot, less cold. In 1928 the white worker's average wage for these eight occupations was 6.418\$ per hour, using the simple arithmetic average method to calculate.

2. The second category contains six occupations: sheet metal worker in general type, bricklayer in general type, plasterer in general type, plumber & fitter in general type, engineer in general type, plasterer in paint paper type.

In 1928 the white worker's average wage for these six occupations was 8.6\$ per hour, and the black worker's average wage for these six occupations was 6.133\$ per hour, using the simple arithmetic average method to calculate.

3. The third category contains eight occupations: sheet metal worker in plumbing type, painter in paint paper type, carpenter in general type, plumber & fitter in plumbing type, painter in general type, cement worker in general type, lather in general type, hod carrier in general type.

In 1928 the white worker's average wage for these eight occupations was 5.741\$ per hour, and the black worker's average wage for these eight occupations was 4.046\$ per hour, using the simple arithmetic average method to calculate.

4. The fourth category contains eleven occupations: apprentice in plumbing type, apprentice in paint paper type, apprentice in general type, laborer in general type, laborer in plumbing type, and laborer in paint paper type, helper in plumbing type, scraper in paint paper type, helper in general type, helper in paint paper type, painter in plumbing type.

In 1928 the white worker's average wage for these eleven occupations was 3.27\$ per hour, and the black worker's average wage for these eleven occupations was 3.017\$ per hour, using the simple arithmetic average method to calculate.

5. The fifth category contains three occupations: slater & tile setter in general type, steam fitter in general type, stone mason in general type.

These three occupations are monopolized by white people, which require high skills, but less open-air, a little heavy, less hot, less cold. In 1928 the average wage for these three occupations was 8.953\$ per hour, using the simple arithmetic average method to calculate.

4 The Characteristics of the Classification of Five Types of Employment Structure in 1911, 1920, and 1928

We classify the construction industry employment structure of Virginia in 1911, 1920, and 1928 into five types, each with special characteristics⁸. We analyze the characteristics of each type in order of Black employment rate from low to high. Data and indicators describing the first type of characteristics are placed in Table 4, data and indicators describing the second type of characteristics are placed in Table 5, data and indicators describing the third type of characteristics are placed in Table 6, data and indicators describing the fourth type of characteristics are placed in Table 7, data and indicators describing the fifth type of characteristics are placed in Table 8.

The first and second types of occupations are completely monopolized by Whites; Blacks do not have the opportunity to engage in these occupations. Blacks do not have the opportunity to engage in these occupations due to their skin color, rather than due to the wage level. Therefore, in these two types of occupational groups, no matter how the wage level is changed, raised or lowered, Blacks will not have the opportunity to get involved.

⁸Although we also classify the construction industry employment structure in 1909 and 1910 into five types, the data of 1909 and 1910 lacked the average employment rate data, so the characteristics of five types of employment structure of 1909 and 1910 are not suitable to be placed here.

Table 4
First Type

Year	Average wage of the white workers	Average wage of the black workers	Occupation types	First type's characteristics
1911	4.67\$		two types of plumber& fitter, stone cutter, stone mason	monopolized by white people, requiring high skills, but less open-air, little heavy, less hot, less cold, a little danger
1920	7.429\$		plumber& fitter in general type, stone mason in general type, ironworker in general type, steam fitter in general type, plasterer in plumbing type, electrician in general type, slater & tile setter in general type	
1928	8.953\$		slater & tile setter in general type, steam fitter in general type, stone mason in general type	

Table 5
Second Type

Year	Average wage of the white workers	Average wage of the black workers	Occupation types	Second type's characteristics
1911	2.65\$		painters, paper hanger, and metal sheet worker	monopolized by white people, requiring certain skills, less open-air, less heavy, less hot, less cold, little danger
1920	5.632\$		helper in paint paper type, iron worker in plumbing type, carpenter in plumbing type, paperhanger in paint paper type, engineer in plumbing type, electrician in plumbing type	
1928	6.418\$		ironworker in general type, electrician in general type, electrician in plumbing type, paperhanger in paint paper type, steam fitter in plumbing type, miscellaneous in general type, miscellaneous in paint paper type, slater & tile setter in plumbing type	

Table 6
Third Type

Year	Average wage of the white workers	Average wage of the black workers	Occupation types	Third type characteristics
1911	4.38\$	3.307\$	bricklayer, plasterer	shared by white people and black people, requiring certain skills, but open-air, hot or cold, very dirty, and heavy, a little danger
1920	7.064\$	7.121\$	bricklayer in general type, plasterer in general type, steam fitter in plumbing type, engineer in general type, lather in general type, cement worker in general type, sheet metal worker in general type	
1928	8.6\$	6.133\$	sheet metal worker in general type, bricklayer in general type, plasterer in general type, plumber & fitter in general type, engineer in general type, plasterer in paint paper type	

Table 7
Fourth Type

Year	Average wage of the white workers	Average wage of the black workers	Occupation types	Fourth type characteristics
1911	2.153\$	1.883¥	carpenter, lather, general helper, and bricklayer helper	shared by white people and black people, require some skills, but open-air, hot or cold, and a little heavy, a little danger
1920	4.75\$	3.404\$	Slater& tile setter in plumbing type, helper in general type, helper in plumbing type, hod carrier in general type, sheet metal worker in plumbing type, painter in paint paper type, carpenter in general type, plumber& fitter in plumbing type, painter in general type, plaster in paint paper type, painter in plumbing type, miscellaneous type	
1928	5.741\$	4.046\$	sheet metal worker in plumbing type, painter in paint paper type, carpenter in general type, plumber& fitter in plumbing type, painter in general type, cement worker in general type, lather in general type, hod carrier in general type	

Table 8
Fifth Type

Year	Average wage of the white workers	Average wage of the black workers	Occupation types	Fifth type characteristics
1911	1.305\$	1.583\$	general laborer and bricklayer laborer, plumbing apprentice, plumbing laborer	shared by white people and black people, requiring low skills, open-air, hot or cold, and heavy, more danger
1920	3.25\$	3.227\$	apprentice in plumbing type, apprentice in paint paper type, apprentice in general type, laborer in general type, laborer in plumbing type, and laborer in paint paper type, cement worker in plumbing type	
1928	3.27\$	3.017\$	apprentice in plumbing type, apprentice in paint paper type, apprentice in general type, laborer in general type, laborer in plumbing type, and laborer in paint paper type, helper in plumbing type, scraper in paint paper type, helper in general type, helper in paint paper type, painter in plumbing type	

5 The Statistical Relationship between the Average Salary Level and the Employment Volume and Employment Rates

We regress the variable average salary level and variable employment volume of Whites in the first, the second, and the third occupational categories, the regression results are placed in Table 9, the results show that the impact of the average wage level on the employment volume is significant at the 95% level, and its relationships is negatively correlated, which is consistent with economic theory.

Table 9
The Results of Models Explaining White Employment in Different Occupational Category

	(1) group1 &2	(2) group3
emp_wemp_w		
avg_w	-16.69** (-2.07)	-10.85 (-0.46)
_cons	161.58*** (3.19)	218.11 (1.25)
N	31	16
R-sq	0.129	0.015

t statistics in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$, group1 represents a group consisted of the first type occupational categories, group2 represents a group consisted of the second type occupational categories, group3 represents a group consisted of the third type occupational categories.

Table 10
The Results of Models Explaining Black Group Employment

	(1) group3	(2) group 4	(3) group 5
pct_blackpct_black			
avg_w	20.79 (1.87)	43.34** (2.41)	-3.54 (-0.23)
avg_b	-23.11 (-1.70)	-53.35** (-2.52)	-1.86 (-0.11)
bw 1.34	3.56*** (1.35)	0.569 (3.18)	(1.43)
_cons	-103.09 (-1.24)	-264.34** (-2.59)	2.65 (0.07)
N	16	24	19
R-sq	0.380	0.466	0.384

t statistics in parentheses

* $p < .1$, ** $p < .05$, *** $p < .01$, group 4 represents a group consisted of the fourth type occupational categories, group5 represents a group consisted of the fifth type occupational categories.

We construct the econometric models explaining the Black group employment, the regression results are placed in Table 10. The results in Table 10 show that in the third occupational type, the influence of variable avg_w on the dependent variable pct_black is statically significant at the 90% level, but not statically significant at the 95% level, and its influence is positive, which is consistent with economic theory. Variable: avg_b and variable: bw(avg_b/avg_w) on the dependent variable pct_black are not statistically significant, which means that adjusting Black wage levels does not affect the employment rate of Blacks in the third type of occupation, and increasing the wages of Whites will increase the employment rate of Blacks in the third type of occupational collection. In the fourth occupational type, the influence of variable: avg_w, variable: avg_b, and variable: bw (avg_b/avg_w) on the dependent variable pct_black is statistically significant at the 95% level, which means that adjusting wage levels will affect the employment rate of Blacks in the fourth type of occupation.

Assuming the same level of increase in the wages of all people at the same time, raising the wage level of White people will lead to an increase in the employment rate of Blacks in the fourth type of occupational group. Increasing the wages of Blacks will lead to a decline in the employment rate of Blacks in the fourth type of occupational group. What will be the final result?

The average wage of White workers in the fourth type occupational group was 2.153\$ per hour in 1911. The average wage of Black workers in the fourth type occupational group was 1.883\$ per hour in 1911, and the ratio is 1.143.

The average wage of White workers in the fourth type occupational group is 4.75\$ in 1920, and the average wage of Black workers in the fourth type occupational group is 3.404\$ in 1920, with a ratio of 1.395. In 1928, the average wage of White workers in the fourth type occupational group is 5.741\$, and the average wage of Black workers in the fourth type occupational group is 4.046\$, and the ratio is 1.419. The average value of three years' ratio is 1.319, which means that if the wages of Blacks increase by 0.1\$, the wages of Whites need to increase by 0.1319\$, assuming the same level of increase in wages for all. An 0.1 \$ in Black workers' wage will lead to a decrease of 5.335% (i.e., 53.35×0.1) in pct_black, while White workers' wage will increase by 0.1319\$, which will lead to an increase of 5.722% (i.e., 43.38×0.1319) in pct_black. The end result is a 0.387% increase in pct_black. Therefore, in the fourth type of occupational group, raising wages will increase the employment rate of Blacks, i.e, pct_black.

In the fifth occupational group, the influence of variable: avg_w, variable: avg_b and variable: bw(avg_b/avg_w) on the dependent variable pct_black is not statistically significant, which means that adjusting wage levels does not affect the employment rate of Blacks in the fifth type of occupational group.

6 Summary Analysis

In the construction industry in the United States in the early 20th century was characterized by discrimination against Black people. Of the five types of occupational group, Whites dominate in two. The two professional groups in which White workers have monopoly are characterized by requiring high or certain skills, as well as a good working environment and high or good wage levels. The data in Table 11 can show

Table 11

The White Workers' Average Wage Ratios of These Five Occupational Groups

Year	Average wage ratio
1911	3.58 : 2.03 : 3.36 : 1.65: 1
1920	2.29 : 1.73 : 2.17 : 1.46: 1
1928	2.74 : 1.96 : 2.63 : 1.76: 1

Table 12

The Average Wage Ratio Between Whites and Blacks

Year	In occupational group of the third type	In occupational group of the fourth type	In occupational group of the fifth type
1911	1.324	1.143	0.824
1920	0.992	1.395	1.007
1928	1.402	1.419	1.084

Table 13

The Proportion of Black Employment

Year	In occupational group of the third type	In occupational group of the fourth type	In occupational group of the fifth type
1911	10.33%	13.99%	52.41%
1920	15.37%	11.40%	64.37%
1928	19.5%	11.02%%	58.20%

Clearly the significant differences in wage levels between these five occupational groups. The data in Table 12 can show clearly the insignificant differences in wage levels between the White and the Black. But the data in Table 13 can show clearly the significant differences in employment proportion of the Whites and the Blacks, therefore, it can be inferred that White workers can monopolize these two professional groups, relying not on economic means, such as adjusting wage levels, but on institutional and political means. The source of discrimination against Black Americans lies in Black slavery. Under the Black slave system that was in effect before 1865, the status of Blacks was at its lowest point in their history.

As can be seen from Table 13, the employment ratio of Blacks is only a little more than 10% in the third and fourth occupational groups, and the proportion in the fifth occupational group is more than 50%, which indicates that the scope of Blacks' employment is mainly limited to the fifth occupational groups. In the fifth occupational groups, the average wages of Whites and Blacks are almost equal, and in 1911, the average wage of Blacks is obviously higher than that of whites. In the third and fourth occupational groups, the average wage of White workers is higher than that of Black workers, except for one case: in the third occupational group in 1920, the average wage of Black workers is higher than that of White workers.

The above facts show that employment discrimination against Black people is mainly achieved through the limits of the scope of employment and the rate of employment, rather than through the level of wages, which is consistent with the “separate but equal” spirit of the Jim Crow laws.

The Thirteenth, Fourteenth, and the Fifteenth Amendments to the United States Constitution, passed in 1865, extended protection to the newly emancipated slaves. In the 1870s, Jim Crow laws were introduced in the Southeastern United States. These laws enforced racial segregation across the South from the 1870s through the 1960s. Under the Jim Crow system, “Whites only” and “colored” signs spread across the South at water fountains, restrooms, bus waiting areas, movie theaters, swimming pools, and public schools. In 1896, the Supreme Court declared Jim Crow segregation legal in the *Plessy v. Ferguson* decision. The Court ruled that “separate but equal” accommodations for African Americans were permitted under the Constitution. African Americans who dared to challenge segregation faced arrest or violent reprisal.

These laws increased discrimination and segregation in the United States. Often times, the products and sections designated for the “colored” were inferior. The results of the econometric model indicate that changes in wage levels, and the change in the wage ratio between Blacks and Whites, did not affect the employment ratio of Blacks in the first, second, third, and fifth occupational groups. Raising the wages of Whites would slightly increase the employment ratio of Blacks in the fourth occupational group, which means Black workers were only on the fringe of the American economy at that time. In the situation of a strong apartheid, institutional means, cultural means, and political means can effectively regulate the employment restrictions and employment rate of color people. There is no need to resort to the tool of regulating wage levels, which is euphemistic, inefficient tool.

7 Conclusions

In summary, the purpose of the Davis-Bacon Act is to maintain regional wage standards, rather than to reduce the employment rate of Blacks in the construction industry. Prevailing wage statutes discriminated against African-American workers because the higher wages for public projects inclined contractors to pass over lesser skilled workers, such as African-Americans, which is not racial discrimination, but class discrimination. Employment discrimination against Black people is mainly achieved through the limits of the scope of employment and the rate of employment, rather than through the level of wages, which is consistent with the “separate but equal” spirit of the Jim Crow laws.

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