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THE IMPACT OF UNIONS ON THE LABOR MARKET FOR WHITE AND MINORITY YOUTH

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ABSTRACT

This paper presents estimates of the effects of unions on the wages of young black and white males who are both union and nonunion workers. It also presents estimates of union effects on employment for these groups, as well as their union membership rates. While unions have a very substantial, positive effect on the wages of young union workers, particularly for young blacks, they have a negative effect on the wages of young blacks who are not unionized. The effects of unions on employment are negative for both groups and especially for blacks.

As for the relative access to unionized employment, young blacks within the labor force have membership rates that are roughly comparable to those of young whites. However, rates for young blacks appear to be somewhat lower after accounting for differences in rates of labor force participation between young blacks and whites. Young blacks also continue to be underrepresented in the crafts and construction industries, which are heavily unionized, while being overrepresented in the relatively nonunionized, low-wage service sector. These results suggest that increasing the access of young blacks to unionized employment would improve their positions in the labor market.

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To analyze the impact of unions on the youth labor market in general, and on the minority youth market in particular, three distinct groups must be considered: employed workers who are union members, employed workers who are nonunion, and the unemployed.[1/] The impact of unions will then depend on their effects on the wages of both union and nonunion workers, their effects on overall employment, and the number of young blacks and whites who obtain union membership.[2/] When all of these factors are considered together, unions might either mitigate or exacerbate differentials between young blacks and whites in wages and employment that would exist in their absence because of discrimination and/or differences in abilities and skills.

The purpose of this paper is to estimate the wage and employment effects of unions for young black and white males, comparing them to each other and to older cohorts in the black and white populations.[3/] To do this, I present a theoretical framework that considers the effects of unionism on the supply of and demand for labor, and consequently on wages and employment. I then estimate wage equations that contain independent variables for union membership of individuals, as well as separate equations for union and nonunion workers which consider the proportions of individual's SMSA (Standard Metropolitan Statistical Area) that are unionized.[4/] The proportion unionized variable, when used in a sample that includes only nonunion workers, provide estimates of the impact of unions on the nonunion sector. The SMSA variable is also included in the employment equations that are estimated.

All of these equations contain controls for the personal characteristics of these individuals, and some contain controls for other characteristics of SMSAs that are correlated with the proportion unionized. The equations are estimated separately for black and white males, ages 16 through 24, as well as for

older white and black males. Most of the wage equations are estimated only for blue-collar workers, and consider only the proportion unionized among production workers; the employment equations, on the other hand, are estimated for the entire population of each group and consider proportion unionized for all workers.

I also compare the abilities of young blacks and whites to obtain union membership by analyzing the percentage unionized of different age groups across regions, occupations, and educational groups. Finally, I use some of these estimates to compute the aggregate effects of unions on the wages and employment of the young white and black populations as a whole.

The main results of this analysis can be summarized as follows:

1. The union-nonunion wage differential is larger for young workers than for older ones, and it is somewhat larger for young blacks than for young whites.

2. The proportion of unionization in an SMSA raises wages for young black and white union members and also for white nonunion workers; but wages of young nonunion blacks fall in heavily unionized SMSAs.

3. Employment falls for white youth and especially for black youth as the proportion of unionization in an SMSA rises.

4. The rates of union membership in the labor force as a whole, and within most educational, occupational, and regional subgroups, are quite similar for young blacks and whites. However, the rates for blacks appear to be lower after accounting for differences in rate of labor force participation between young blacks and whites. Furthermore, young blacks continue to be underrepresented in the heavily unionized crafts and in the construction industry, while being overrepresented in the relatively nonunionized, low-wage service sector.

5. Changes in economy-wide rates of union organization would raise the overall wages and lower employment for both young blacks and whites.

In the first section of the paper, the theoretical implications of unions for wages and employment of young blacks and whites are discussed. The second section presents the results of the various wage and employment equations that are computed. The third section contains union membership figures for various groups in the young black and white populations. In the fourth section, results from the previous two sections are used to compute the net effects of unions on wages and employment for these populations. The fifth section contains a summary and some conclusions.

I. Theoretical Implications of Unions

In its simplest version, neoclassical theory predicts that unions raise wages and lower employment along an aggregate demand curve for labor. Youth employment would be especially reduced, since unions would eliminate the low-wage jobs that would otherwise be available to young people.

When the union and nonunion sectors are considered separately, the situation becomes more complex. Johnson and Mieszkowski were the first to use a general equilibrium model to determine the impact of unions on wages in the nonunion sector.[5/] In their model, the restricted demand for labor in the union sector produces an excess supply of labor in the nonunion sector which, in a general equilibrium model, depresses wages there.[6/] There are, however, other effects which may counteract the excess supply of labor. These include: (1) a higher demand for the products of nonunion firms and therefore a higher demand for labor there; (2) a possible net movement of capital to the nonunion sector; and (3) a "threat effect" whereby nonunion employers raise

wages to preclude the possibility of union organization within their own firms. The first effect occurs because unions raise the costs of production and therefore the prices of goods in the union sector above those in the nonunion sector, which shifts product demand from the former to the latter. The second effect occurs only if: a) the union sector is relatively more capital-intensive than the nonunion sector, and b) the elasticity of substitution in the production process of the union sector is low. If both of these conditions are met, the movement of capital to the union sector as a substitute for labor in the production process (i.e., the "substitution effect") may be dominated by the movement of both labor and capital to the nonunion sector because of the shifting demand to that sector (i.e., the "scale effect"). But even when these conditions are not met, the "threat effect" may still raise nonunion wages above what they would be in the absence of unions.

These effects can be better illustrated through the formula for the elasticity of labor demand in an industry that faces an infinitely elastic supply of capital:

$$(1) \qquad \eta_{\ell j} = \alpha\eta_{xj} + (1 - \alpha)\sigma_j$$

where $\eta_{\ell j}$ is the elasticity of the demand for labor with respect to the wage rate in industry j; α is the proportion of total production costs accruing to labor; η_{xj} is the price elasticity of demand for the products of industry j; and σ_j is the elasticity of substitution in production for that industry. For a given proportional wage increase $\frac{dw_j}{w_j}$ in the union sector, employment there declines by the proportion $\eta_{\ell j}\frac{dw_j}{w_j}$. The direct shift in demand to the nonunion sector will raise employment by $\alpha\eta_{xj}\frac{dw_j}{w_j} < \eta_{\ell j}\frac{dw_j}{w_j}$; thus, this effect above cannot fully offset the shift in labor supply.[7/] But for σ_j sufficiently low,

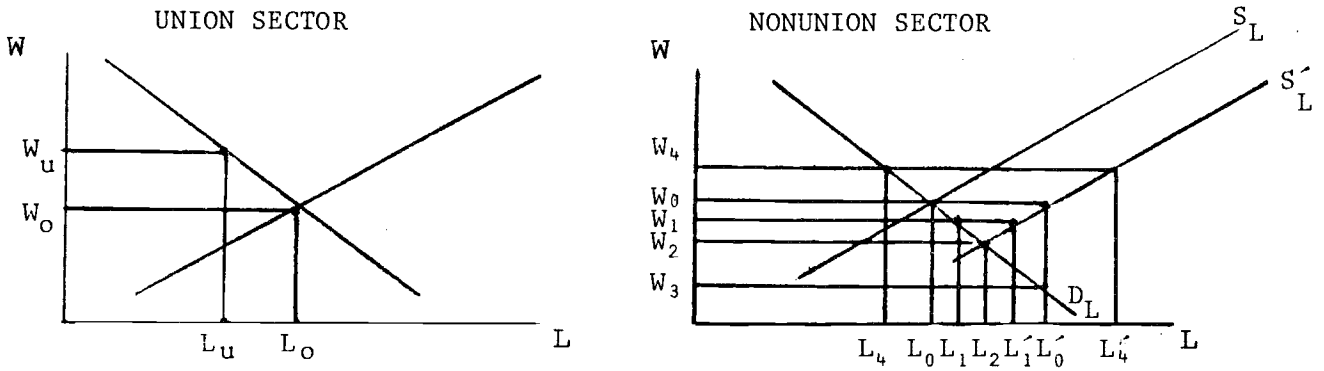
capital will be diverted to the nonunion firms of industry j, and the wages of workers in these firms will be higher in the presence of unionism in this industry than in its absence. A "threat effect" might further reinforce this result.

But this analysis is simplistic because it assumes that the union and nonunion sectors are both parts of the same industry. It is more likely that the excess supply of labor falls in industries other than j which happen to be located in the same geographical area as the unionized firms of industry j; and the demand effect will then be less useful in counteracting it. For the shift in demand now depends on the cross-price elasticity η_{xjk} rather than η_{xj}, i.e., demand will rise in the nonunion sector by $\alpha\eta_{xjk}\frac{dw_j}{w_j}$ rather than by $\alpha\eta_{xj}\frac{dw_j}{w_j}$. It is quite likely that $\eta_{xjk} < \eta_{xj}$; for many industries (e.g., the trade and service industries), the cross-price elasticity of their products with respect to those of heavily unionized industries are likely to be quite low. Therefore, the level of unionism in the geographical unit which constitutes the local labor market is highly relevant for the nonunion worker there, independently of the level of unionism in his industry. It is the former through which unions affect labor supply in the nonunion sector, and the latter through which they affect labor demand. Thus, when controlling for the level of unionism in the area, the impact of the level of unionism in an industry on the wages of a nonunion worker there should be positive, reflecting only demand and threat effects, while the impact of unionism in the area will depend on the relative strengths of the negative supply effect and positive threat effect.[8/] It should be noted that threat effects can exist for both the industry and the area; the use of industry and area wage surveys by large firms in determining their wages lends support to this view. It should also be noted that area unionism is much more likely to affect blue-collar than white collar workers since unionism is more prevalent

among the former and since the local labor market is generally more relevant for supply of the former than the latter.

By focusing on unionism within areas instead of industries, this analysis can be extended to a disequilibrium context; i.e., one in which wage rigidities prevent the excess supply of labor from being fully employed at a lower wage in the nonunion sector. This possibility is illustrated in Figure 1 below.

Figure 1



In the absence of unions, wages are W_o and employment is L_o in each sector. But unions raise wages in the union sector to W_u and restrict employment to L_u. With the rightward shift in the supply of nonunion labor, employment there would have to rise to L'_o to keep the overall level of employment at its preunion level; this would occur only if the supply of labor were perfectly inelastic and if wages fell to W_3. With an elastic supply of labor, wages would fall to W_2 and employment would rise to L_2 in this sector; there would be no observed unemployment, but a lower overall labor force participation rate and therefore a lower employment/population ratio would result.

The introduction of wage rigidities causes unemployment in the labor force as well as lower overall employment. If wages fall only to W_1, unemployment will be $L_1' - L_1$. In this case, nonunion wages will be lower and unemployment will be higher than in the absence of unions. It is also possible that wages will remain at W_0 in the nonunion sector, causing unemployment to rise to $L_0' - L_0$; or that wages will rise to W_4' because of the threat effect, causing unemployment to rise to $L_4' - L_4$.

Finally, it is likely that wage and employment effects will be stronger in some groups than for others. In particular, young workers, and especially young blacks should be among the most seriously affected by the excess supply of labor in the nonunion sector. With a shortage of jobs there, young people will be absorbed into the labor force more slowly than might otherwise be the case, and the large number of labor force entrants and reentrants would raise unemployment significantly. Young union members might also have higher unemployment, since seniority provisions favor older members and therefore raise the likelihood of layoff for younger members.

As for young blacks, their problems may be compounded by lower skills and/or discrimination. Affirmative Action programs may be less effective in the nonunion sector, where establishment size is generally smaller and compliance more difficult to enforce than in the union sector. Therefore, young blacks may be less likely to find employment in this sector than young whites, and only at lower wages when it is found.

II. Estimation of Wage and Employment Equations

The first issue to be addressed by empirical analysis is the degree to which unions do, in fact, raise the wages of young black and white unionists above those of nonunionists.[9/] Table 1 presents means and standard

deviations of wages in the union and nonunion sectors as well as the results of wage equations that were estimated using the data on individuals from the Current Population Survey (CPS) of May, 1978. The equations are of the usual semilog form:

$$(2) \quad \ell nW_i = aX_i + bUN_i + e_i$$

Where W_i is the individual's hourly wage, X_i is a vector of the ith individual's characteristics, UN_i is a dummy variable representing union membership, and e_i is the error. The coefficient b can be interpreted as $\ell n(W_u/W_{nu}) = \ell nW_u - \ell nW_{nu}$; i.e., as the proportional union/nonunion wage differential. Both the means and the equations are estimated separately for whites and blacks aged 16 through 24 and for those who are older; there are also separte equations for all workers and for blue-collar workers.

Part B of Table 1 shows that union wage differentials are larger for young workers than for older workers. They are also larger for blacks than for whites in both the younger and older cohorts, although the difference for the younger is just marginally significant.[10/] The larger differential for blacks does not, of course, imply that blacks earn wages within unions that are higher or even equivalent to those of whites; it may only mean that there is less racial inequality in the union sector than in the nonunion one. The latter notion is tested explicitly with the estimation of wage equations that include a dummy variable for being black rather than for union membership:

$$(3) \quad \ell nW_i = aX_i + cR_i + U_i$$

Equation (3) is estimated separately for the union and nonunion sectors as well as for the different age groups and occupational groups, but blacks and

whites are included together in the sample.

Part C of Table 1 shows that racial wage differentials among young blue-collar workers persist in both the union and nonunion sectors, and that the differential appears to be somewhat larger among nonunion workers. For older workers in both the union and nonunion sectors racial differentials also exist, with larger differentials once again evident among nonunion workers.

The effects of proportion unionized on wages are estimated separately for white and black union and nonunion workers, ages 16 through 24 and 25 through 64 in the blue-collar sector. The impact of proportion unionized on wages is first estimated without controlling for other labor supply and demand shift factors in the following equation:

$$(4) \quad \ell nW_{ik} = aX_{ik} + fP_k + e_{ik}$$

where W_{ik} is the wage of the ith individual in the kth SMSA. P_k is the proportion of production workers unionized in an individual's SMSA.[11/] The equations are estimated only for workers who reside in the largest 98 SMSAs since these are the only ones for which estimates of proportion unionized are available.

This limiting of the sample also creates a need for more observations, particularly among young blacks. Therefore, the equations are estimated from the merged CPS files of May 1973-75 and also of May 1976-78 for young workers. Results from both data sets are presented here because of differences between the two sets of estimates for young blacks.[12/] The results, as well as means and standard deviations on wages, are presented in Table 2.

The proportion unionized in an SMSA has a significant, positive effect on the wages of union members for all race and age groups. But for nonunion workers, the impact of proportion unionized in an SMSA is generally less positive than for union workers; and for young, nonunion blacks the impact on wages is strongly negative. This is true even for the coefficient in the 1976-78

TABLE 1

EFFECTS OF UNION MEMBERSHIP AND RACE ON WAGES
OF
BLACK AND WHITE MALES

	White Males		Black Males	
	16-24	25-64	16-24	25-64
A. Means and Standard Deviations of Wages				
Union, all workers	5.50	7.28	5.46	6.25
	(2.49)	(4.40)	(2.15)	(3.56)
Union, blue-collar	5.87	7.17	5.47	6.12
	(2.42)	(3.94)	(2.18)	(2.70)
Nonunion, all workers	4.07	6.88	3.66	5.15
	(2.05)	(4.57)	(2.19)	(3.45)
Nonunion, blue-collar	3.91	5.47	3.32	4.23
	(1.88)	(3.45)	(2.13)	(2.39)
B. Union Wage Effects				
All workers	.274	.122	.317	.159
	(.017)	(.008)	(.059)	(.023)
Blue-collar	.296	.197	.367	.213
	(.017)	(.009)	(.066)	(.026)
	Union		Nonunion	
	16-24	25-64	16-24	25-64
C. Racial Wage Effects				
All Workers	-.042	-.082	-.049	-.121
	(.045)	(.016)	(.025)	(.015)
Blue-collar	-.081	-.072	-.096	-.093
	(.047)	(.018)	(.028)	(.017)

Note: Computed from U.S. Bureau of the Census, Current Population Survey (Washington, D.C.: G.P.O., May 1978). Dependent variable in each regression of Parts B and C is log (average hourly earnings). Each regression includes age, age^2, education, education^2, and dummies for one-digit occupational industry, region, residence in an SMSA, and full-time employment. Students, self-employed, and agricultural workers are omitted from the sample. Sample sizes are 4,323 for young whites, 437 for young blacks, 17,797 for older whites, and 1,991 for older blacks.

TABLE 2

EFFECTS OF PROPORTION UNIONIZED ON WAGES
OF BLUE-COLLAR WORKERS, UNION AND NONUNION

	White Males, Ages 16-24		Black Males, Ages 16-24	
	Union	Nonunion	Union	Nonunion
A. CPS May 1976-78				
Mean and standard deviation of wages	5.46 (2.45)	3.53 (1.71)	4.60 (2.43)	2.91 (1.59)
% Unionized, SMSA	.437 (.169)	.188 (.110)	.724 (.476)	-.199 (.349)
R^2	.442	.347	.512	.499
N	969	2202	159	283
B. CPS May 1973-75				
Mean and standard deviation of wages	4.67 (1.88)	3.23 (1.72) .229	4.09 (1.29) .421	2.94 (1.58) .264
% Unionized, SMSA	.185 (.095)	(.082)	(.279)	(.252)
R^2	.299	.272	.400	.282
N	1245	2180	172	278
	White Males, Ages 25-64		Black Males, Ages 25-64	
	Union	Nonunion	Union	Nonunion
C. CPS May 1973-75				
Mean and standard deviation of wages	5.31 (2.36)	4.48 (2.47)	4.45 (2.42)	3.59 (2.43)
% Unionized, SMSA	.193 (.052)	.104 (.082)	.182 (.140)	-.040 (.182)
R^2	.500	.439	.529	.292
N	7649	6183	1383	1091

Note: Dependent variable in each regression is log (hourly earnings). Each regression includes all of the controls listed in Table 1, with the exception of the SMSA dummy. The sample is also the same, and is limited to the 98 largest SMSAs.

sample, which is not significant because of the small sample size for young blacks.

In order to look more closely at the relationship of union and nonunion wages to proportion of an SMSA unionized for young workers, the SMSAs are divided into four discrete categories of proportion organized among production workers. Mean wages of young, blue-collar whites and blacks in these categories are shown in Table 3. The wages of black union members show some upward movement, particularly in the earlier sample. But for nonunion blacks a fairly strong downward trend is evident in both samples.

These results do not change substantially when controlling for some other labor supply and demand shift factors for an SMSA. The results of the following equation are shown in Table 4 for young black and white nonunion workers:

$$(5) \quad \ell nW_{ik} = aX_{ik} + fD_k + gS_k + e_{ik}$$

where D_k and S_k are vectors of labor demand and supply shift factors for the kth SMSA, respectively. The demand shift factors include the overall unemployemnt rate; and index of industry structure that weights the proportion of each industry's national employment that is accounted for by young people by the proportion of each SMSA's employment that the industry accounts for; and the average annual rate of growth of per capita income for the SMSA between 1960 and 1970. Supply shift factors other than proportion unionized are the proportions of blacks and teenagers in the population. The proportion of female-headed households is also included to control for potential "neighborhood effects" on labor supply and demand.[13/] All of these factors are considered exogenous with respect to the individual's wages.

In order to deal with the differences in estimates between the two samples, Parts A and B in Table 4 present estimates of equation (5) that are

TABLE 3

AVERAGE HOURLY EARNINGS FOR WHITE AND BLACK BLUE-COLLAR WORKERS, AGES 16-24, UNION AND NONUNION BY PROPORTION OF SMSA UNIONIZED

	White Males		Black Males	
	Union	Nonunion	Union	Nonunion
A. CPS May 1973-75				
% Unionized				
1-25	4.78	3.21	3.50	3.16
26-35	4.46	3.17	3.79	2.94
36-45	4.60	3.23	4.03	2.68
45+	4.75	3.32	4.42	2.74
B. CPS May 1976-78				
% Unionized				
1-25	5.31	3.56	4.73	3.28
26-35	5.28	3.61	4.48	2.65
36-45	5.31	3.46	4.82	2.59
45+	5.64	3.50	4.46	3.00

derived from the May CPS tapes, 1973-75 and 1976-78 respectively; Part C then presents averages of the two esimtaes based on the following formulae:

$$(6) \quad \beta^* = \frac{SE_2 \beta_1 + SE_1 \beta_2}{SE_1 + SE_2} \qquad SE^* = \frac{SE_1 \cdot SE_2}{SE_1 + SE_2}$$

where f is the coefficient on proportion unionized, SE is its standard error, and the subscripts refer to the different samples. The formulae are based on a Bayesian procedure that weights each individual coefficient by the standard error of the other in producing an average of the two.

Table 4 shows that the effect of proportion unionized in an SMSA on the wages of young, nonunion blacks remains substantially negative even after controlling for the other supply and demand characteristics of SMSAs. The second column in the table presents results from an equation in which the continuous proportion unionized variable is replaced by dummies for the discrete categories used in the previous table. The results for blacks are fairly consistent with those of Table 3; the drop in wages is clearly seen here for the third and fourth categories. For young, nonunion whites, on the other hand, there appears to be a significant positive effect of proportion unionized on wages when controlling for supply and demand shift factors.

Turning now to the effects of unionization on employment, Table 5 shows the results of employment equations which take the following form:

$$(7) \quad E_{ik} = Y_{ik} + hP_k + e_{ik}$$

where E_{ik} is a dummy for employment of the ith individual in the kth SMSA; Y_{ik} is a vector of personal characteristics which omits those characteristics of X_{ik} that are only defined for the employed (e.g., occupation and industry); and P_k is the proportion of all workers in an SMSA who are unionized.[14/] Equation (7) is therefore a linear probability model for the employment of an individual.[15/] It is estimated separately for older white and black males

TABLE 4

EFFECTS OF PROPORTION UNIONIZED IN SMSA ON WAGES OF NONUNION BLUE-COLLAR WORKERS, AGES 16-24, WHEN CONTROLLING FOR CHARACTERISTICS OF SMSA

	White Males		Black Males	
	1	2	1	2
A. CPS May 1976-78				
% Unionized, SMSA	.308	--	-.228	--
	(.128)		(.420)	
Categories of porportion unionized:				
1-25	--	-.060	--	.030
		(.046)		(.182)
26-35	--	-.073	--	.122
		(.038)		(.127)
36-45	--	-.037	--	-.010
		(.030)		(.108)
R^2	.351	.350	.518	.521
N	2202	2202	283	283
B. CPS May 1973-75				
% Unionized, SMSA	.183	--	-.671	--
	(.046)		(.289)	
Categories of proportion unionized:				
1-25	--	-.045	--	.035
		(.033)		(.113)
26-35	--	-.050	--	.079
		(.030)		(.094)
36-45	--	-.017	--	-.078
		(.022)		(.086)
R^2	.279	.279	.303	.301
N	2180	2189	278	278
C. Weighted Results				
% Unionized, SMSA	.231	--	-.517	--
	(.075)		(.235)	
Categories of proportion unionized:				
1-25	--	-.049	--	.040
		(.026)		(.097)
26-35	--	-.061	--	.079
		(.024)		(.075)
36-45	--	-.027	--	-.040
		(.017)		(.071)

Note: Dependent variable in each regression is log (hourly earnings). Each regression includes controls listed in Table 1, with the exception of the SMSA dummy, as well as controls for demand (overall unemployment rate, index of industry structure, average annual rate of growth in per capita income) and supply (proportion of blacks, teenagers, and female-headed households in the population) characteristics of the SMSAs.

using the CPS tapes of May 1976 and March 1978; while for younger males the Survey of Income and Employment (SIE) from March 1976 and the CPS of March 1978 are used. The SIE is basically a larger version of the March CPS of that year; it is used once again because of the sample size problems for young males.

Table 5 shows that the proportion of an SMSA that is unionized has a negative effect on employment for everyone except older black males. The effects on the young are stronger than those on the older groups for either race, and the strongest effect appears to be that for young blacks, especially in the 1978 sample.

Table 6 shows the employment/population ratios for young white and black males in each of the four categories of proportion unionized. It shows a decline in employment for both whites and blacks in each data set as unionism rises. The decline is sharper for blacks than for whites, particularly in the fourth category. It is also interesting to note that employment increases between 1976 and 1978 in all categories for whites, but it decreases for blacks in all categories except the first one. This explains the sharp rise in the magnitude of the negative coefficient on unionism for blacks between 1976 and 1978; it also suggests a secular worsening of the employment situation for young blacks in the heavily unionized areas.

The linear probability models for employment of young whites and blacks are also estimated in equations of the following form:

$$(8) \quad E_{ik} = aY_{ik} + jD_k + \ell S_i + e_{ik}$$

where D_k and S_i use the vectors of labor demand and supply shift factors as before. Among the personal characteristics controlled for here are a family income variable, a dummy variable for not living with parents, and interaction between the two, and a dummy for being part of a family that receives welfare.

TABLE 5

EFFECTS OF PROPORTION UNIONIZED IN SMSA ON EMPLOYEMNT OF BLACK AND WHITE MALES

	White	Black
	Ages 16-24	
A. CPS March 1978		
Means and standard deviations of employment	.834	.618
	(.371)	(.487)
% Unionized, SMSA	-.175	-1.43
	(.150)	(.434)
R^2	.035	.130
N	1938	357
B. SIE March 1976		
Means and standard deviations of employemnt	.808	.632
	(.394)	(.483)
% Unionized, SMSA	-.252	-.262
	(.081)	(.233)
R^2	.057	.127
N	5402	1235
	Ages 25-64	
C. CPS March 1978		
Means and standard deviations of employment	.875	.781
	(.331)	(.414)
% Unionized, SMSA	-.090	.354
	(.056)	(.187)
R^2	.079	.073
N	11,332	1700
D. CPS May 1976		
Means and standard deviations of employment	.876	.785
	(.329)	(.411)
% Unionized, SMSA	-.067	.000
	(.042)	(.153)
R^2	.082	.095
N	13,912	1889

Note: Dependent variable in each regression is a dummy variable for employment. The sample includes all in the population except for students.

TABLE 6

EMPLOYMENT RATIOS FOR BLACK AND WHITE MALES, AGES 16-24
BY PROPORTION UNIONIZED IN SMSA

	White Males	Black Males
A. CPS March 1978		
% Unionized, SMSA		
1-15	.89	.72
16-25	.82	.63
26-30	.84	.61
31+	.82	.50
B. SIE March 1976		
% Unionized, SMSA		
1-15	.82	.66
16-25	.81	.67
26-30	.81	.63
31+	.78	.53

The results are shown in Table 7. As before, Part C shows a weighted average of the results presented from the tapes in Parts A and B. The first column shows large and significant negative effects on employment for young whites in both samples. The black coefficient from the 1976 samples is of approximately the same magnitude as the coefficient for whites, although the smaller black sample causes a standard error which is larger on the former. From the 1978 sample the black coefficient remains more highly negative than that for whites, as does the weighted average in Part C. The second column shows results from an equation which contains dummies for porportion organized categories rather than a continuous variable. The results from each sample show a definite drop in employment in the fourth category which is sharper for blacks than for whites.

To summarize, high rates of unionization in SMSAs appear to raise wages for white and black unionists and also for nonunion whites, but its effect on the wages of nonunion blacks appears to be quite negative. The unionization of an SMSA also has a strong negative effect on the employment of young whites and especially young blacks. These effects persist even when controlling for various other characteristics of labor supply and demand in an SMSA. Of course, the controls may be incomplete; but the evidence strongly suggests that unions lower both the wages and employment of young, nonunion blacks, especially relative to their white counterparts.

There are two potential explanations of this relative decline in both wages and employment for nonunion blacks; each explanation is consistent with the supply shift theory presented above. The first would imply a greater shift in the supply of labor for blacks and for whites; the second would imply a queue of unemployed in which whites obtain employment more quickly and at higher wages than blacks because of better skills and/or discrimination. The

TABLE 7

EFFECTS OF PROPORTION UNIONIZED IN SMSA ON EMPLOYMENT OF WHITE AND BLACK MALES, AGES 16-24, WHEN CONTROLLING FOR CHARACTERISTICS OF SMSA AND FAMILY INCOME

	White Males		Black Males	
	1	2	1	2
A. CPS March 1978				
% Unionized, SMSA	-.204	--	-1.78	--
	(.186)		(.568)	
Categories of proportion unionized:				
1-15	--	.088	--	.203
		(.051)		(.177)
16-25	--	-.014	--	-.141
		(.031)		(.098)
26-30	--	-.035	--	.384
		(.041)		(.142)
R^2	.066	.069	.164	.154
N	1938	1938	357	357
B. SIE March 1976				
% Unionized, SMSA	-.216	--	-.162	--
	(.081)		(.232)	
Categories of proportion unionized:				
1-15	--	.080	--	.025
		(.022)		(.072)
16-25	--	.061	--	.084
		(.017)		(.059)
26-30	--	.015	--	.057
		(.021)		(.063)
R^2	.070	.072	.152	.153
N	5461	5461	1235	1235
C. Weighted Results				
% Unionized, SMSA	-.208	--	-.486	--
	(.074)		(.226)	
Categories of proportion unionized:				
1-15	--	.083	--	.050
		(.049)		(.066)
16-25	--	.041	--	.097
		(.015)		(.051)
26-30	--	.005	--	.112
		(.020)		(.058)

Note: Dependent variable in each regression is a dummy variable for employment. The sample includes all in the population except students. Controls include those listed in Table 5, the SMSA controls listed in Table 4, and various family income controls (a dummy variable for living alone, family income, their interaction, and a dummy for being on welfare).

two explanations are certainly not mutually exclusive and there is evidence in support of both. The first explanation is consistent with the evidence of higher union wage effects for blacks presented here and by Ashenfelter;[16/] but it is unlikely that the differential favoring young blacks in Table 1 is great enough to fully explain the large relative decline in both wages and employment for nonunion young blacks. The first explanation is also consistent with the evidence presented below of lower access to unionized jobs for young blacks than for young whites in heavily unionized areas, thereby creating a greater supply of nonunion blacks. The second explanation is consistent with evidence of a longer duration of nonemployment for young blacks than for young whites.[17/]

III. Union Membership Rates for Young Blacks and Whites

Until now, the impact of unions on wages of young blacks and whites in both the union and nonunion sectors have been considered. It is also important to consider the distribution of young blacks and whites between these sectors, as well as the implications of the distribution for the access of blacks to unionized employment. There is a rather extensive literature that describes the history of blacks in unions; it focuses on the exclusion of blacks from many craft unions in the early years of the AFL, and the inclusion of blacks in the mass-production industrial unions of the CIO during the 1930s and 1940s. This literature also describes the demise of "formal exclusion" in the 1950s and 1960s, and the persistence of "informal exclusion" of blacks, particularly from the construction craft unions.[18/] More recently there has been discussion of "recruitment" and "screening" barriers faced by young blacks which limit their employment in both craft and industrial unions.[19/] There has also

been a growing literature on the effects of various legal and institutional remedies for informal exclusion, such as the proliferation of court imposed timetables for integration of construction craft locals across the country.[20/] But this literature has largely been from a legal rather than an empirical perspective. It is therefore important to consider rates of union membership for younger and older blacks and whites across various occupational, regional, and demographic groups.

Union membership rates were computed for blacks and whites between the ages of 16 and 24 as well as for three older cohorts from the CPS for May 1978. The results appear in Table 8. Membership is lowest in the youngest cohort for both races; this is especially true for blacks, who have experienced rapid growth of educational attainment and white-collar employment relative to older cohorts. Within the youngest cohort, blacks have slightly higher overall union membership rates than whites, but the difference is not statistically significant. For young blue-collar workers, only black service employees have significantly higher membership rates. Union membership is also higher for young blacks among white-collar workers; high school and college graduates; residents of the Northeast and North Central regions; as well as residents of central cities. Of course, some part of the rather large regional and urban membership differential is probably due to higher concentration of blacks in blue-collar occupations and higher rates of unionism within the white-collar and service sectors. It is important to note that higher rates of unionism for whites in construction and among blue-collar workers in general characterize older cohorts but not the younger ones.

However, these results must be qualified in two ways. For one thing, membership rates computed only for those in the labor force ignore the higher rates of nonparticipation among young blacks than among

TABLE 8

PERCENT ORGANIZED, 1978, FOR WHITE AND BLACK MALES IN THE LABOR FORCE

	Total	Region				Education			Construction
		NE	NC	S	W	Coll	HS	GS	
White Males, ages 16-24	.162 (.005)	.172 (.012)	.191 (.010)	.098 (.010)	.189 (.011)	.116 (.022)	.206 (.007)	.096 (.009)	.181 (.018)
Black Males, ages 16-24	.177 (.018)	.338 (.055)	.276 (.044)	.088 (.025)	.223 (.037)	.146 (.071)	.246 (.024)	.077 (.030)	.175 (.058)
White Males, ages 25-64	.309 (.004)	.360 (.007)	.359 (.007)	.203 (.008)	.319 (.007)	.159 (.007)	.344 (.004)	.379 (.007)	.418 (.011)
Black Males, ages 25-64	.355 (.009)	.487 (.021)	.535 (.026)	.262 (.014)	.370 (.021)	.226 (.024)	.430 (.014)	.350 (.012)	.343 (.032)

	Occupation						Residence		
	WC	BC	CR	Op	Lab	Service	CC	Sub	Non-M
White Males, ages 16-24	.072 (.012)	.197 (.007)	.215 (.012)	.235 (.011)	.221 (.012)	.076 (.014)	.186 (.012)	.177 (.008)	.139 (.010)
Black Males, ages 16-24	.141 (.052)	.193 (.021)	.234 (.058)	.234 (.042)	.182 (.038)	.148 (.039)	.242 (.028)	.170 (.043)	.076 (.035)
White Males, ages 25-64	.153 (.005)	.456 (.003)	.429 (.009)	.541 (.006)	.452 (.009)	.361 (.009)	.325 (.008)	.328 (.006)	.285 (.006)
Black Males, ages 25-64	.320 (.018)	.434 (.012)	.447 (.024)	.491 (.022)	.353 (.027)	.362 (.025)	.448 (.015)	.330 (.021)	.236 (.020)

Note: Computed from CPS, May 1978. Regions are Northeast (NE), North-Central (NC), South and West; educational groups are College (coll), high school (HS), and grade school (GS); occupational groups are blue-collar (BC), crafts (CR), operations (Op), laborers (Lab), and service. Residence groups are central city (CC), suburban (sub), and non-metropolitan (Non-M).

young whites. When membership is calculated for the entire population rather than just the labor force, the total rate for young whites becomes 12.1% while that for young blacks becomes 10.8%. It is also likely that, if such adjustments were made for specific demographic groups, large and significant differentials favoring whites would emerge. For instance, the membership differential favoring young whites without high school diplomas over their black counterparts would probably become quite significant if rates within educational groups were adjusted for differences in participation.

The second problem that needs to be noted here is that, although membership rates within occupational groups are comparable for young whites and blacks, their distributions between these occupations remain quite dissimilar. Calculations performed on data for the CPS of May 1978 show that 19.7% of young whites who are employed in the private sector are craftsmen and 11.7% work in construction. The corresponding figures for young blacks are 10.5% and 8.5%, respectively. The differentials favoring whites in these well-paying, heavily unionized sectors therefore persist despite the major efforts made by courts in the past decade to impose timetables for black entry into construction craft union locals. The data also show that only 13.9% of young whites in the private sector are employed in service occupations, which are often low-paying and less heavily unionized; the figure for young blacks is 21.8%. Thus the absence of membership differentials within most blue-collar occupations does not imply equal access to the occupations themselves for young blacks.

The continued low concentration of young blacks in construction and the crafts is particularly puzzling in light of the relatively high enrollment in craft apprenticeship programs.[21/] It is clear, then, that

many black apprentices do not ultimately achieve journeymen status or employment in the skill crafts. There appear to be two closely related explanations for this result: (1) unionized construction has been depressed in the North throughout the 1970s, thereby decreasing the number of openings available for young craftsmen of either race, and (2) the monitoring and enforcing of federally designed or court imposed timetables for craft locals and contractors has been weak and realtively unsuccessful. Thus, when openings become available they are more often filled by young whites entering through informal channels than by blacks who travel the formal apprenticeship route.[22/]

Finally, the relative ability of young blacks to obtain union membership as overall union membership rises in an SMSA is analyzed in Table 9. This table shows that the proportion of employed workers that is unionized is higher for blacks than for whites in each of the categories of proportion unionized. However, the proportion of the overall population that is unionized is lower for blacks in all but one category, and is substantially lower in the category with the highest overall leval of unionism. It therefore seems as though black access may not be keeping pace with overall rates of unionism in the heavily unionized SMSAs.

IV. The Overall Effects of Union Organization for Young Blacks and Whites

Given the effects of unions on wages in the union and nonunion sectors and an employment for young blacks and whites; and given their respective rates of union membership; the overall effects of union organization on wages and employment for these groups can be calculated. The wage of employed young blacks can be written as a geometrically weighted average of their union and nonunion wages:

$$(9) \quad \bar{W}_B = W_{u,B}^{P_{u,B}} \quad W_{nu,B}^{(1-P_{u,B})}$$

TABLE 9

UNION MEMBERSHIP FOR BLACK AND WHITE MALES, AGES 16-24, BY PERCENT ORGANIZED IN SMSA

% Unionized in SMSA	White Males			Black Males		
	Blue-Collar	Total Employment	Total Population	Blue-Collar	Total Employment	Total Population
1-15	.129	.108	.096	.221	.190	.137
16-25	.223	.195	.160	.312	.252	.159
26-30	.345	.273	.229	.333	.342	.209
31+	.386	.371	.263	.432	.365	.183

Note: Sources are CPS, May 1976-78 and CPS, March 1978.

where $P_{u,B}$ is the probability of young blacks being unionized and where $W_{u,B}$ and $W_{nu,B}$ are the average wages in each sector. By taking logs we obtain an arithmatic average of the wages:

$$(10) \quad \ell n\bar{W}_B = P_{u,B} \cdot \ell nW_{u,B} + (1 - P_{u,B}) \cdot \ell n\, W_{nu,B}$$

which can also be written as:

$$(11) \quad \ell n\bar{W}_B = \ell nW_{nu,B} + P_{u,B}\,(\ell nW_{u,B} - \ell nW_{nu,B})$$

Comparable equations can be written for young whites.

The effects of the economy-wide rate of unionism on black wages can be analyzed by taking first differences with respect to these rates:

$$(12) \quad \frac{\Delta \ell n\bar{W}_B}{\Delta P_u} = \frac{\Delta \ell nW_{nu,B}}{\Delta P_u} + \frac{\Delta P_{u,B}}{\Delta P_u}\,(\ell nW_{u,B} - \ell nW_{nu,B})$$

$$+ P_{u,B}\left(\frac{\Delta \ell nW_{u,B}}{\Delta P_u} - \frac{\Delta \ell nW_{nu,B}}{\Delta P_u}\right) + \frac{\Delta P_{u,B}}{\Delta P_u}\left(\frac{\Delta \ell nW_{u,B}}{\Delta P_u} - \frac{\Delta \ell nW_{nu,B}}{\Delta P_u}\right)$$

where P_u is the overall rate of unionization in the labor force.

The calculations were performed for the sample of young white and black, blue-collar workers in the largest 98 SMSAs. The effects of changes in unionism on nonunion wages can be obtained from Table 4; the coefficients from the first column we used here. The effects on union wages we obtained from the first column of Table 2. The union-nonunion wage differential in logs is obtained from the coefficients presented in Table 1. Changes in union membership for young blacks and whites that occur with changes in overall rates of unions were obtained from a simple regression of union membership for individuals on rates of unions in their respective SMSAs among blue-collar workers.

The results of these calculations appear in Part A of Table 10. These results show that a 10% rise in rates of unionis among all blue-collar workers would raise overall wages of young whites by about 5% and those of young blacks by about 8%. Part B of Table 10 presents the employ-

TABLE 10

OVERALL EFFECTS OF CHANGES IN UNIONS ON
WAGES AND EMPLOYMENT OF YOUNG BLACKS AND WHITES

A. Union Wage Effects for Blue-Collar Workers

	Whites	Blacks
CPS, May 1976-78	.719	1.037
CPS, May 1973-75	.465	.584
Weighted Results	.543	.724

B. Union Employment Effects for Entire Population

	Whites	Blacks
CPS, March 1978	-.204	-1.78
SIE, March 1976	-.216	- .162
Weighted Results	-.208	- .486

ment coefficients from column 1 of Table 7; they imply that a 10% rise in rates of unionism in the labor force would lower young white employment by about 2% and lower young black employment by about 5%. Of course, the estimates from the different samples show that there is considerable uncertainty over the exact magnitude of the effect in each case.

It should be noted that union membership among young blacks can be improved without raising overall rates of unionism by improving their access to areas of the economy that are currently unionized. This would not only raise the wages of those who become unionized, but it would also lower the supply of young black nonunion workers, thereby raising their wages and/or employment. Furthermore, new organizing activity could take place in sectors which are currently nonunion and where blacks are heavily concentrated, such as the service sctor. This would strongly raise the number of low wage blacks who benefit from a given increase in overall organization, but this latter policy is more likely to produce lower employment among those who remain nonunion.

V. Summary and Conclusion

This paper presents estimates of the effects of unions on the wages of young blacks and whites, both union and nonunion, as well as their effects on employment for these groups. The estimates suggest that unions raise the wages of their young blue-collar workers substantially, but that they also reduce the wages of young, nonunion blacks. Employment is also reduced for young whites and especially for young blacks. These results seem to be consistent with a theory which claims that unions cause an excess supply of nonunion labor, particularly for blacks.

The ability of young blacks to obtain union membership has also

discussed. It was shown that within the labor force membership rates for young whites and blacks are roughly comparable. But higher rates of unemployment and nonparticipation for young blacks imply lower rates of unionism within the population. Moreover, blacks remain underrepresented in such heavily unionized occupations as the construction crafts and over-represented in the service sector where unionism is far less prevalent.

Using the above results to calculate the overall effects of unions for young, blue-collar labor, it was shown that changes in the economy-wide rates of union organization would raise overall wages and lower employment for both blacks and whites. However, young blacks should strongly benefit in terms of both wages and employment from improved access to sectors which are already unionized. Many young blacks would also benefit from greater unionization of the sectors where they are heavily concentrated, although the employment effects for those who would remain nonunion must be considered.

Footnotes

1/ Union and nonunion workers need not be distinguished among the unemployed, since union membership is often conditional on employment or labor force participation. Union membership for many young workers only comes after they have entered unionized crafts. Furthermore, many laid-off unionists who are seeking other work do not report their union membership status, thus making it very difficult to estimate employment of union and nonunion workers separately.

2/ Although I use the words "minority" and "black" interchangeably in the paper, the sample always includes all nonwhite minorities.

3/ The analysis has been performed only for males, because racial differences among females take a very different form and it is difficult to come to general conclusions that apply to both sexes.

4/ Both the theoretical framework and the estimation techniques used in this paper rely on, to some extent, approaches used in several earlier papers. Orley Ashenfelter has estimated union/nonunion wage differentials for blacks and whites and weighted them by union membership rates in "Racial Discrimination and Trade Unionism," Journal of Political Economy, Vol. 80, No. 3, Part I (May/June 1972), pp. 435-465. Lawrence M. Kahn has estimated the effects of unionism in SMSAs on nonunion wages for clerical and service workers in "Union Spillover Effects on Unorganized Labor Markets," Journal of Human Resources, Vol. 15, No. 1, (Winter 1980), pp. 87-98; he has also estimated the effects of unionism in SMSAs on weeks worked in "Unions and the Employment Status of Nonunion Workers," Industrial Relations, Vol. 17, No. 2 (May 1978), pp. 238-244. Finally,

Richard B. Freeman and James L. Medoff have considered the effects of the proportion of industries that are unionized on wages of both union and nonunion workers in those industries in "Percent Unionized Wage Relationships for Union and Nonunion Workers," Journal of Human Resources (forthcoming). This paper integrates and extends the approaches used in these earlier papers, and applies them specifically to the problems of white and black youth in the labor market.

5/ Harry G. Johnson and Peter Mieszkowski, "The Effects of Unionization on the Distribution of Income: A General Equation Approach," Quarterly Journal of Economics, Vol. 84, No. 4 (November 1979), pp. 539-561.

6/ The condition under which labor moves from the union to the nonunion sector is that the vacancy rate be lower than the elasticity of demand in the union sector; this is derived by Jacob Mincer in "Unemployment Effects of Minimum Wages," Journal of Political Economy, Vol. 84, No. 4, Part 2 (August 1976), pp. 587-5104. Since turnover and vacancy rates in the union sector generally are quite low, I assume that this condition is met throughout the analysis.

7/ Freeman and Medoff, op. cit.

8/ Freeman and Medoff estimate separate wage equations for union and nonunion workers which contain an independent variable for the proportion of production workers in an individual's industry who are unionized. They find a strong positive effect for wages of union workers but smaller and insignificant positive effects for nonunion workers. The proportion unionized figures are nationwide averages for three-digit industries; therefore, they are appropriate only when used for industries with nationwide product markets, such as manufacturing. But in this paper the sample of young black workers is too small to be limited in this fashion. Therefore, the only

estimates presented in this paper are those for proportions of SMSAs that are unionized.

9/ These equations seek only to estimate the union/nonunion wage differentials and abstract from such problems as the endogeneity of union membership and the issue of union and nonunion worker quality. See H. Gregg Lewis, Unionism and Relative Wages in the United States (Chicago: University of Chicago Press, 1963); O. Ashenfelter and G. Johnson, "Unionism, Relative Wages, and Labor Quality," International Economic Review, Vol. 13, No. 3 (October 1972), pp. 488-507.

10/ The formula for the standard deviation of the difference between estimated parameters for whites and blacks is: $[V_W + V_B - 2COV(W,B)]^{\frac{1}{2}}$. The covariance term, of course, is zero.

11/ Proportion unionized figures for SMSAs are available in Richard B. Freeman and James L. Medoff, "New Estimates of Private Sector Unionism in the United States," Industrial & Labor Relations Review, Vol. 32, No. 2 (January 1979), pp. 143-174.

12/ The two data sets each cover adjacent periods of three years. Both periods are affected about equally by the mid-1970s recession, since the years of greatest slack were 1975 and 1976. The samples have similar numbers of young blacks and union members. One must therefore conclude that the differences in estimates of wage effects between the two data sets reflect random influences in these two relatively small samples of young blacks. The problem may be complicated by one of multicollinearity because of the strong correlation between proportion of SMSA unionized and region.

13/ The SMSA variables and their sources are described in detail in an appendix to the paper by Richard B. Freeman, "The Geographic and

Economic Determinants and Differences in Youth Unemployment Across Demographic Groups," in Richard B. Freeman and David A. Wise, eds., The Youth Employment Problem: Its Nature, Causes and Consequences (Chicago: University of Chicago Press, forthcoming).

14/ Although the effects of unionism on labor force participation and umeployment are as important as those on employment, I focus on the latter because of problems in the definition and measurement of labor force participation. See Kim B. Clark and Lawrence H. Summers, "Labor Market Dynamics and Unemployment: A Reconsideration," Brookings Papers on Economic Activity,

15/ Because of the problems of heteroscedasticity and predictions which lie outside the 0.1 range in the linear probability model, I also used maximum likelihood techniques to estimate equation (14) in its logistic probability form:

$$P_{ik} = 1/\ 1 + e^{-(Y_{ik} + hP_k)}$$

where P_{ik} is the probability of employment for the ith individual in the kth SMSA. The partial deviations of this probability with respect to SMSA unionism, $\partial P_{ik}/\partial P_k$, were then estimated at the mean of the dependent variable by computing $\bar{P}(1-\bar{P})h$. When this was done for young white and black males in both samples, the results were virtually identical to those presented for the linear probability model in Table 5.

16/ Ashenfelter, op. cit.

17/ See Kim B. Clark and Lawrence H. Summers, "The Dynamics of Youth Unemployment," in Freeman and Wise, op. cit.

18/ Ray Marshall, The Negro and the AFL-CIO (New York: John Wiley and Sons, 1965).

19/ Peter Doeringer and Michael Piore, Internal Labor Markets (Lexington, Massachusetts: Heath Books, 1971), Chapter 5.

20/ See, for instance, William B. Gould, Black Workers in White Unions (Ithaca, New York: Cornell University Press, 1977).

21/ Employment and Training Report of the President, 1978 (Washington, D.C.: G.P.O., 1978), Table F-16, p. 322.

22/ See General Accounting Office, "Report to Congress by the Comptroller General of the United States: Federal Efforts to Increase Miniority Opportunities in Skilled Construction Craft Unions Have Had Little Success," (Wahsington, D.C.: March 1979).