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THE EFFECT OF RESIDENTIAL LOCATION ON THE WAGES
OF BLACK WOMEN AND WHITE WOMEN

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INTRODUCTION

The debate continues on the relationship between residential location and economic outcomes for black Americans. Some social scientists argue that the massive post-World War II suburbanization of employment results in higher rates of unemployment, lower occupational status, and lower earnings for blacks who reside in central cities of metropolitan areas. Other social scientists argue that there are no differences in economic outcomes between blacks who reside in central cities and blacks who reside in suburban rings of metropolitan areas.

This disagreement must be resolved if public policy is to be formulated intelligently during this decade. On the one hand, if economic outcomes for black Americans are independent of their residential location, then government policies to ease racial residential segregation, for example, may do little to improve the economic welfare of current black workers. On the other hand, if suburban-ring black workers have higher positive economic outcomes than comparable central-city blacks, then policies to reduce residential segregation may enhance the economic welfare of black workers. ¹

In this paper we use two waves from the National Longitudinal Survey (NLS) of women aged 30 to 44 in 1967 and 40 to 54 in 1977 to investigate the effect of residential location on the wages of black women relative to white women. ² Since most previous empirical studies on the spatial

location hypothesis focus on the economic performance of men, they provide an incomplete and possibly misleading picture of the relationship between residential location and the economic welfare of black families because there is no recognition of the crucial role of black women in the life of most black families. Two-worker households are more traditional in black American families because of the historical pattern of racial discrimination in schooling and in labor markets. Indeed, the full or part-time earnings of black female secondary workers have always been essential to the economic well-being of black families. Moreover, the much higher divorce and separation rates for black Americans result in a disproportionate number of female-headed households, where the earnings of the black female represent the entire family income. ³

PREVIOUS RESEARCH

In 1968 John F. Kain published the seminal article on the spatial location hypothesis when he investigated the relationship between racial residential segregation and the level and distribution of employment for blacks in the Detroit (1952) and Chicago (1956) housing markets. Kain shows that the black share of metropolitan area jobs decreases with distance from the core city ghetto. He finds that the difference between expected and actual black employment ranges from 22,000 to 25,000 for Chicago and 4,000 to 9,000 for Detroit. ⁴

Immediately thereafter, Duran Bell, Jr. used the 1967 Survey of Economic Opportunity (SEO) to assess the impact of residential location (poor city, nonpoor city, and suburban ring) on earnings and "labor-force

activity" for married women.⁵ The empirical strategy which Bell employs is to estimate separate regression equations for black women and white women, using the following control variables: the age and education of the female workers; the number of hours and weeks they worked; the number and ages of their children; the number of weeks their husbands were unemployed; other family income; the size and region of their metropolitan area; and residential location.

Bell compares the coefficient estimates for the dummy variables for women who live in the nonpoor city and the suburban ring relative to women who live in the poor city. For married black women, Bell finds statistically significant higher full-time labor force activity rates for residents in the nonpoor city and insignificantly higher activity rates for residents in the suburban ring. Second, Bell finds that while black women in the nonpoor city earn \$307 more per year than black women in the poor city, earnings of black women in the suburban ring are not different from their counterparts in the poor city. For married white women, Bell finds that activity rates decline monotonically with distance from the poor city. Second, the earnings of white women are independent of their residential location. In sum, the analysis suggests that black suburban women have lower labor force activity levels and lower earnings than their sisters in the nonpoor city. Bell concludes by suggesting that the lower economic performance of black suburban women results from the scarcity of clerical and high-status jobs for black suburban women.

John Vrooman and Stuart Greenfield used a 1973-74 survey conducted by the Opinion Research Corporation for the Adult Performance Level project at the University of Texas at Austin to assess the impact of residential location (central city and suburban ring) on earnings and an "index of earnings potential of a given occupation" for black males, black females, and white males. The empirical strategy which Vrooman and Greenfield employ is to estimate separate regression equations for the six race/sex/residential location groupings. The control variables are the number of years of formal schooling, the number of years of vocational education, the number of years of labor market experience, the square of labor market experience, employment status, and an index of adult functional competence.

In order to assess the effect of spatial location upon economic performance, Vrooman and Greenfield compare the earnings and earnings potential of black central-city residents with the earnings and earnings potential of these same residents given that they receive the market determined prices of white male suburban-ring residents. They find a central-city earnings disadvantage for black men and a central-city earnings advantage for black women.

The major conceptual weakness of Bell's analysis is his failure to estimate the separate effects on earnings of discrimination based on different market valuation of prices and discrimination based on residential location. That is, instead of comparing black central-city nonpoor women and black suburban-ring women to black central-city poor women, Bell should instead compare these three groups relative to some base white group, suburban-ring white women, for example. Vrooman and Greenfield, although

attempting to incorporate both aspects of discrimination, choose, unfortunately, to compare black women with white men, which makes it impossible to disentangle discrimination based on race from discrimination based on sex. ⁶

PRESENT EMPIRICAL STRATEGY

Black female workers receive lower wages than white female workers for three distinct reasons: (1) differences in the characteristics of black female workers and white female workers; (2) differences in the market valuation of these characteristics; and (3) differences in the residential location of black female workers and white female workers.

Vrooman and Greenfield call these three types of discrimination:

(1) institutional, (2) overt, and (3) spatial. Although some economists would identify institutional discrimination with some form of discrimination prior to entry into the labor market, other economists would argue strongly that differences in mean characteristics for black women and white women represent the women's voluntary decisions. Thus, any wage differential we observe because of reason (1) is fully justified.

We will employ two alternative empirical strategies which will allow us to identify reason (2) as the direct effect of racial discrimination in the labor market and reason (3) as the indirect effect of racial discrimination in the housing market. ⁷ The first empirical strategy is to estimate a wage structure which applies to both racial groups. In this formulation, we control explicitly for differences in the characteristics of black female workers and white female workers. By examining the coefficient estimates on the race/residential location dummy variables, we can

determine whether black female workers receive lower wages because of differences in the market valuation of their characteristics and/or because of differences in their residential location.

The second empirical strategy is to estimate separate wage structures for each racial group, which controls for differences in characteristics within each racial group. By examining the coefficient estimates on the residential location dummy variable, we can determine whether a wage differential exists because of (3) differences in the residential location of black female workers and white female workers. By decomposing the wage differential, we can determine the proportion of the wage differential which is due to (1) differences in the characteristics of female workers and (2) differences in the market valuation of these characteristics.⁸

DEFINITION OF VARIABLES

The dependent variable is the natural logarithm of hourly wages for 1967 and 1977, which allows us to interpret the estimated coefficients from an ordinary least squares regression, when multiplied by 100, as the estimated percentage change in hourly wages from a unit change in a particular independent variable.⁹ The independent variables were chosen to correspond to a standard reduced-form human capital model, supplemented with information on the residential location of black female workers and white female workers. They include the following:

EXPERIENCE	=	potential labor market experience (Age - Education - Six)
EXPERIENCE**2	=	square of labor market experience
EDUCATION	=	number of years of schooling completed

TENURE	=	number of years at current job
SPOUSE PRESENT	=	1 if married, spouse present 0 otherwise
SPOUSE ABSENT	=	1 if married, spouse absent 0 otherwise
WIDOWED	=	1 if widowed 0 otherwise
DIVORCED	=	1 if divorced 0 otherwise
SEPARATED	=	1 if separated 0 otherwise
NEVER MARRIED	=	the reference group is women who were never married
CHILDREN	=	number of children
REGION	=	1 if female lives in the South 0 otherwise
CLASS OF WORKER	=	1 if private wage and salary worker 0 if government wage and salary worker
FULL-TIME	=	1 if female works thirty-five hours or more a week 0 otherwise
HEALTH	=	duration of health limitations in months
LABOR FORCE1	=	1 if the labor force is less than 50,000 0 otherwise
LABOR FORCE2	=	1 if the labor force is between 50,000 and 199,999 0 otherwise
LABOR FORCE3	=	1 if the labor force is between 200,000 and 999,999 0 otherwise
LABOR FORCE4	=	the reference category is a labor force greater than 1,000,000
UNEMRA	=	unemployment rate for labor market of current resident
OCC1 - OCC10	=	ten two-digit occupational classification dummy variables

IND1 - IND11	=	eleven two-digit industry classification dummy variables
BLACKC	=	1 if black female central-city resident 0 otherwise
BLACKS	=	1 if black female suburban-ring resident 0 otherwise
WHITEC	=	1 if white female central-city resident 0 otherwise
WHITES	=	the reference category is white female suburban-ring residents

We restrict our sample to black and white female urban residents who were either "working" or "with job, not at work" for the survey years 1967 and 1977. Since we wish to focus attention on the inequality in earnings of labor services, we also exclude self-employed workers. We list means and standard deviations for the variables in Appendix A.

Before presenting the empirical results, we should make three additional comments concerning the explanatory variables. First, although the use of "potential" labor market experience instead of "actual" labor market experience may bias some of the coefficient estimates, this bias is probably less important here since we are comparing black women relative to white women and not women versus men.¹⁰ Second, we use size of the labor force because it is available for both study years, while size of the urban area is available only for 1967. When we experiment with both sets of variables for 1967, we confirm our suspicion that the results do not depend on the particular set we use. Finally, we could, of course, specify the schooling component of the wage function differently. We could assume

diminishing returns to education, or we could assume different rates of return to different types of schooling, or we could assume that market valuation of other explanatory variables differs by the level of schooling. Since calculating rates of return to education is not the focus of this paper, we do not perform such experiments.

EMPIRICAL STRATEGY #1

A. Controlling for Occupation and Industry

Table 1 presents the semi-logarithmic regression coefficients and summary statistics for the first empirical strategy we employ to estimate the 1967 and 1977 wage structures for black female workers and white female workers.¹¹ Surprisingly, the coefficients on the experience and the square of experience terms do not yield a statistically significant concave experience-wage profile for either year. Since the sample is truncated to include only women between 30-44 in 1967 and 40-54 in 1977, there may not be enough variation in the experience variables to estimate these coefficients with any precision. The coefficients associated with job tenure, however, are highly significant and indicate that each year at the current job increases wages by 1.1 percent in 1967 and 1.3 percent in 1977. The coefficients on the linear education variable, which we can interpret as the rate of return to schooling, suggest a statistically significant rate of return for each year of education of 3.8 percent in 1967 and 3.6 percent in 1977.

Table 1

Empirical Strategy #1

	<u>1967</u>	<u>1977</u>
Constant	.8361	1.4382
Experience	-.0184 (1.50)	-.0190 (1.04)
Experience **2/100	.0463 (1.52)	.0294 (.93)
Education	.0384** (6.80)	.0357** (6.03)
Tenure	.0113** (5.97)	.0128** (9.13)
Spouse Present	.0797** (2.36)	.0340 (.79)
Spouse Absent	.1409 (.91)	.1097 (.76)
Widowed	-.0414 (.67)	-.0167 (.32)
Divorced	.0871** (2.00)	.0904* (1.90)
Separated	.0976** (2.05)	.0189 (.33)
Children	-.0092* (1.71)	-.0075 (1.62)
Region	-.1096** (4.70)	-.0855** (3.48)
Class of Worker	-.0650* (1.81)	-.0169 (.55)
Full-Time	-.0182 (.67)	.1067** (4.19)
Health	-.00060** (2.99)	-.00030 (1.54)

Table 1
(Continued)

	<u>1967</u>	<u>1977</u>
Labor Force1	-.1784** (2.76)	-.0797* (1.71)
Labor Force2	-.1683** (5.87)	-.0828** (2.75)
Labor Force3	-.1366** (5.84)	-.0434 (1.57)
Unemra	-.0033 (.49)	.0009 (.21)
Black Central-City Resident	-.0586** (2.18)	-.0372 (1.19)
Black Suburban-Ring Resident	-.1023* (1.94)	.0460 (1.01)
White Central-City Resident	-.0020 (.08)	.0557** (2.24)
$\bar{R}^2$	.50	.45
s_e	.3310	.3338
F	31.57	25.65
N	1232	1247

Notes:

- a absolute value of the t-statistics are in parentheses
- * statistically significant at the 0.10 level
- ** statistically significant at the 0.05 level

Four of the ten dummy variable coefficients for marital status are statistically significant at the 0.10 level. In 1967 married women (spouse present), divorced women, and separated women receive higher wages than women who were never married; in 1977 only divorced women earn more than their never married counterparts. The children variable, which may reflect the cost of lost labor market experience, is negative and statistically significant in 1967, but slightly insignificant in 1977. This dichotomy may reflect the importance of disrupted labor market experience in 1967 when women were in their prime child-bearing years. As expected, female workers who reside in the South receive a highly significant and relatively large wage penalty. Private wage and salary workers receive lower wages on average than government workers in 1967, but the difference disappears by 1977.

The coefficient on the dummy variable for employment status (full-time) is insignificant in 1967, but large, positive, and statistically significant in 1977. The coefficient on the duration of health limitations is negative and highly significant in 1967, but slightly insignificant in 1977. Five of the six size of the labor force variables have relatively large and significant coefficient estimates and indicate, as expected, that the smaller the size of the labor market, the larger the wage disadvantage. Presumably, the wage differential is compensating for differences in living costs across the country. The magnitude of these coefficients falls dramatically from 1967 to 1977. The coefficient on the unemployment rate variable, a measure of local labor market conditions, is insignificant in both study years.

The focus of the analysis is the results for the race/residential location dummy variables. In 1967, black central-city female residents receive 5.9 percent less and black suburban-ring residents receive 10.2 percent less than white suburban-ring female residents. We interpret these results to mean that we have a 5.9 percent wage disadvantage for being black but a 4.3 percent ($10.2 - 5.9$) wage advantage for central-city residential location. In 1977, black central-city female residents receive a statistically insignificant 3.7 percent less and black suburban-ring residents receive an insignificant 4.6 percent more than white suburban-ring female residents. ¹²

B. No Controls for Occupation and Industry

Table 2 presents the semi-logarithmic regression coefficients and summary statistics for the first empirical strategy when we no longer control for occupation and industry. In the literature on male-female wage differentials, controlling for job level assignment in a corporation (Malkiel-Malkiel), for academic rank in a university (Hoffman), and for occupation-industry classifications for urban workers (Oaxaca) reduces significantly the amount of the difference in male and female wages which can be attributed to sex discrimination in the labor market. Thus, to test for this effect in the NLS of mature women, we re-estimate the reduced-form human capital model without controlling for the two-digit occupation and industry classifications.

As one would expect, when we omit the occupation-industry variables, the explanatory power of the regression equations is reduced from .50 percent of the variation in log wages to .41 percent in 1967 and from .45 percent to .36 percent in 1977; the size of the other coefficient estimates generally increases (this is not a necessary condition); finally, the estimated t-statistics also generally increase. An F-test calculation indicates that we can reject at the .01 level for both survey years the null hypothesis that the coefficient estimates on the omitted occupation and industry dummy variables are (all) equal to zero.

The 1967 experience terms have statistically significant coefficient estimates, but, unfortunately, they carry the incorrect signs. As before, both terms have insignificant coefficient estimates for 1977. One important result is the increase in the estimated rate of return to an extra

Table 2

Empirical Strategy #1

	<u>1967</u>	<u>1977</u>
Constant	.3370	.9683
Experience	-.0256* (1.94)	-.0266 (1.38)
Experience**2/100	.0610* (1.88)	.0384 (1.16)
Education	.0648** (12.58)	.0596** (10.90)
Tenure	.0152** (7.53)	.0152** (10.52)
Spouse Present	.1170** (3.21)	.0374 (.82)
Spouse Absent	.1583 (.95)	.1036 (.67)
Widowed	-.0737 (1.11)	-.0541 (.98)
Divorced	.1175** (2.50)	.0976* (1.93)
Separated	.0879* (1.71)	.0260 (.43)
Children	-.0151** (2.61)	-.0127** (2.57)
Region	-.1535** (6.17)	-.0724** (2.79)
Class of Worker	-.1720** (6.09)	-.0946** (3.81)
Full-Time	.0931** (3.40)	.1794** (7.13)

Table 2
(Continued)

	<u>1967</u>	<u>1977</u>
Health	-.00063** (2.81)	-.00020 (.98)
Labor Force1	-.1817** (2.61)	-.0854* (1.73)
Labor Force2	-.1921** (6.24)	-.1053** (3.33)
Labor Force3	-.1397** (5.53)	-.0675** (2.30)
Unemra	-.0071 (.99)	.0011 (.23)
Black Central-City Resident	-.1639** (5.89)	-.0568** (1.99)
Black Suburban-Ring Resident	-.2651** (4.76)	.0469 (1.03)
White Central-City Resident	.0227 (.85)	.0634** (2.40)
$\bar{R}^2$	.41	.36
s_e	.3611	.3593
F	41.77	34.39
N	1232	1247

See Notes under Table 1.

year of education from 3.8 percent in 1967 and 3.6 percent in 1977 to 6.5 percent and 6.0 percent respectively. The pattern of the coefficients on the marital status dummy variables does not change. The coefficients on the linear children variable are highly significant for both years.

The coefficients on region and class of worker are all negative and highly significant, although both coefficients fall by approximately fifty percent from 1967 to 1977. The coefficients on whether the female works full-time are positive and highly significant for both survey years. As before, the coefficients on the size of the labor force are highly significant and enter with the correct negative sign.

Clearly, the most striking difference between the two sets of results is the estimated coefficients on the race/residential location dummy variables. In 1967, black central-city female residents receive 16.4 percent less and black suburban-ring female residents receive 26.5 percent less than white suburban-ring female residents. We interpret these results to mean that we have a 16.4 percent wage disadvantage for being black but a 10.1 ($26.5 - 16.4$) percent wage advantage for central-city location. In 1977, black central-city female residents receive 5.7 percent less and black suburban-ring female residents receive an insignificant 4.7 percent more than their white suburban-ring counterparts.¹³ Thus, the general pattern of the results in Table 2 is consistent with the voluminous literature on race and sex discrimination: when studies do not control for job assignment or academic rank or occupation-industry, the estimated ceteris paribus difference between female (black) and male (white) wages increases.

In terms of the question we pose at the beginning of this paper, we conclude: black central-city residents experience a wage advantage in 1967 and a wage penalty in 1977. The results in Tables 1 and 2 indicate that in 1967 black women who live in central cities experience a wage advantage of between 4.4 percent ($t = .85$) and 10.1 percent ($t = 1.94$) relative to their sisters who live in suburban-rings of metropolitan areas. In 1977, however, black women who live in central cities experience a wage penalty of between 8.3 percent ($t = 1.86$) and 10.4 percent ($t = 2.26$).

EMPIRICAL STRATEGY #2

A. Controlling for Occupation and Industry

Table 3 contains the semi-logarithmic regression coefficients and summary statistics for the second empirical strategy we employ to estimate the 1967 and 1977 wage structure for black female workers and white female workers. We assume, in the first empirical strategy, that race operates independently in its effect on wages. That is, the effect of the race/residential location classifications is a shift in the wage function along the Y-axis. In this second formulation, we assume that race operates on the market valuation of the characteristics of the black workers and white workers and that location operates independently in its effect on wages.

An F-test calculation on the results in Table 4 for the joint test of significance indicates that we can reject at the .01 level for both study years the null hypothesis that the wage functions for black female workers and white female workers are the same. A glance at the summary

Table 3
Empirical Strategy #2

	<u>1967</u>		<u>1977</u>	
	<u>Black</u>	<u>White</u>	<u>Black</u>	<u>White</u>
Constant	1.0617	.9295	1.8988	1.1905
Experience	.0031 (.15)	-.0413** (2.59)	-.0379 (1.19)	-.0145 (.63)
Experience**2/100	-.0197 (.40)	.1087** (2.73)	.0599 (1.11)	.0204 (.51)
Education	.0290** (3.22)	.0409** (5.58)	.0457** (4.12)	.0311** (4.33)
Tenure	.0122** (4.22)	.0108** (4.23)	.0096** (3.94)	.0142** (8.21)
Spouse Present	.0163 (.27)	.1007** (2.37)	.0906 (1.14)	.0218 (.41)
Spouse Absent	.2723 (.82)	.0479 (.27)	.2072 (1.15)	.1327 (.53)
Widowed	-.2464** (2.66)	.1032 (1.21)	.0347 (.38)	-.0226 (.35)
Divorced	-.0016 (.01)	.1258** (2.30)	.0978 (1.13)	.0769 (1.31)
Separated	.0591 (.86)	.0114 (.14)	.0917 (1.04)	-.0546 (.64)
Children	-.0018 (.25)	-.0138* (1.73)	-.0082 (1.27)	-.0032 (.45)
Region	-.1713** (4.61)	-.0889** (2.90)	-.1741** (3.67)	-.0568** (1.88)
Class of Worker	-.0761 (1.35)	-.0518 (1.07)	-.1159** (2.07)	.0067 (.18)

Table 3
(Continued)

	<u>1967</u>		<u>1977</u>	
	<u>Black</u>	<u>White</u>	<u>Black</u>	<u>White</u>
Full-Time	-.1108** (2.34)	.0422 (1.23)	-.0632 (1.21)	.1612** (5.40)
Health	-.00077** (2.02)	-.00057** (2.26)	-.00024 (.67)	-.00035 (1.51)
Labor Force1	-.2124* (1.89)	-.1581** (1.96)	-.0312 (.31)	-.0730 (1.36)
Labor Force2	-.1499* (2.86)	-.1806** (5.14)	-.000068 (.00)	-.0918** (2.64)
Labor Force3	-.1025* (2.63)	-.1588** (5.33)	.0740 (1.31)	-.0686** (2.11)
Unemra	-.0294** (2.06)	.0033 (.43)	-.0023 (.33)	.0042 (.76)
Central-City Resident	.0562 (1.14)	-.0055 (.22)	-.0640 (1.50)	.0481* (1.91)
$\bar{R}^2$	.60	.40	.51	.43
s_e	.3174	.3313	.3194	.3338
F	19.94	14.24	11.39	17.95
N	457	775	384	863

See Notes under Table 1.

statistics reveals that we explain a much larger proportion of the variation in log wages for black females than we do for white females. Although the statistical significance of the results suffers because of the reduced sample size, the results, nonetheless, indicate once again that a reasonably well-specified human capital model can explain a substantial amount of the variation in observed wages.

As before, these results suggest that the number of years on the current job is a superior explanatory variable relative to the experience and the square of experience terms. The coefficients on the number of years of schooling completed are all highly significant and indicate an increase in the rate of return to schooling for black females from 1967 to 1977 but a decrease in the rate for white females. Only three of the twenty marital status dummy variables coefficients are estimated with any precision. Appendix A indicates, however, that eight of these categories have mean values less than 5 percent of their respective samples.

The children variable exhibits an interesting and very plausible pattern. According to our estimates, the 1967 coefficients on the number of children variable is insignificant for black females but significant for white females. Since black women are probably less likely to drop out of the labor market or reduce their hours of work when they have children, we do not associate a wage differential with this variable. White women, on the other hand, are more likely to discontinue their present labor market experience when they have children; the estimated coefficient on the children variable reflects this difference. In 1977, when both racial groups are no longer in their prime child-bearing years, the coefficient estimates are not statistically significant.

We see that living in a southern state has a large and highly significant depressing effect on the wages of black females and white females in 1967, but a moderate depressing effect on wages for both groups in 1977. The estimated coefficients on the duration of health limitations and size of the labor force are all highly significant in 1967. Only two of these eight coefficients are statistically different from zero in 1977.

The results in Table 3 for the effect of central-city residential location are consistent with the results we obtain when we employ the first empirical strategy. In 1967 black female central-city residents experience a wage advantage of 5.6 percent ($t = 1.14$) while in 1977 these same residents experience a wage penalty of 6.4 percent ($t = 1.50$).

We can decompose the gross difference in average hourly wages between black female workers and white female workers into (1) differences in the characteristics of black female workers and white female workers and (2) differences in the market valuation of these characteristics. We find that most of the observed wage differential results because of differences in the mean characteristics of black and white female workers. In 1967 black females would be better off by 1.5 percent if they were paid as if they were white while in 1977 black females would be worse off by 1.0 percent. 14

B. No Controls for Occupation and Industry

Table 4 presents the regression coefficients and summary statistics for the second empirical strategy when we no longer control for occupation and industry. As mentioned previously, when we omit the occupation-industry variables, the explanatory power of the wage structure falls; the size of the other coefficient estimates generally increases; and the estimated t-statistics also generally increase. An F-test calculation indicates that we can reject at the .01 level the null hypothesis that the coefficient estimates on the omitted occupation and industry dummy variables are (all) equal to zero. Another F-test calculation for the joint test of significance indicates that we can also reject at the .01 level the null hypothesis that the wage structures for black female workers and white female workers are the same.

Since the pattern of the coefficients mirrors what we observe in Table 3, we will turn our attention to the discussion of discriminatory penalties for residential location and for race. When we no longer control for occupation and industry, we see that in 1967 black female central-city residents experience a wage advantage of 11.7 percent ($t = 2.18$) while in 1977 these same residents experience a wage penalty of 7.2 percent ($t = 1.62$).

Table 4
Empirical Strategy #2

	<u>1967</u>		<u>1967</u>	
	<u>Black</u>	<u>White</u>	<u>Black</u>	<u>White</u>
Constant	.3551	.3047	1.5061	.6576
Experience	-.0165 (.76)	-.0454** (2.73)	-.0393 (1.24)	-.0166 (.68)
Experience**2/100	.0238 (.45)	.1216** (2.93)	.0561 (1.04)	.0236 (.56)
Education	.0607** (7.03)	.0672** (10.53)	.0509** (4.93)	.0647** (9.93)
Tenure	.0143** (4.58)	.0158** (5.99)	.0093** (3.77)	.0179** (10.05)
Spouse Present	.0732 (1.11)	.1271** (2.80)	.1256 (1.51)	.0259 (.46)
Spouse Absent	.3897 (1.07)	.0459 (.25)	.2300 (1.22)	.0318 (.12)
Widowed	-.2207** (2.20)	.0600 (.66)	.0360 (.22)	-.0786 (1.13)
Divorced	.0472 (.58)	.1350** (2.31)	.1354 (1.50)	.0942 (1.50)
Separated	.0664 (.88)	.0634 (.77)	.1153 (1.25)	-.0189 (.20)
Children	-.0072 (.91)	-.0213** (2.52)	-.0159** (2.40)	-.0105 (1.39)
Region	-.2392** (6.08)	-.0881** (2.71)	-.2240** (4.67)	-.0279 (.87)
Class of Worker	-.2945** (7.00)	-.0690* (1.82)	-.2276** (5.36)	-.0507* (1.65)

Table 4
(Continued)

	<u>1967</u>		<u>1977</u>	
	<u>Black</u>	<u>White</u>	<u>Black</u>	<u>White</u>
Full-Time	.0117 (.26)	.1195** (3.43)	.0515 (1.09)	.2036** (6.73)
Health	-.00071* (1.86)	-.00067** (2.45)	-.00014 (.39)	-.00022 (.87)
Labor Force1	-.2771** (2.26)	-.0870 (1.02)	.0213 (.20)	-.0908 (1.57)
Labor Force2	-.1580** (2.83)	-.1909** (5.12)	.0056 (.089)	-.1099** (2.65)
Labor Force3	-.0995** (2.39)	-.1493** (4.68)	.0685 (1.20)	-.0927** (2.65)
Unemra	-.0244 (1.58)	-.00058 (.07)	-.0030 (.40)	.0043 (.73)
Central-City Resident	.1172* (2.18)	.0065 (.24)	-.0716 (1.62)	.0532** (1.97)
$\bar{R}^2$	.51	.30	.44	.33
s_e	.3515	.3584	.3381	.3631
F	25.83	18.29	16.89	23.38
N	457	775	384	863

See Notes under Table 1.

When we decompose the gross difference in average hourly wages between black female workers and white female workers into (1) differences in the characteristics of black female workers and white female workers and (2) differences in the market valuation of these characteristics, we find that the discriminatory penalty for race is 20.2 percent in 1967 and 9.1 percent in 1977.

CONCLUSIONS

We observe a dramatic reduction in the estimated racial wage differential from 1967 to 1977. When we control for occupation and industry, the estimated coefficient on the black-white dummy variable falls from a statistically significant -6.2 percent in 1967 to an insignificant 1.7 percent in 1977. When we do not control for occupation and industry, the estimated coefficient falls from a statistically significant -18.6 percent in 1967 to a significant -5.8 percent in 1977 (See footnotes 12 and 13). These results mirror the continuing narrowing of observed wage differentials for black females and white females. The nonwhite to white full-time, full-year wage and salary ratio rises from .765 in 1967 to .954 in 1977, which implies a wage differential of 30.7 percent in 1967 and 4.8 percent in 1977. Note that the analysis does not support the conclusion that discrimination against black females no longer exists; it demonstrates merely that the severity of discrimination against black female workers is neither more nor less than the severity of discrimination against white female workers.

This study yields one finding which is a significant, new contribution to the literature on racial discrimination in urban labor markets: central-city black females experience a wage advantage in 1967, but a wage disadvantage in 1977. This result is invariant to the empirical strategy we employ.

At first glance the results appear inconsistent; nonetheless, they are broadly consistent with other evidence on the spatial location hypothesis. As mentioned previously, Duran Bell, Jr., using the 1967 Survey of Economic Opportunity, finds that nonpoor central-city black female residents have a wage advantage relative to their suburban-ring black female counterparts. Using other indicators of economic performance, Bennett Harrison, after summarizing the extant evidence on the spatial location hypothesis, concludes that "[O]ur own evidence here certainly cannot be construed as strongly supporting the proposition that suburban nonwhites enjoy relatively greater economic well-being than nonwhites in the central city."¹⁵ All of the authors cited in Harrison's paper use data from the decade of the 1960s.

When we turn to more recent data, we see that Richard Price and Edwin S. Mills, using data from the 1978 Current Population Survey, find that black males experience a central-city residence penalty of between 5.7 percent and 8.6 percent, estimates which are consistent with the results we report for black women for 1977.

In closing, let us suggest one (of many) possible explanations for our results that black female central-city residents have a wage advantage in 1967 but a wage disadvantage in 1977. We observe, first, Bell's

contention that black suburban women (SEO) earned less than their nonpoor city counterparts because they hold lower status jobs. Thus, we could expect to observe a 1967 wage advantage in the NLS survey of black central-city residents for the same reason.

Second, we assume that federal and state anti-discriminatory efforts in housing (Title VIII of the 1968 Civil Rights Act) and employment (Title VII of the 1964 Civil Rights Act) have been effective in enhancing economic opportunities and outcomes for black Americans. We assume, further, that black female workers who would choose to live in suburban areas are highly motivated and have high innate ability, a hypothesis predicted in the migration literature. Thus, if suburban-ring employers seek to reward capable female workers (because of Affirmative Action, say), many of these women would be black suburban-ring residents. Thus, we could expect to observe a 1977 wage advantage for black suburban-ring residents. 16

Footnotes

1. Acceptance or rejection of the hypothesis that economic outcomes are independent of residential location generally leads to a discussion of two alternative strategies to improve the economic welfare of black Americans: geographical dispersal or central-city development. The debate on strategies should not be drawn this sharply. Policies to improve the economic status of black Americans — job training, enforcement of fair housing statutes, subsidizing transportation, urban enterprise zones — should, of course, be expanded or concentrated until the marginal gain from the last hundred thousand dollars spent, say, should be the same for each policy. In practice, however, the determination of marginal yields for different policies is still in an embryonic stage.
2. This sample was screened from a multi-stage probability sample drawn by the U.S. Bureau of the Census from 235 primary sampling units to represent the civilian noninstitutionalized population in the United States. There was an over-sample in enumerating districts with a high proportion of nonwhites. This sample will be biased to the extent that women in the 30 to 44 age group in 1967 are distributed differently from the civilian noninstitutionalized population. Since there is no method of determining whether the nonrespondents (deaths, noninterviews) in 1977 are randomly distributed, the sample in 1977 is much less representative of the civilian population than the sample in 1967.
3. In 1980, the proportion of families headed by women was 40 percent for blacks and 12 percent for whites.
4. Since the focus of this paper is on wages of female workers, I will not review the voluminous literature on other aspects of the spatial location debate.
5. See Bell's article in Patterns of Racial Discrimination, Vol. I: Housing. Bell also uses the earnings of the husband as another performance measure.
6. This is surprising because Vrooman and Greenfield in their 1978 paper, which uses the same data base, report results for white women.
7. We follow the empirical framework developed in a recent paper by Richard Price and Edwin S. Mills. We do not employ a third strategy, which is to estimate separate (four) regression equations for each race/residential location grouping, because of the small number of suburban black women in the NLS.
8. Ronald Oaxaca introduced to the literature this technique for measuring discrimination.

9. When the independent variable is a dummy variable, $(\exp(c) - 1)$ the percentage effect of the dummy variable is equal to 100 (except $(c) - 1$). We do not present the correct estimates in the body of the paper. Note that in order for the "nice" properties of ordinary least squares to hold, the error term in the multiplicative form of the model must be log normal.
10. See, for example, the article by Mincer and Polachek and the reply by Sandell and Shapiro.
11. We do not report the results for the occupation and industry dummy variables for reasons of economy. These results may be obtained from the author.
12. When a single race variable is entered, the coefficient estimate is $-.062$ with a t-statistic of 2.61 for 1967 and $.017$ with a t-statistic of .67 for 1977.
13. When a single race variable is entered into the regression, the coefficient estimate is $-.1861$ with a t-statistic of 7.86 for 1967 and $-.0583$ with a t-statistic of 2.29 for 1977.
14. The particular decomposition we use weights the difference in the estimated coefficients by the vector of black characteristics. These estimates show much better off a black would be if she were paid as if she were white.
15. See Harrison's article in Patterns of Racial Discrimination, Vol.I: Housing.
16. Although 636 of the females earn wages in both 1968 and 1978, we do not report results from a wage change model because we observe too few residential changes. Only 4 black females who reside in suburban areas in 1968 reside in the central city in 1978 while 19 black females who reside in the central city in 1968 reside in suburban areas in 1978.

Appendix A

Means and Standard Deviations of the Variables

	<u>1967</u>			<u>1977</u>		
	<u>Total</u>	<u>Black</u>	<u>White</u>	<u>Total</u>	<u>Black</u>	<u>White</u>
LnWages	.6481 (.4702)	.5003 (.5014)	.7353 (.4278)	1.3656 (.4491)	1.2872 (.4521)	1.4005 (.4436)
Experience	20.2192 (5.2526)	20.5514 (5.2676)	20.0232 (5.2372)	28.7755 (5.1466)	29.3281 (5.3207)	28.5295 (5.0509)
Experience**2	436.3815 (212.8167)	450.0481 (219.4755)	428.3226 (208.5144)	854.4932 (298.2566)	888.3750 (315.6579)	839.4171 (289.0928)
Education	11.3141 (2.6906)	10.8600 (2.7922)	11.5819 (2.5936)	12.0938 (2.4988)	11.4818 (2.6658)	12.3662 (2.3721)
Tenure	5.1810 (5.5553)	5.5274 (5.6835)	4.9768 (5.4717)	8.5477 (7.6443)	9.3490 (7.8233)	8.1912 (7.5406)
Spouse Present	.6713 (.4699)	.6149 (.4872)	.7045 (.4566)	.6439 (.4790)	.5234 (.5001)	.6976 (.4596)
Spouse Absent	.0041 (.0636)	.0022 (.0468)	.0052 (.0717)	.0048 (.0692)	.0104 (.1017)	.0023 (.0481)
Widowed	.0325 (.1773)	.0438 (.2048)	.0258 (.1587)	.0874 (.2825)	.1146 (.3189)	.0753 (.2641)
Divorced	.0966 (.2955)	.1028 (.3041)	.0929 (.2905)	.1403 (.3475)	.1641 (.3708)	.1298 (.3363)
Separated	.0804 (.2720)	.1575 (.3647)	.0348 (.1835)	.0609 (.2393)	.1354 (.3426)	.0278 (.1645)
Children	2.3969 (2.0653)	2.8621 (2.3621)	2.1226 (1.8149)	3.0305 (2.3503)	3.8490 (3.0553)	2.6663 (1.8455)
Region	.3279 (.4696)	.4726 (.4998)	.2426 (.4289)	.3392 (.4736)	.5703 (.4957)	.2364 (.4251)
Class of Worker	.7914 (.4065)	.7068 (.4557)	.8413 (.3656)	.7346 (.4417)	.6719 (.4701)	.7625 (.4258)

Appendix A

(Continued)

	<u>1967</u>			<u>1977</u>		
	<u>Total</u>	<u>Black</u>	<u>White</u>	<u>Total</u>	<u>Black</u>	<u>White</u>
Full-Time	.8149 (.3885)	.8228 (.3823)	.8103 (.3923)	.7626 (.4138)	.8099 (.3929)	.7416 (.4380)
Health	11.0982 (46.5272)	10.4158 (44.1113)	11.5006 (47.918)	11.0168 (49.6399)	9.8958 (47.5892)	11.5156 (50.5446)
Labor Force1	.0252 (.1567)	.0241 (.1534)	.0258 (.1587)	.0690 (.2535)	.0417 (.2001)	.0811 (.2732)
Labor Force2	.2200 (.4144)	.1904 (.3930)	.2374 (.4258)	.3128 (.4638)	.3021 (.4598)	.3175 (.4658)
Labor Force3	.4123 (.4925)	.4070 (.4918)	.4155 (.4931)	.3897 (.4879)	.4375 (.4967)	.3685 (.4827)
Unemra	4.1933 (.3885)	4.0788 (1.1527)	4.2608 (1.6298)	7.0125 (2.4897)	6.8594 (2.6155)	7.0806 (2.43011)
Black Central- City Resident	.3304 (.4705)	.8906 (.3125)		.2430 (.4291)	.7891 (.4085)	
Black Suburban- Ring Resident	.0406 (.1974)	.1094		.0650 (.2465)	.2109	
White Central- City Resident	.3133 (.4640)		.4981 (.5003)	.2318 (.4221)		.3349 (.4722)
White Suburban- Ring Resident	.3157 (.4650)		.4997 (.4986)	.4603		.6651

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