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ABSTRACT

This paper tests a crucial assumption in the debate between those who advocate ghetto development and those who advocate ghetto dispersal: Are the suburban jobs held by urban poverty-area residents economically superior to the jobs held by those who both live and work in the poverty area? The motivations of poverty-area residents for commuting to a suburban job are analyzed and tested using microeconomic data from the 1970 Census Employment Survey. The analysis finds no empirical support for the hypothesis and implied policies that suburban jobs provide superior pecuniary economic advantages for poverty-area residents.

SECTION I

Professor John Kain has argued that urban poverty-area residents are artificially restricted to urban job markets by inadequate transportation facilities and racial discrimination in suburban housing markets, with consequent increases in their unemployment rates and decreases in their wage rates.[1] By promoting "reverse commuting" from the inner city to the suburbs and by desegregating suburban residential zones, Kain hopes to overcome the locational "mismatch" between superior (and expanding) suburban job opportunities and a surplus of central city labor. Kain's analysis provided the catalyst for numerous debates important for public policy. Should ghettos be dispersed or developed? Is the economic viability of the central city declining relative to that of the suburban ring? Should metropolitan transportation systems be developed to improve the economic welfare of poverty-area residents?

The evidence presented in this paper will not concentrate on the relative merits of the proposed public policies.[2] Instead, one assumption both crucial and common to all those who engaged in these policy debates will be tested: Are the suburban jobs held by urban poverty-area residents economically superior to the jobs held by those who both live and work in the poverty areas? Even some of those who advocate ghetto development rather than dispersal have assumed that suburban jobs represent superior alternatives, at least for whites, if not for Blacks.[3] Until now, lack of data has prevented empirical verification, but the recent Census Employment Survey,[4] by reporting both the residential and employment location for individual poverty-area

residents, as well as their travel time and commuting costs, provides the requisite data for testing the assumption.

There are at least three explanations of labor market behavior that are consistent with the existence of differentials between the wages received by those poverty-area residents who commute to the suburbs and those who work in the poverty-area. The first, due to Kain, assumes a labor market which is spatially segmented. High transportation costs and housing segregation prevent poverty-area residents from competing away the economic advantage of suburban employment. The second explanation of wage differentials assumes that a suburban wage offer must be higher than a comparable urban offer to compensate the worker for the inconveniences and costs of the commute. Though there is no market segmentation in this case, a shortage of workers in the suburbs compels firms to offer the pecuniary incentives sufficient to induce commuting from the core (nonpecuniary job amenities aside). The third explanation is that of job rationing. Urban labor markets do not provide enough employment opportunities for poverty-area residents, and market imperfections (such as minimum wage laws, job security rules, etc.) prevent the bidding down of wages. Thus, the poverty-area resident who cannot secure local employment is forced to commute, even if the wages paid by suburban firms fail to provide compensation for the travel costs. Commuting and the acceptance of a lower net wage is the only alternative to unemployment in this disequilibrium model of the labor market. The last two explanations for commuting correspond to similar ones in the international capital and regional migration literature where one view emphasizes demand

factors (locational movements induced by favorable relative price changes elsewhere) and the other, supply factors (movements induced by unfavorable local employment opportunities).

This paper will examine the available data to determine not only if the hypothesis of suburban job superiority is valid, but also which model of suburban commuting is applicable. While suburban job superiority is a necessary condition for both the Kain model and the demand model to be valid, it is not sufficient. Suburban wages may exceed poverty-area rates, but by an amount insufficient to compensate for commuting. In this case, residential relocation or improved transportation facilities would nevertheless allow more efficient exploitation of the wage differential by poverty-area residents. If, however, no systematic positive differential in wage rates between suburb and poverty area exists, even without commuting cost considerations, then neither of these models will be operative and no presumption that residential relocation would be economically beneficial could be made (though, of course, considerations other than wage offers might imply the need for residential desegregation).

Whether suburban jobs offer a wage advantage can be determined by estimating, for each poverty-area resident who works in the suburban ring of the metropolitan area, an imputed wage-- the wage he would earn if he could have chosen, instead, employment within the poverty area at prevailing wages. The estimated wage could then be compared with the wage actually received. This is the procedure followed in this paper.

To estimate each suburban worker's imputed wage, a wage equation was estimated for those who both live and work in the urban poverty areas of Cleveland, Detroit, and St. Louis.[5] Such an equation measures the contribution of each of several personal characteristics to an individual's wage for poverty-area labor. A reduced form wage equation is appropriate since it is the prediction of an individual's wage, given his (exogenous) personal characteristics, that is desired. The parameter estimates from the wage equation were then applied to the personal characteristics of each suburban worker to provide an imputed wage, which was then compared to his realized wage.

The estimated wage equation takes the form:

$W_p(j) = \Sigma a_i X_{pi}(j)$, where

$W_p(j)$ is the real hourly wage of the jth individual who lives and works in the urban poverty area;

$X_{pi}(j)$ is the value of the ith personal characteristic of the jth individual; and

a_i is an element in a vector of constants.

The suburban worker's imputed wage, IW(j), is then:

$IW(j) = \Sigma a_i X_{si}(j)$, where

$X_{si}(j)$ is the value of the ith personal characteristic of the jth individual who lives in the urban poverty area and commutes to the suburban ring to work.

The difference between an individual's realized suburban wage and this imputed wage represents an upper bound on the pecuniary advantage of suburban employment. To ascertain whether suburban wages more than compensate for commuting burdens, the upper bound must be adjusted for additional travel time and costs incurred by suburban workers. An

intermediate estimate of the suburban, poverty-area wage differential is achieved by reducing the upper bound by an estimate of the cost of commuting in excess of what the individual suburban worker would incur if he worked in the poverty area. This commuting cost adjustment was calculated by subtracting the mean out-of-pocket hourly commuting cost of poverty-area workers in the same city from the individual suburban worker's hourly commuting cost. A lower-bound differential is calculated by reducing the intermediate differential by a travel time adjustment (the multiplicative product of : (a) the suburban worker's hourly wage, and (b) the difference between the suburban worker's hourly travel time and the mean hourly travel time of poverty-area workers in the same city).

Section II will present the results of regressions used to estimate imputed wages; Section III analyzes the pattern of suburban, poverty-area differentials.

SECTION II

Specification of the imputed wage equation was constrained by the data on individual characteristics collected by the Survey. The following personal characteristics were chosen as exogenous, explanatory influences on wages: race, sex, city of residence, years of education, occupational and industrial classification of employment, completion of training program, job tenure, family and health status, and age. Economic theory implies that persons of equal abilities in the same occupation should receive the same wages, which suggests that separate regressions should be run for each occupation. Industrial factors should not, in strict neoclassical theory, influence wages since

interindustry wage discrepancies for the same work should be competed away by individual mobility. However, industrial influences must bear the burden in this study of serving as a proxy for union membership and perhaps other interferences with competitive forces[6]; the Survey did not query individuals about union affiliations. In addition, the inference that two individuals in different industries but the same occupation perform similar tasks and, thus, could compete away any wage differentials that might be misleading, since it was necessary to aggregate all jobs into seven occupations.[7] At so high a level of aggregation, the abilities required to perform similarly classified jobs may be quite dissimilar.

Variables measuring age, job tenure, health status, vocational training, and education are all included to capture differences in "human capital" or marginal productivity among individuals. Imperfections in the labor market, such as racial discrimination or segmentation, suggest that the race and sex of an individual might have a profound influence on wages. Lastly, regional segmentation might allow the labor markets in the three chosen metropolitan areas to remunerate unequally for equivalent jobs.

The functional form chosen to capture the influences of the various personal characteristics on real wages is a variation on analysis of variance regression models.[8] If the model were strictly an analysis of variance, all characteristics would be dummy variables. In our study, however, age and job tenure were included as continuous variables.[9] In order not to constrain the difference in wage determination between sexes to be merely a shift in a constant, full interactive effects between sex and each of the other explanatory variables were provided

for by restricting our sample to males. Full interactive effects between race and all other explanatory variables were similarly allowed for by separate estimates for Black and white samples (as well as the pooled sample). All individual characteristics other than race and sex were assumed to affect wages independently.

Table 1 presents (ordinary least squares) regression results only for those samples that included both Blacks and whites. Regression A is for the entire male sample, ages 21 to 64. Regression B is for a sample that includes only those employed in the following occupations (BC occupational group): operatives, machinists, craftsmen, transport workers, and laborers. Regression C is the same functional form but for a sample that includes only clerical, sales, and service occupations (WC occupational group). Regression D is for a sample that includes only operatives. Regressions B, C, and D were estimated to test for interactive effects between one's occupation and other personal characteristics. The constant in all the regressions refers to an individual who is white, has not completed a training program, lives in Detroit, has completed less than eight years of education, is not the head of a household, whose industry is wholesale or retail trade, and for whom health has not been a problem. For Regression A, the constant is for individuals whose occupational group is BC; for Regressions B and D, the constant refers to individuals whose occupation is transport worker; for Regression C, to service worker. Table II defines the variables cited in Table I.

Only results from the racially pooled samples are presented in Table I because tests of the equality of the set of coefficients common to regressions performed on Blacks and whites separately failed to

reject the hypothesis that the set of coefficients were the same. Similarly, tests performed separately on Regressions B through D failed to reject the hypothesis that the set of coefficients were identical to those estimated for the occupationally pooled sample. Since allowing for full interactive effects between both race and occupation and all the other exogenous variables proved not to matter significantly, discussion will concentrate on Regression A--a regression for a sample that is pooled with respect to both races and occupations.

One cannot reject the hypothesis that race does not matter, though the coefficient on the racial dummy does generally enter the equations negatively. However, the magnitude of the negative coefficient is small compared to the absolute value of the magnitude of the other coefficients, so that even if it were significantly different than zero, no large difference in wage rates due to race would be indicated. This conclusion is reinforced by the fact that allowing full interactive (i.e. separate regressions) effects between race and the other explanatory variables does not significantly change the set of parameter estimates. It should be noted that a lack of evidence of discrimination in this sample need not be inconsistent with findings to the contrary in other studies of urban labor markets. The comparison in this paper is between Blacks and whites, all of whom live in urban poverty areas. There may well be no significant discrimination in the labor markets among these individuals, whereas Blacks who compete with whites residing elsewhere might suffer considerably.

Table III further suggests that the sample may not be representative of the entire labor market by providing the average sample values of

wages by race. Whereas in more general cross-sections of Blacks and whites, the averages would be significantly different, in this sample, the average wage rates of Blacks and whites are very similar. In fact, standard "t" tests cannot reject the hypothesis that, for those individuals who both work and live in the urban poverty areas, Blacks earn no less on average than whites; a similar finding applies to comparisons between races of those who commute to the suburbs for work.

Table IV provides evidence that, in each of the three cities, a higher percentage of the Blacks commute to the suburbs than of the whites --suggesting that Blacks are not systematically excluded from suburban employment opportunities as Kain suggested. The similarity in economic opportunity and outcome across races for residents of these poverty areas is known not to hold for more general samples of Blacks and whites in the United States and should moderate any inclination to generalize the apparent lack of discrimination in the observed labor markets to any other circumstance.

As one would expect, tenure on one's job adds positively to wage rates as does completion of a training program (both parameter estimates are significantly different than zero, at the five percent level[10]). Of the city dummies, Cleveland does seem to exhibit significantly lower real wages, all else equal, and the size of the shortfall is relatively large. Bad health also lowers wages. A high school diploma contributes positively (and substantially) to one's wages.

The contribution of industry dummies to relative wage rates is most likely due to differential union impacts and the difference in skills required for the same occupational status across industries.

Not only are the industrial parameter estimates significantly different than zero, but more importantly, they are substantially positive in most cases (relative to wholesale and retail worker wages). The manufacturing (both durable and nondurable), professional and entertainment, and construction industries contribute over fifty cents per hour, all other personal characteristics, equal; educational service workers earn an additional $1.17. As Bennett Harrison has emphasized, employment in public administration is also a significant boost to wages, a factor particularly important to Blacks discriminated against in other labor markets.[11] Once again, the size of the contribution is substantial--almost seventy cents per hour. The impact of the transport and public utilities industrial grouping is also large, possibly due in part to a strong union influence in that sector.

It should also be noted that individuals in the clerical, service, and sales occupational grouping (WC) earn significantly less, than those in the BC grouping, perhaps due once again to their lack of systematic unionization. Interactions among education, race, and training were tested, but none provided a significant influence on wage rates.

SECTION III

Regressions A through D were used to analyze suburban, poverty-area differentials by subtracting from each suburban worker's realized wage his imputed wage, constructed by applying the estimated parameter values to his personal characteristics. Since, as previously stated, the set of coefficients of regressions B through D did not differ significantly from the set of coefficients for the occupationally

pooled sample, one should expect that the pattern of wage differentials would not be sensitive to the choice of regression. Indeed, wage differentials were not sensitive to the regression choice and therefore only the results of using Regression A will be examined.

Table V presents the results for imputed wages constructed from the parameter estimates of Regression A. For the occupationally pooled sample, and for occupational, racial, and city subsamples, three different suburban, poverty-area wage differentials, as described in Section I, are analyzed:

(1) $UBD(j) = W_s(j) - IW(j)$, where

- $UBD(j)$ is the upper-bound differential;
- $W_s(j)$ is the real hourly wage of the jth suburban worker;
- $IW(j)$ is the imputed wage of the jth suburban worker.

(2) $ID(j) = UBD(j) - (C_{jk} - C'_k)$, where

- $ID(j)$ is the intermediate differential;
- C_{jk} is hourly travel costs of the jth suburban worker who resides in poverty area k;
- C'_k is the average hourly travel costs of poverty-area workers who both live and work in poverty area k.

(3) $LBD(j) = ID(j) - (T_{jk} - T'_k)W_s(j)$, where

- $LBD(j)$ is the lower-bound differential;
- T_{jk} is the average hourly travel time of the jth suburban worker who resides in poverty area k;
- T'_k is the average hourly travel time of poverty-area workers who both live and work in poverty area k.

The upper-bound differential, UBD, corrects neither for pecuniary nor nonpecuniary commuting costs; the intermediate differential, ID,

adjusts for the amount that the out-of-pocket travel costs of the suburban worker exceed those of the average poverty-area worker[12]; the lower-bound differential, LBD, adjusts for differential travel times in a similar fashion, but evaluates the time differential at the realized wage rate of the suburban worker.[13]

An excess of an individual's realized suburban wages over his alternative poverty-area wages implies that suburban jobs are offering superior pecuniary advantages to poverty-area residents.[14] Both the demand model and the Kain model are based on the assumption of suburban job superiority. If the demand model were operative, then the data should reflect a preponderance of positive wage differentials (UBD) and an absence of negative travel compensated differentials (ID or LBD). Kain's model of spatial segmentation in urban labor markets requires only that UBD be positive.

UBD, by ignoring the additional costs of commuting, provides an upper bound on the advantages to be gained by commuting; it is the estimate most likely to support the hypothesis that suburban jobs are systematically superior for poverty-area residents. However, the data presented in Table V display no such qualitative pattern. Only slightly more than fifty percent (52.1%) of the suburban workers are earning higher wages than what they could expect to earn in a poverty-area job.[15] Less than fifty percent of the suburban workers are compensated for monetary travel costs (ID>0 for 49.6%), let alone nonpecuniary burdens (LBD>0 for 41.4%). If commuting is motivated by higher wage rates in the suburbs, it is difficult to explain why such a large proportion of the sample is not positively compensated.[16] Neither the demand model nor the Kain model is consistent with this result.

Two caveats are in order: (1) Ten miles per hour was assumed to be the average travel speed of drivers. If a more realistic twenty miles per hour were used in the calculation of ID and LBD, then the estimated out-of-pocket commuting costs of all drivers in our sample would be doubled, and the number of suburban commuters with a negative ID or LBD would be unambiguously increased. Hence, LBD is not really a lower-bound at all, but an upward-biased estimate of a differential that corrects for both pecuniary and nonpecuniary travel costs. (2) It might be supposed that if the regressions were not sufficiently accurate, residuals based thereupon might provide misleading evidence. However, identification of the more likely sources of error serve only to strengthen the qualitative nature of the evidence. Unobserved differences among individuals are, of course, not accurately accounted for by the regression analysis. If, however, suburban jobs are economically advantageous, then those who secure these jobs would most likely be the ones able to offer their suburban employers, at the given wage offer, relatively superior talent.[17] If the additional talent is unobserved, the individual's imputed wage will be underestimated and his differential overestimated. The true number of commuters who gain economically relative to poverty-area alternatives is even less than that suggested by Table V.

Though the analysis presented so far controverts uncritical acceptance of the demand model or the Kain model, it does not constitute refutation of either model. That the lower-bound wage differentials are predominantly negative might well be explained by nonwage or nonpecuniary benefits to suburban employment. Fringe benefits, promotion possibilities, or any one of a number of job amenities might be more

abundant in the suburban jobs and introduce a potentially serious upward bias in the number of truly negative lower-bound differentials. The Survey provides no data on such information, so the quantitative importance of these considerations is impossible to gauge.

The evidence from examination of UBD suggests that no systematic wage-rate improvements would accrue to Blacks merely from suburban employment. This remains true even if additional commuting burdens were reduced by either residential relocation or transit improvements. Lowered travel costs or residential relocation will, of course, benefit commuters, but will not be sufficient to make suburban employment more remunerative than poverty-area employment. There can be no presumption that public funds designed to improve the economic welfare of poverty-area residents are better spent to promote emigration from poverty areas rather than for ghetto development. Over forty-seven percent of the suburban commuters have negative wage differentials even before travel expenses are considered (UBD); no transportation or residential relocation program can reduce this number. Expansion of poverty-area employment opportunities has the potential of benefiting commuters who do not earn higher wages in the suburbs and of upgrading the poverty-area economy.

A proper choice of policy would, of course, require comparing the benefit/cost ratio of a public program designed to reduce commuting expenses to a similar ratio for the alternative of expanding employment opportunities in the poverty area itself. As will be discussed below, the average size (in absolute value) of the upper-bound differential is higher for those individuals with positive differentials than for those individuals with negative ones. Though the number of persons

who do gain from commuting is relatively small, it might be that the relatively larger size of those gains would justify investments in intra-metropolitan transportation facilities. The optimal policy may well require a mixture of several programs.

Of the three explanations offered for the existence of suburban-poverty area wage differentials, the supply model is consistent with the greatest percentage of the data. This model assumes that market imperfections prevent poverty-area residents from obtaining employment at prevailing wages and from offering their labor at slightly reduced rates, as would be possible in a perfectly functioning labor market. To secure employment, individuals are forced to commute to the suburbs without full compensation for the commuting burden.

Wage differentials occur in a spatially unified labor market where there are multiple centers of employment opportunities. If a sufficiently large number of potential workers live near the available jobs, then no employer will be compelled to induce commuting via travel-compensating wage increases. Then, poverty-area residents who are "rationed" out of jobs near their homes will be forced to commute and bear the burden of the travel costs. This model would predict no systematic uncompensated wage differential (UBD) and a preponderance of negative travel-compensated differentials (ID and LBD). The supply model, then, seems to emerge as the most appropriate model of urban labor market behavior in the three cities being studied.

An alternative to the three models discussed here would be to assume that the labor markets are operating perfectly and to use the data to infer the size of particular economic parameters. If the urban labor markets were efficient then there could be no discrepancy

between the travel-adjusted wages offered to poverty-area residents in different locations of the same metropolitan region. If a suburban employer needs to attract workers from the core, UBD will be sufficiently positive so that an accurately measured LBD will be zero. Poverty-area residents would then be indifferent to accepting employment in the poverty area or in the suburban ring. The magnitude of an observed negative differential, for example, could be taken as a measure of the value the individual places on additional job amenities. Alternatively, a positive ID or LBD could be taken as a measure of the amount by which realized wages have underestimated the value commuters actually place on their time. The value of time actually used in utility maximization would be that value which reduces the observed differential to zero. Data at the present level of aggregation cannot discriminate between the procedure of assuming equilibrium to infer the size of economic magnitudes or assuming disequilibrium to infer the motive of observed mobility.

More detailed knowledge of individual circumstances might reveal that either one or more of the models were operating simultaneously in different submarkets. Closer examination of various occupational, racial, and city subsamples of suburban workers that are available, however, did not successfully identify groups for whom the qualitative pattern exhibited in Table V is seriously altered. Several types of tests were chosen to examine the sensitivity of the residual pattern to the subsample chosen. Separate regressions were estimated for each occupational, racial, and city subsample. As discussed in Section II, tests failed to reject the hypothesis that the parameter estimates were identical across occupations or across races or across cities.

Additionally, analysis of variance ("F") tests applied to the pattern of residuals indicate that one cannot reject the hypothesis that the percentage of individuals in each occupational group (similarly, in each city) with positive differentials is the same. Standard "t" tests reveal that Cleveland's percentage of positive differentials is significantly higher than that of the entire non-Cleveland sample. However, the percentage of negative differentials in Cleveland is still close to fifty percent--Cleveland is only quantitatively but not qualitatively different from Detroit and St. Louis.

Though Blacks generally display a larger percentage of negative differentials for all three measures, the racial influence is noticeable only for LBD; this pattern of a larger percentage of negative LBDs for Blacks persists across all occupational groupings (the difference is significant for the occupationally pooled sample and for the operatives). Table III suggests the reasons. The sample means for both travel time and travel cost are higher for Blacks than for whites for those individuals who commute to the suburbs to work. Hence one would expect that LBD would be negative for a larger percentage of Blacks than for whites, given that the percentages for UBD are similar for the races. There is the suggestion, therefore, that improved transportation facilities would differentially aid poverty-area Blacks, and that any increase in poverty-area employment opportunities would differentially reduce black commuting.

The intermediate differential was examined to detect systematic industrial differences. Though the hypothesis that, for ID, the percentage of individuals whose differential is positive does not

differ across industries, cannot be rejected, two industrial groupings do seem to display slightly higher returns to commuting: construction, and business and personal services. The percentage of positive differentials for individuals in the construction industry is significantly different than for those not in construction for both the occupationally pooled and BC samples. The same is true for the business and personal service industry. Individuals in the nondurable manufacturing industry, among the BC occupations, seem to do significantly worse. However, there is certainly no systematic pattern across industrial groups despite these isolated differences.[18]

Table VI suggests one further aspect of suburban job opportunities. The average value of ID and UBD are positive, though the average value of LBD is negative (all of these means are significantly different from zero). The positive means for ID and UBD are to be expected. There are effective limits to how low a suburban wage--and therefore the absolute value of the size of the differential--an individual will accept. First, suburban wages less than the minimum wage will not occur (except in uncovered industries). Second, few would commute in order to earn a wage sufficiently low not to provide yearly earnings in excess of possible transfer payments. No such limits effectively limit how high suburban wages might be that an individual would accept. Randomly high wages will therefore outweigh randomly low suburban wage offers and would be a sufficient reason for the large mean value of the positive differentials. More fundamental reasons for the higher positive differentials that might exist cannot be ascertained with the present data.

SUMMARY

No empirical support for the hypothesis (and implied policies) that suburban jobs provide superior pecuniary advantages for poverty-area residents has been found. To firmly reject the hypothesis, however, data on nonpecuniary and nonwage pecuniary characteristics of jobs would be needed. The assumption of suburban job superiority led public authorities in several metropolitan areas to invest in transportation routes between poverty areas and the suburban ring to foster "reverse commuting." To the surprise of the authorities, poverty-area residents failed to utilize these routes.[19] If the analysis of this paper is applicable, the failure suggests that these opportunities might well have been no more attractive than poverty-area alternatives, rather, than as has been suggested earlier, that the ghetto residents were not aware of the suburban employment opportunities.

TABLE I.

REGRESSION RESULTS FOR INDIVIDUALS WHO BOTH LIVE AND WORK IN THE POVERTY AREA

	A.POOLED N=927	B.BC N=675	C.WC N=252	D.OP N=301
Constant+	2.678	2.675	1.603	2.985
Black	-.076 (.096)	.0039 (.114)	-.050 (.186)	-.089 (.128)
Age	-.0021 (.0047)	-.0038 (.0057)	.013 (.009)	-.017 (.006)*
Tenure	.013 (.006)*	.0085 (.0074)	.011 (.011)	.006 (.008)
Training	.215 (.106)*	.101 (.128)	.171 (.195)	.090 (.151)
Cleveland	-.327 (.106)*	-.354 (.124)*	-.127 (.213)	-.257 (.138)
St. Louis	-.189 (.115)	-.295 (.142)*	-.023 (.197)	-.637 (.163)*
E2	.226 (.122)	.152 (.140)	.265 (.254)	.275 (.151)
E3	.428 (.136)*	.278 (.159)	.569 (.278)*	.069 (.175)
WC	-.297 (.116)*			
Badhealth	-.616 (.158)*	-.720 (.207)*	-.510 (.251)*	-.437 (.257)
Agff	.889 (1.36)	.853 (1.38)		
Const	.713 (.327)*	.622 (.351)	2.12 (1.31)	.249 (.763)
Durable	.512 (.139)*	.409 (.171)*	.684 (.299)*	.577 (.218)*
Nondurable	.519 (.176)*	.422 (.217)	.787 (.318)*	.554 (.264)*

TABLE I (continued)

	A.POOLED N=927	B.BC N=675	C.WC N=252	D.OP N=301
Tpu	.820 (.195)*	.842 (.227)*	1.14 (.463)*	.510 (.553)
Buspers	-.195 (.213)	-.116 (.281)	-.385 (.333)	.516 (.380)
Fire	-.062 (.414)	-.337 (1.39)	-.073 (.439)	
Enter	.564 (.233)*	1.49 (.438)*	.376 (.304)	3.64 (1.04)*
Edserv	1.17 (.625)*		1.05 (.633)	
Pubadm	.674 (.176)*	.552 (.240)*	.885 (.267)*	.667 (.365)
Head	.203 (.128)	.340 (.161)*	-.170 (.217)	.725 (.201)*
Machinist		.579 (.221)*		
Craft		.331 (.195)		
Operative		.180 (.169)		
Labor		-.141 (.197)		
Clerk			.416 (.193)*	
Standard Error (of the regression)	1.34	1.36	1.28	1.01
Mean of Dependent Variable	3.30	3.43	3.03	3.40
Sum of Squared Residuals	1640	1203	376	289

TABLE I (continued)

Dependent variable in all regressions is $W_p(j)$, the real hourly wage;

* denotes significance at the 5% level; standard errors appear in parentheses; pooled, on all tables, refers to a sample that contains all the occupational groups; N refers to the number of observations in the sample under consideration.

+ The constant in all the regressions refers to an individual who is white, has not completed a training program, lives in Detroit, has completed less than eight years of education, is not the head of a household, whose industry is wholesale or retail trade, and for whom bad health has not been a problem. For Regression A, the constant refers to individuals whose occupational group is BC; for Regressions B and D, the constant refers to individuals whose occupation is transport worker; for regression C, to individuals whose occupation is service worker.

TABLE II. VARIABLE DEFINITIONS

$W_{pk}(j)$ =	(Nominal weekly earnings/hours of work)/ Price Index_k) for k = Cleveland, or Detroit, or St. Louis; Index used is the BLS Low-Income Workers' Budget.
Black =	1 if race is Black; 0 if not
Age =	age of the individual, in years (sample contains only males, 21-64)
Tenure =	length of tenure on current job, in years
Training =	1 if individual has completed a training program either in the armed forces, high school, trade school, a federal or state program, or an apprenticeship; 0 if not
Cleveland =	1 if the individual lives in the Clevelnad poverty area; 0 if not
St. Louis =	1 if the individual lives in the St. Louis poverty area; 0 if not
E2 =	1 if individual has completed 8-11 years of education; 0 if otherwise
E3 =	1 if individual has at least a high school degree; 0 if otherwise
Badhealth =	1 if individual has a health problem that interferes with his ability to hold a job; 0 if not
WC =	1 if individual works in one of three occupational groups: clerical, sales, or service workers; 0 if he works in one of five occupational groups: operatives, machinists, craftsmen, transport workers, laborers
Clerk =	1 if occupation is clerical or sales; 0 if otherwise
Craft =	1 if occupation is carpenter or craftsman; 0 if otherwise

TABLE II (continued)

Machinist	=	1 if occupation is mechanic, machinist, or metal craftsman; 0 if otherwise
Operatives	=	1 if occupation is operative; 0 if otherwise
Labor	=	1 if occupation is laborer; 0 if otherwise
Service	=	1 if occupation is service worker; 0 if otherwise
Agff	=	1 if industry is agriculture, forestry, or fisheries; 0 if otherwise
Const	=	1 if industry is construction; 0 if otherwise
Durable	=	1 if industry is durable goods manufacturing; 0 if otherwise
Nondurable	=	1 if industry is nondurable goods manufacturing; 0 if otherwise
Tpu	=	1 if industry is transportation, communications, or public utilities; 0 if otherwise
Buspers	=	1 if industry is business, repair, or personal services; 0 if otherwise
Fire	=	1 if industry is finance, insurance, or real estate; 0 if otherwise
Enter	=	1 if industry is professional services or entertainment; 0 if otherwise
Edserv	=	1 if industry is educational services; 0 if otherwise
Pubadm	=	1 if industry is government (other than educational) services; 0 if otherwise
Head	=	1 if the individual is the head of a household; 0 if not

The mean values for these variables are shown in the appendix, Table A.

TABLE III. SELECTED VARIABLES MEANS*

	TOTAL SAMPLE	BLACKS	WHITES
A. HOURLY WAGES (Dollars)			
Poverty Area Workers:	3.30(1.42)	3.31	3.28
Cleveland	3.16	3.09	3.25
Detroit	3.46	3.53	3.30
St. Louis	3.22	3.19	3.29
Suburban Workers:	3.69(1.91)	3.68	3.71
Cleveland	3.85	3.80	3.96
Detroit	3.68	3.71	3.58
St. Louis	3.50	3.48	3.56
B. TRAVEL TIME (Minutes Per One-Way Commute)			
Poverty Area Workers:	19.09(13.36)	21.16	14.94
Cleveland	18.48	21.45	14.40
Detroit	19.89	21.59	15.66
St. Louis	18.32	20.13	14.84
Suburban Workers:	33.11(17.05)	34.62	28.77
Cleveland	32.91	35.72	27.56
Detroit	33.19	33.97	30.07
St. Louis	33.15	35.04	28.50
C. TRAVEL COST (Cents Per Hour)			
Poverty Area Workers:	7.5(7.6)	8.2	6.3
Cleveland	7.9	8.5	7.1
Detroit	7.7	8.2	6.1
St. Louis	6.9	7.8	5.3
Suburban Workers:	13.4(7.6)	14.2	11.8
Cleveland	13.4	14.8	10.7
Detroit	12.9	13.1	12.3
St. Louis	14.4	15.2	12.6

*Numbers in parentheses are standard deviations.

TABLE IV. DISTRIBUTION OF EMPLOYMENT LOCATION BY RACE AND CITY

	WORK IN POVERTY AREA		WORK IN SUBURBS	
	%	#	%	#
ALL BLACKS	48.86	602	51.14	630
Cleveland Blacks	53.66	176	46.34	152
Detroit Blacks	43.63	267	56.37	345
St. Louis Blacks	54.45	159	45.55	133
ALL WHITES	59.63	325	40.37	220
Cleveland Whites	62.44	133	37.56	80
Detroit Whites	56.35	111	43.65	86
St. Louis Whites	60.00	81	40.00	54

Number and percentage of each subsample working in each location.

TABLE V. SUBURBAN POVERTY-AREA WAGE DIFFERENTIALS

	UBD		ID		LBD	
	> 0	< 0	> 0	< 0	> 0	< 0
POOLED	443	407	422	428	352	498
N = 850	52.1%	47.9	49.6	50.4	41.4	58.6
BC	364	329	347	346	290	403
N = 157	52.5	47.5	50.1	49.9	41.9	58.1
WC	79	78	75	82	62	95
N = 157	50.3	49.7	47.8	52.2	39.5	60.5
OP	172	160	165	167	140	192
N = 332	51.8	48.2	49.7	50.3	42.2	57.8
Blacks	325	305	306	324	247	383
N = 630	51.6	48.4	48.6	51.4	39.2	60.8
Whites	118	102	116	104	105	115
N = 220	53.6	46.4	52.7	47.3	47.7	52.3
Cleveland	143	89	138	94	120	112
N = 232	61.6	38.4	59.5	40.5	51.7	48.3
Detroit	221	210	210	221	174	257
N = 431	51.3	48.7	48.7	51.3	40.4	59.6
St. Louis	79	108	74	113	58	129
N = 187	42.4	57.8	39.6	60.4	31.0	69.0

The top row of each occupational group provides the number of persons (for each of the differentials) for whom the differential is, respectively, positive and negative; the bottom row in each group provides the percentage of persons (in that occupational group) for whom each differential is, respectively, positive and negative.

TABLE VI. MEAN VALUE OF SUBURBAN, POVERTY-AREA WAGE DIFFERENTIAL

(Dollars)

	UBD			ID			LBD		
	ALL	> 0	< 0	ALL	> 0	<0	ALL	> 0	< 0
POOLED	.174 (.045)+	1.04*	-.760**	.116 (.046)+	1.04	-.781	-.085 (.043)+	1.01	-.853
BC	.163	.992	-.747	.105	.987	-.771	-.105	.994	-.852
WC	.220	1.25	-.813	.166	1.26	-.823	.006	1.35	-.858
BLACKS	.118	.969	-.778	.055	.969	-.797	-.163	.955	-.872
WHITES	.333	1.23	-.704	.291	1.21	-.730	.139	1.16	-.790
CLEVELAND	.402	1.07	-.652	.349	1.06	-.676	.145	1.00	-.756
DETROIT	.115	.968	-.782	.063	.970	-.799	-.133	.962	-.874
ST. LOUIS	.026	1.19	-.804	-.049	1.18	-.833	-.258	1.21	-.896

+Standard errors are in parentheses. For UBD, ID, and LBD, the mean value of all the residuals is significantly different from zero, at the five percent level of significance.

*mean of the values of the residuals which are positive

**mean of the values of the residuals which are negative

APPENDIX

TABLE A: MEAN VALUES IN THE SAMPLE OF VARIOUS PERSONAL CHARACTERISTICS FOR POVERTY-AREA AND SUBURBAN WORKERS

	POVERTY-AREA WORKERS (927 total)	SUBURBAN WORKERS (850 total)
PERCENT OF BLACKS	.649	.740
CLEVELAND RESIDENTS	.333	.272
DETROIT RESIDENTS	.408	.509
ST. LOUIS RESIDENTS	.259	.219
IN AGFF INDUSTRY	.001	.002
IN MINE "	.000	.000
IN CONST "	.022	.067
IN DURABLE"	.382	.600
IN NONDUR "	.111	.044
IN TPU "	.081	.053
IN WHOLESALE OR RETAIL TRADE "	.155	.096
IN FIRE "	.013	.008
IN BUSPERS"	.060	.038
IN ENTER "	.051	.033
IN EDSERV "	.005	.011
IN PUBADM "	.119	.047
BADHEALTH "	.091	.061
HEAD	.844	.865
E ED1	.221	.171
E ED2	.435	.461
E E34	.344	.368
TRAINING	.250	.257
IN CLERK OCCUPATION	.118	.071
IN MACHINIST OCCUPATION	.077	.059
IN CRAFT OCCUPATION	.119	.141
IN OPERATIVE OCCUPATION	.332	.390
IN TRANSPORT WORKER OCCUPATION	.128	.093
IN LABOR OCCUPATION	.095	.132
IN SERVICE OCCUPATION	.152	.113
IN WC OCCUPATION	.270	.184
AGE (years)	41.1	40.6
YEARLY EARNINGS (dollars)	6470	6999
JOB TENURE (years)	8.90	9.29
HOURS WORKED (week)	41.6	42.2

TABLE B: DETAILED DISTRIBUTION OF ID--FOR THE POOLED SAMPLE

VALUE OF ID (dollars)	PERCENT OF INDIVIDUALS
ID LESS THAN -3.00	0.1
ID BETWEEN -2.75 & -2.50	0.1
-2.50 & -2.25	0.9
-2.25 & -2.00	0.8
-2.00 & -1.75	1.3
-1.75 & -1.50	2.5
-1.50 & -1.25	3.3
-1.25 & -1.00	6.9
-1.00 & -0.75	6.0
-0.75 & -0.50	9.5
-0.50 & -0.25	10.0
-0.25 & 0.00	9.0
0.00 & 0.25	12.4
0.25 & 0.50	10.4
0.50 & 0.75	5.9
0.75 & 1.00	5.2
1.00 & 1.25	3.2
1.25 & 1.50	3.0
1.50 & 1.75	1.4
1.75 & 2.00	0.9
2.00 & 2.25	1.2
2.25 & 2.50	1.3
2.50 & 2.75	0.4
2.75 & 3.00	0.9
3.00 & 3.25	0.4
3.25 & 3.50	0.5
3.50 & 3.75	0.4
3.75 & 4.00	0.5
ID GREATER THAN 4.00	2.0

$1.34 is the standard error of Regression A, Table I.

NOTES

[1]Kain (1968) and Kain and Persky (1969).

[2]Harrison (1974) discusses the policy issues at length.

[3]In fact, some have assumed that suburban jobs yield higher private economic returns even for Blacks, but have advocated development as yielding social returns in excess of private returns (e.g. political externalities would result from a strengthened ghetto economic base).

[4]United States Bureau of the Census (1970).

[5]Individuals who live in the poverty area and work in the suburban ring are referred to as suburban workers. Those who both live and work in the poverty area are called poverty-area workers. The Survey delineates the poverty area for each city on the basis of Census tract characteristics and provides maps for each area.

[6]For example, the presence of monopolies.

[7]It was necessary to aggregate individuals into occupational groupings in order to have sufficient degrees of freedom with which to perform the regressions.

[8]Hall (1970).

[9]Nonlinear terms in age did not prove to be significant. A log-linear specification for the wage equation was estimated but yielded very similar results to the linear specification analyzed in the text. This similarity is not surprising. Since the sample of individuals is relatively homogeneous because it includes only employed males, ages twenty-one to sixty-four, the range of wage rates is relatively small; therefore a log-linear specification could not be expected to be particularly advantageous.

[10]All statements referring to the significance of either parameter estimates or statistical tests were performed at the five percent level.

[11]Harrison (1972), Chapter 7.

[12]For drivers, the Survey provides data on the commuting time, not cost, or miles driven. ID and LBD were calculated by assuming that drivers (approximately forty percent of the sample of commuters) travel at an average speed of ten miles per hour at an average cost of ten cents per mile. Since we know the time of travel, but not the miles driven, any increase in the assumed travel speed, will raise the estimate of miles driven, and hence the travel cost. For those who used public transit, the Survey provides both the travel time and the out-of-pocket commuting costs.

Notes (cont.)

[13]Two estimates of the nonpecuniary value of time were considered: (1) the imputed wage, which will be an appropriate estimate if the individual's alternative to his suburban job is employment in the poverty area at the imputed wage; (2) the realized wage of the suburban worker, which is appropriate if the opportunity to actually increase one's hours of work at that wage is available. Since none of the results to be presented is sensitive to which of these two estimates is chosen, only the results using the individual's realized wage as the value of time will be discussed.

While certain empirical studies have suggested that travel time is valued at about one-third of the wage rate, ID and LBD, by valuing travel time at zero cost and at the wage rate itself, provide a broader range for analysis. As will be seen below, the results are not sensitive to the valuation of travel time.

[14]The use of the real hourly wage to measure the relative advantage of suburban versus poverty-area jobs would be misleading if, for example, poverty-area workers could not find employment for as large a portion of the year as suburban workers. The suburban worker might prefer the lower-wage job if it provides more stable employment, and therefore, increased income opportunities. The Survey did not report a continuous measure of an individual's weeks worked; however the individual's yearly earnings might serve as a proxy for the income possibilities of his job (the proxy, of course, abstracts from differences in earnings due to differences in such personal characteristics such as bad health, etc.). For the individuals in the sample for whom job tenure equaled one year or more, the data below provide the mean value of yearly earnings separately for those who work in the suburbs and for those who work in the poverty area. The means for yearly earnings suggest that suburban jobs do not systematically offer opportunities of more stable employment that might more than compensate for possible wage rate disadvantages. While the mean of yearly earnings for suburban workers does exceed the mean of yearly earnings for poverty-area workers, the difference is less than the differences in the means of the wage rates between the two groups of workers (see Table III for the wage-rate means). For the pooled sample and for most of the racial and city subsamples, suburban yearly earnings exceed poverty-area yearly earnings, on average, by less than suburban wages exceed poverty-area wages, on average. There is therefore, no evidence that additional hours of suburban employment compensate for suburban, poverty-area wage differentials.

Footnote 14 (cont.)

	POVERTY-AREA WORKERS	SUBURBAN WORKERS
POOLED SAMPLE	7076	7479
BLACKS	7132	7312
WHITES	6981	8049
RESIDENTS OF CLEVELAND	6892	7217
RESIDENTS OF DETROIT	7668	8196
RESIDENTS OF ST. LOUIS	6347	6047

[15]It might be argued that if industries offering high wages were concentrated in the suburbs, then the calculated residuals might underestimate the systematic advantage of suburban employment. The imputed wage attributed to a suburban worker in a high-wage industry could no longer be interpreted as the wage the individual could expect to receive if he were to find employment within the poverty area, since employment in the same industry would be unlikely if such jobs are scarce. If alternative poverty-area industries pay lower wages, the individual's true imputed wage is lower; hence the true suburban, poverty-area wage differential is higher. Appendix Table A suggests that no such downward bias of the wage differentials is likely to occur in the sample under study. Of the industries that contribute substantially and positively to real wages (as indicated by the magnitude and sign of the coefficients of Regression A, Table I), two, durables and educational services, are disproportionately concentrated in the suburbs, and two, nondurables and public administration, are similarly concentrated in the poverty area. Neither the suburban ring nor the poverty area can claim a predominance of high-wage industrial employment.

[16]If the residuals clustered around zero were to be excluded from the analysis, the qualitative pattern displayed by UBD, ID, and LBD, in Table V would not be altered. Appendix Table B presents the distribution of ID. This distribution diverges from symmetry only at the extreme tails. For example, of those residuals that exceed, in absolute value, 1.00, approximately fifty percent are negative--duplicating the qualitative pattern of Table V.

[17]Talent is to be regarded as a catch-all phrase to refer to any characteristic that the employer regards as advantageous.

[18]The tables of residuals for these more detailed subsamples are available from the authors upon request.

[19]Harrison (1974).

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