

# The Pursuit of Opportunity: Explaining Selective Black Migration

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# The Pursuit of Opportunity: Explaining Selective Black Migration

Abstract:

This paper examines the destination choices of black migrants during the Great Migration. As previous research has shown, educated blacks were more likely to relocate to the North in the pre-World War II era. This analysis shows that this tendency can be attributed to better-educate migrants' ability to finance transportation costs, greater responsiveness to intercity wage differentials, and stronger distaste for Southern disamenities. After 1940, the destination choice gap closed, largely because migrant responses to wage differentials and valuation of Southern disamenities changed. These changes are observed both in the population at large and within birth-year cohorts.

Keywords: Selection, Migration, Conditional Logit

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#### **1. Introduction**

Between 1910 and 1970, millions of Southern-born black Americans exited their region of birth to take up residence in the North.<sup>1</sup> This unparalleled episode of peacetime migration has attracted a great deal of attention from both academic and popular historians (Vickery [35]; Wright [37]; Smith and Welch [32]; Margo [23]; Lemann [22]; Collins [8]). Previous work has documented the prodigious social and cultural impacts of the migration, as well as its importance in closing racial wage disparities in the post-war era.

Several previous studies of black migration (including Klineberg [21]; Hamilton [17]; Bowles [5]; Margo [24]; Margo [23]) have shown that highly educated blacks were more likely to exit the South than their less-educated counterparts.<sup>2</sup> Tables 1a and 1b confirm this finding, showing that as of 1940, blacks with education levels above the median for their age cohort and state were at least twice as likely to have left the South; and that as of 1970, the education-level disparity in exit rates, though smaller, remained between 38 and 73 percent.

Why were highly educated Southern blacks more likely to exit the South? To a large extent, previous literature has left this question open. Margo [23] evaluates the hypothesis that the monetary returns to migration were greater for the more highly educated, and finds only mixed supporting evidence. He cites other possible explanations for selective migration patterns – differential ability to pay transport costs, differential ability to gather information regarding

<sup>&</sup>lt;sup>1</sup> In this paper, I will use the term "North" to identify all states not in the South. For the purpose of this analysis, Southern states include Alabama, Arkansas, Delaware, the District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

<sup>&</sup>lt;sup>2</sup> This paper follows existing literature in focusing on migrant selection on the basis of education. Other migrant characteristics, such as age, pre-migration occupation, and pre-migration place of residence might also precipitate selection. The emphasis on educational attainment here can be justified by that variable's predictive power in determining post-migration economic outcomes, its relative exogeneity to the migration decision, and general (though imperfect) observability.

distant or obscure location alternatives, and differential willingness to accept Southern patterns of discrimination, but offers no empirical test of the relative importance of these various explanatory factors. Since the South and North vary along many potentially important dimensions, it is difficult to discern the importance of any one of these dimensions based solely on interregional migrant flows.

This paper's central insight is that most factors that disproportionately attracted educated migrants to the North should also disproportionately attract migrants to certain *cities*, whether in the South or North.<sup>3</sup> For example, if better educated migrants were more likely to migrate North because of their ability to finance transportation costs, then better educated migrants should also have been more likely to migrate to relatively distant cities within the South. By studying *selective destination choice*, or the propensity for individuals to choose different locations conditional on migrating, we learn about the factors affecting overall migrant flows between regions.

The results suggest that selective destination choice was particularly strong in the pre-World War II era, and declined significantly thereafter. In the prewar era, transportation costs, differential valuation of Southern disamenities, and wage differentials each play a role in generating selection. In later years, each of these factors becomes a less significant predictor of selection into the North. The only selection-inducing factor increasing in importance in the postwar era is a measure of a city's native human capital. These changes in migration patterns can be observed within single age cohorts between 1940 and 1970, suggesting that overall changes in black preferences, or the conditions that all blacks faced, are important explanatory

<sup>&</sup>lt;sup>3</sup> The paper uses cities as the unit of analysis in 1940 and Metropolitan Statistical Areas (MSAs) in 1970. Throughout the paper, the term "city" will be used, for sake of consistency and brevity, even though it is more accurate to use the term MSA in the later time period.

factors.

The study of selective migration has a strong economic motivation. Some of the most frequently cited models of economic behavior contain predictions regarding selective choice of locations (Roy [30]; Tiebout [33]). More recent empirical work has examined selective behavior among immigrants to and internal migrants within the United States (Borjas [3]; Borjas et al. [4]). More generally, an understanding of migrant behavior and the constraints thereon might help policymakers and social scientists understand why some disadvantaged individuals remain in cities or regions marked by adverse economic conditions. Models of regional labor market dynamics show that migration figures prominently in convergence to equilibrium (Hicks [19]; Sjaastad [31]; Blanchard and Katz [1]).

Section 2 documents the extent of selective migration and selective destination choice conditional on migrating among Southern-born individuals as of 1940 and 1970. Section 3 outlines the standard economic model of a migrant's location decision, following Sjaastad [31], and explains its connection to the empirical exercise. Section 4 presents the results of conditional logit analyses that document the sources of selective black destination choice as of 1940 and 1970. Section 5 presents conclusions.

#### 2. Evidence of Selection in the Great Migration

Tables 1a and 1b illustrate the extent of selective migration by reporting the probability of Northern residence, conditional on Southern birth, by self-reported education level and age cohort, for blacks included in the Census Integrated Public Use Microdata Samples (IPUMS) for 1940 and 1970, respectively.<sup>4</sup>

<sup>&</sup>lt;sup>4</sup> There is some concern that self-reported educational attainment in the 1940 Census overstates respondents' true level of education (Goldin [14]). Even with overstatement, the division of the migrant population into more and

It is difficult to compare the true education levels of blacks from different states and of different age cohorts, since the quality of education blacks received in public schools varied dramatically from state to state and over time (Margo [23]; Card and Krueger [6]). To avoid direct comparisons of individuals educated in different states and different decades, the dividing line between high and low education is relative rather than absolute; highly educated blacks are defined as those whose educational attainment exceeds the median for members of their age cohort born in the same state.<sup>5</sup>

Table 1a shows that the probability of Northern residence was significantly higher – by a factor of two to five, depending on age cohort – among highly educated Southern-born blacks.<sup>6</sup> In the oldest age cohort, representing individuals born before 1893, the highly educated were twice as likely to reside in the North. In the youngest cohort, born between 1913 and 1922, the highly educated were almost five times more likely to live in the North. Consistent with the timing of the greatest wave of migration during and immediately after World War I, and with the notion that young adults were most likely to migrate (Gottlieb [15]; Grossman [16]), the cohort

less educated halves should accurately partition the population, unless reported education does not correlate or covaries negatively with actual education within race, state of birth, and age cohort cells.

<sup>&</sup>lt;sup>5</sup> These relative standards can be thought of as emerging from a signalling model, where individuals vary in unobserved ability and more able individuals tend to attain higher educational levels, but the level of education considered to be "high" varies over time and across states. Use of a relative standard for different age cohorts limits my ability to investigate the impact of rising average education levels on migrant behavior, which Margo [23] suggests may be important. The analysis below suggests that cross-sectional and time-series behavioral patterns among highly-educated migrants, where "highly-educated" is defined using relative standards, were similar across age cohorts. This evidence supports the education-as-signalling viewpoint. Alternative specifications using an absolute education cutoff produce similar results. Appendix tables A1 and A2 show the median education levels for each state of birth/age cohort in the 1940 and 1970 IPUMS data.In the 1940 analysis, age cohorts are defined as follows: 18-27 years, 28-37 years, 38-47 years, 48 years and up. In the 1970 analysis, the last age cohort is further divided into 48-57 years, 58-67 years, and 68 years and up. Individuals who report being in school as of the Census year are excluded from the analysis.

<sup>&</sup>lt;sup>6</sup> Care should be taken when interpreting these results. They represent only a snapshot of individual location, and will thus tend to misstate the fraction of Southern-bom blacks who actually moved North at any point in time prior to 1940, or the number of interstate moves made by each Southern-born black. Census data provide only a limited ability to identify multiple or return migrants. For an analysis of the potential to identify multiple moves using IPUMS data, see Rosenbloom and Sundstrom [29].

of individuals between 38 and 47 years old in 1940 were the most likely to live in Northern states. The data suggest that the well-documented reduction in black migration rates during the Great Depression was especially acute in the less-educated subset of the population.

Table 1b examines the probability of Northern residence in 1970 for a series of Southernborn age cohorts, including several cohorts initially surveyed in 1940. Comparison of Tables 1a and 1b reveals a significant increase in the probability of Northern residence in these twicesurveyed cohorts. Northern residence in 1970 is similarly common in cohorts of Southern-born blacks who came of age after 1940, with the possible exception of the youngest cohort, whose low migration rate reflects the overall decline in South-to-North migration in the 1960s.<sup>7</sup>

As in 1940, blacks with education levels higher than the median for their state and age cohort were more likely to exit the South than those with below-median education. The education gap is generally smaller in 1970 than in 1940, ranging from 40 to 75 percent across age cohorts. Moreover, the gap is smallest in the youngest cohorts – a pattern opposite to that observed in 1940.

Not only were less-educated blacks more likely to remain in the South overall, they were more likely to remain in the South conditional on residing outside their state of birth. Table 2a documents this trend in the 1940 IPUMS sample. In each age cohort, highly-educated blacks living outside their state of birth were more likely to reside in the North than in the South. In the oldest cohort, highly educated black interstate migrants were 35% more likely to reside in the North. In the youngest cohort, the gap is approximately 85%. Selective destination choice – the propensity for migrants to systematically choose different places – is an important component of

<sup>&</sup>lt;sup>7</sup> Previous literature has identified several factors, including war-related increases in labor demand in Northern cities, national minimum wage policies, and the mechanization of cotton agriculture, as at least partially responsible for the increased migration rates observed in Table 1b relative to Table 1a (Vickery [35]; Wright [37]).

the overall pattern of selective black migration, at least in this time period.<sup>8</sup>

A large component of the narrowing migration gap revealed in Tables 1a and 1b can be attributed to changes in the pattern of selective destination choice. Table 2b shows the probability of Northern residence for Southern-bom blacks who lived outside their state of birth in 1970. In no birth cohort does the high-low education gap exceed 20%; in the most recent cohorts, the probability of Northern residence conditional on interstate migration essentially does not vary by education level. This is a stark contrast to the patterns shown in Table 2a, which showed a uniformly larger gap that decreased, rather than increased with the age of the cohort. It is worthwhile noting that rates of exit among black interstate migrants leveled up, rather than down, between 1940 and 1970. Approximately three-quarters of Southern-born blacks living outside their state of birth in 1970 lived outside the South.<sup>9</sup>

In summary, there is substantial evidence of selective black destination choice as of 1940 and 1970, but the degree of selection varies substantially across age cohorts and over time. Highly educated black migrants were significantly more likely to choose a Northern destination as of 1940, especially if they belonged to a younger age cohort. In 1970, similar discrepancies in destination choice are observed, but they are generally smaller and greatest within the oldest age cohorts. The next section reviews a basic economic model of destination choice to begin explaining these patterns.

<sup>&</sup>lt;sup>8</sup> Conditional on interstate migration, the propensity for southem-born *whites* to leave the South also increased with education as of 1940. Unlike the black population, how ever, the gap between highly- and less-educated white migration rates *decreases* over time. In the youngest white cohorts, the difference is only 4 percentage points, or roughly ten percent. The probability of South-to-North migration in the white population is generally lower than the highly educated black population, and roughly equal to or slightly higher than the less-educated black population.

<sup>&</sup>lt;sup>9</sup> Southern-born white migration patterns as of 1970 show some similarity to the patterns in the black data. Conditional on interstate migration, less-educated whites were actually more likely to exit the South than their more-educated counterparts. Rates of exit conditional on migration were similar in the less-educated white and lesseducated black population.

#### 3. The Economic Framework

Following Sjaastad [31], an economic agent's choice of residential location can be modeled as a simple comparison of costs and benefits, or equivalently an attempt to select the community that maximizes the following expression:

(1) 
$$Y_{ic} + V_i(a_c) - td_{ic} - p_{ic}$$
.

In equation 1, migrant *i* selects among potential destination cities *c*. Entering positively into the equation are (lifetime) income levels  $Y_{ic}$  the migrant expects to receive in a particular place, and the migrant's dollar valuation of the bundle of amenities and disamenities, including discrimination,  $V_i(a_c)$ , in the destination city. Offsetting these potential benefits of a location are two costs. The physical cost of moving is presumed to be a linear function of the distance between migrant and destination,  $d_{ic}$ .<sup>10</sup> The parameter *t* is equal to the per-unit cost of transportation.<sup>11</sup> Non-monetary moving costs,  $p_{ic}$ , represent the migrant's expected cost of learning about and assimilating to a new environment.<sup>12</sup> Selective destination choice occurs whenever any of these four terms vary systematically across migrants. The following subsections describe the empirical strategies used to isolate each of these possible selection-inducing factors.

# 3.1 Variation in the monetary returns to migration

<sup>&</sup>lt;sup>10</sup> Introducing a fixed migration cost, in addition to a distance-varying component, would have no implications for selective destination choice in the sample of individuals who have chosen to migrate. Fixed costs of migration might explain group differences in the overall propensity to migrate, however.

<sup>&</sup>lt;sup>11</sup> The model's linear treatment of distance approximates physical transportation costs fairly well. Railroad fares through the early part of the century were heavily regulated, and were usually based on distance traveled, with rates around  $2\phi$  per mile (Freed [13]).

<sup>&</sup>lt;sup>12</sup> In Sjaastad's terminology,  $p_{ic}$  represents the "psychic," as opposed to monetary costs of moving.

For most of the twentieth century, Northern blacks earned more than their counterparts in the South (Smith and Welch [32]). To the extent that the potential income gains from relocation varied by migrant skill level, city wage structures may have induced selective migration. This is the essential insight of Roy's [30] model, that skilled individuals will have stronger incentives to migrate when returns to skill are stronger in the destination city than in the origin city.<sup>13</sup>

Using data on post-migration wage gaps to explain migration is inherently problematic, since local wages are endogenous to past migration decisions. Because of this problem, the wage measure used in the analysis below will be a proxy based on each city's industrial composition. The proxy measure is calculated in two steps. First, I use 1940 (or 1970) IPUMS data on all individuals in the labor force nationwide to calculate  $\overline{w}_{rj}$ , the mean annual earnings for individuals of race *r* who either currently work or, if unemployed, last worked in industry *j*.<sup>14</sup> Second, I create a city- and race-specific predicted earnings variable using the following formula:

(2) 
$$\hat{w}_{rc} = \sum_{j} \theta_{rjc} \overline{w}_{rj}$$
,

where  $\theta_{rjc}$  equals the share of race *r* workers in city *c* in industry *j* in 1940 (or 1970).<sup>15</sup> By construction, this measure incorporates the probability of unemployment into the calculation of expected earnings.

<sup>&</sup>lt;sup>13</sup> Margo [23] examines the incomes of Southern-born blacks in 1940 and finds evidence somewhat, but not fully, consistent with wage-based incentives for selective migration. Specifically, he finds that in the 1940 IPUMS data, the North/South income gap is widest for individuals with a moderate amount of education, between 5 and 8 years. The gap is actually lowest for individuals with 9 or more years of education. Correcting for selective migration, Margo [24] finds evidence that expected earnings gains positively influenced migration, but also that more educated blacks were more likely to migrate conditional on expected earnings gains. For additional empirical tests of the Roy model, see Borjas [3] and Borjas et al. [4].

<sup>&</sup>lt;sup>14</sup> There are 131 industries reported in the 1940 IP UMS, and 227 industries reported in the 1970 sample. Calculations of  $\overline{w}_{rj}$  and the associated wage dispersion measure exclude those working on public relief projects in 1940.

<sup>&</sup>lt;sup>15</sup> For industries present in both the North and South, this measure obscures regional variation in wages. More generally, it omits any city-specific wage premium. It is therefore possible that the South indicator variable introduced in the following section may capture some within-industry regional variation in wages.

High average wages in a location do not necessarily imply that returns to skill are high in that location.<sup>16</sup> Since the Roy model predicts that a specific type of wage dispersion, rather than average wages, should induce selection among potential migrants, I use a method similar to the one described above to calculate a race-specific industry-based measure of the coefficient of variation of earnings in each city in 1940 and 1970.<sup>17</sup> This measure also incorporates the probability of unemployment for workers in each industry.

Native human capital might influence the returns to skill that migrants face in any particular city. For example, high-human capital natives might create spillovers that raise the marginal product of high-human capital migrants. My measure of human capital is based on the average years of schooling among city residents at least 18 years of age and born in their state of residence. To correct for differences in average schooling that might arise from simple demographic differences, I regress years of schooling on categorical age variables and a gender dummy for the entire national sample of individuals meeting these two criteria, then take the mean residual by city.

# 3.2 Variation in the valuation of amenities and disamenities

While previous authors disagree on the relative importance of Southern discrimination as an *impetus* to migration (Vickery [35]; Grossman [16]; Tolnay and Beck [34]), Margo [23] hypothesizes that differential black valuation of discrimination as a disamenity might explain the

<sup>&</sup>lt;sup>16</sup> A finding that more educated migrants were disproportionately attracted to high-average wage cities might suggest that the jobs available to those migrants featured skill requirements that disqualified less-educated migrants.

<sup>&</sup>lt;sup>17</sup> The Roy model's predictions actually apply to the returns to skill in a location, rather than simply the degree of wage dispersion in that location. For this reason, it would be preferable to use a returns to skill measure in place of the coefficient of variation. In practice, it is difficult to estimate returns to skill precisely in some industry-race cells, since sample sizes can be fairly small. Wage dispersion variables have been used by other authors in recent empirical tests of the Roy model (Borjas et al. [4]; Borjas [3]).

*selectivity* of migration. More educated Southem blacks may have been willing to pay more to avoid the patterns of discrimination and inequality associated with the South.<sup>18</sup> Alternatively, the increase in social position associated with migration may have been greater for more educated blacks (Dollard [11]).

Consider the hypothetical choice between two cities, with identical wage distributions, at equal distance from a migrant's initial location, and about which migrants are equally well informed. If one city is in the South, and the other is in the North, differential valuation of Southern discrimination would lead highly educated blacks to systematically select the Northern destination more frequently than their less-educated counterparts. A "South" indicator variable will therefore measure the tendency to migrate away from Southern cities conditional on all other observed characteristics.<sup>19</sup>

The native human capital variable discussed in the preceding section might also carry an amenity interpretation. Local human capital might be a public good, as in Rauch [27], or might correlate with the presence of local amenities or public services attractive to the highly educated.

#### 3.3 Variation in ability to pay transportation costs

Capital market institutions generally do not provide migrants with the ability to borrow

<sup>&</sup>lt;sup>18</sup> The South certainly did not have a monopoly on patterns of discrimination against blacks during the time period reviewed here. Labor and housing market discrimination were widespread in the North. Many Northern states had laws against intermarriage and other sanctioned impediments to social assimilation. To most contemporary observers, however, there was a clear difference between the North and the South. Southern blacks faced a "governing social order," in Dollard's [11] terms, which affected most all interactions between races.

<sup>&</sup>lt;sup>19</sup> The South indicator variable will pick up the effects of other city characteristics that are correlated with region but not included in the analysis. To some extent, this concern will be addressed in Section 4 below by analyzing the location decisions of Southern-bom white migrants alongside those of black migrants. If the South indicator variable is truly a measure of racial discrimination, then we would expect the relationship between the South indicator and the probability of destination choice to be significantly different within the white population.

against anticipated gains from moving.<sup>20</sup> Northern cities may have attracted more educated migrants because these migrants were more able to afford the physical costs of relocation. The correlation between education and financial resources might occur for two reasons. First, positive returns to education may have provided the highly educated with greater opportunities to save money in order to cover transportation costs. Second, education might proxy for family resources; families able to afford the opportunity cost of sending children to school were likely better able to afford other costs.

Examination of selective destination choice offers a unique opportunity to test the transport cost hypothesis. Highly educated migrants should exhibit a tendency to travel longer distances, independent of whether the destination of the journey is Northern or Southern. The measure used to test the transportation cost hypothesis is the distance, in miles "as the crow flies," between the population centroid of a migrant's state of birth and a potential destination city.

# 3.4 Variation in the ease of information gathering and assimilation

Anecdotal and empirical evidence shows that migrants frequently chose a destination on the basis of previous location decisions by friends or relatives (Marks [25]). Carrington et al. [7] develop a model where the costs of migration to a particular destination fall as the number of previous migrants to that destination increases, and show that black migration patterns follow the predictions of this theory. The authors posit that previous migrants provide new migrants with information about employment and housing opportunities, and otherwise decrease the costs of

<sup>&</sup>lt;sup>20</sup> In at least some cases, migrants *were* able to borrow against their expected gain in wages to cover transportation costs. Anecdotal evidence frequently emphasizes the role of Northern labor agents in actively recruiting, and financially assisting, Southern blacks willing to make the journey (Marks [25]).

assimilation. Assimilation and information-gathering costs may have been a greater barrier for blacks with lower levels of education. If so, the presence of previous migrants in a city, or any other factor that reduces those costs, would disproportionately attract migrants with little education.

The analysis below includes two measures of assimilation and information-gathering costs.<sup>21</sup> First, larger cities should be easier for migrants to learn about.<sup>22</sup> A Southern-born migrant should be more likely to choose Los Angeles than Santa Barbara, even though both cities are roughly equidistant. Second, as in Carrington et al. [7], cities with larger numbers of blacks should feature both lower assimilation and information-gathering costs. Black migrants are more likely to have personal contacts in cities with larger black populations, and these contacts in turn might provide assistance in locating housing, employment, and consumer goods. Since a city's current population, as a function of previous migration to the city, is endogenous, the analysis in Section 4 will use population figures lagged thirty years.<sup>23</sup>

#### 4. Explaining Selection in Destination Choice

# 4.1 The Econometric Specification

The results presented in this section are based on conditional logit regression models,

<sup>&</sup>lt;sup>21</sup> Information and assimilation costs might exhibit a tendency to increase with distance between origin and destination. If so, distance can be used to test this hypothesis as well.

<sup>&</sup>lt;sup>22</sup> Anecdotal evidence (e.g. Lemann [22]) suggests that black newspapers circulating in the South served as an important source of information for potential migrants. As suggestive evidence, I therefore recorded the number of black newspapers published in each city prior to 1940, using the extensive archive at the University of Georgia, documented on line at <u>http://www.arches.uga.edu/~serials/afam news.htm</u>. Sample cities above the median population had an average of 2.17 black newspapers published at some time before 1940, whereas cities below the median had less than one-fourth that many: 0.45.

<sup>&</sup>lt;sup>23</sup> These lagged population figures are still endogenous, to the extent that individual migrants greater than thirty years old may be counted in the total. In all cases, the results in Section 4 are qualitatively unaffected if samples are restricted to those individuals under 48 years of age as of the Census year – these individuals would have been under 18 at the time the lagged population figure was determined.

which model a migrant *i*'s potential utility in city *c* as a function of city characteristics  $x_c$ , the distance between the migrant's original location and the city,  $d_{ic}$ , and a random term  $\epsilon_{ic}$ . Migrant utility function parameters are presumed to vary by racial group *r* and educational group *e*:

(3) 
$$U_{irec} = \beta_{re} x_c + \gamma_{re} d_{ic} + \epsilon_{irec}$$

Variables included in the vector  $x_c$  include city population (lagged thirty years), black population (lagged thirty years), industry-based race-specific proxy measures of the mean and coefficient of variation of a city's wage distribution, the age- and gender-corrected average education of city natives, and a dichotomous variable identifying cities in the South. Migrants select the destination offering them the highest utility. If the error terms  $\epsilon_{irec}$  are independent, and follow an identical Weibull distribution, observed migrant destination choices can be used to determine the parameters  $\beta$  and  $\gamma$  using the conditional logit specification (McFadden [26]).<sup>24</sup> Using  $Y_{ire}$  to denote the destination chosen by migrant *i* (belonging to racial group *r* and educational group *e*), I estimate the following equation:

(4) 
$$\operatorname{Prob}(Y_{ire} = c) = \frac{e^{\beta_{re}x_c + \gamma_{re}d_{ic}}}{\sum\limits_{c} e^{\beta_{re}x_c + \gamma_{re}d_{ic}}}.$$

Selective destination choice occurs when the parameters  $\beta_{re}$  and/or  $\gamma_{re}$  vary significantly between education groups *e* within a racial group *r*.

The sample in each conditional logit specification consists of individuals at least 18 years

 $<sup>^{24}</sup>$  Imbedded in the conditional logit framework is the independence of irrelevant alternatives (IIA) assumption. In the case of migration analysis, this assumption is not particularly attractive. The relative probability of choosing New Y ork City over Atlanta, for example, is probably sensitive to whether Ne wark, NJ is included in the choice set. Hausman/McFadden specification tests of the IIA assumption verify this intuition – exclusion of cities from the alternative set leads to relatively large variation in estimated coefficients. Since this empirical exercise is more concerned with comparing estimates of  $\beta$  and  $\gamma$  for different groups, rather than interpreting the magnitude of the coefficients themselves, the most important question is whether the violation of the IIA assumption has similar implications for different groups. While this paper offers no formal test of that question, casual inspection of Hausman/McFadden test results suggest that violation of IIA does indeed have similar implications across groups. In the context of the above example, the effect of including Jersey City on the relative probability of choosing New York rather than Atlanta appears to be similar across races and education groups.

of age who were born in a Southern state and lived in an IPUMS-identified city outside their state of birth. Individuals attending school in the Census year are excluded from the sample. The set of cities identified in the IPUMS constitutes the choice set for these interstate migrants; this amounts to 96 cities in the 1940 specifications, and 110 cities in 1970.

#### 4.2 Selection in 1940

Table 3 presents the results of conditional logit specifications examining migrant destination choice prior to 1940. The first two columns report coefficient estimates for black migrants of above and below average education, respectively.<sup>25</sup> In general, black migrants of all education levels were similarly attracted to or repelled from the set of city characteristics listed.<sup>26</sup> Black migrants were more likely to move to cities with higher proxied mean earnings, and less likely to move to cities with high degrees of proxied wage dispersion.<sup>27</sup> Blacks were also more likely to choose cities with higher native education levels. Controlling for the other characteristics in the table, including distance, blacks were much more likely to select a destination if it was outside the South. Proximate destinations were chosen more frequently than distant ones, and larger cities were chosen more frequently than smaller ones. Finally, cities with

<sup>&</sup>lt;sup>25</sup> As in Section 2 above, migrants are placed in the "above average education" category if their reported years of schooling exceeds the median for interstate migrants of their race, ten-year birth cohort, and state of birth.

<sup>&</sup>lt;sup>26</sup> It should be noted that several of the city characteristics in the regression equation display a mild degree of correlation with one another. The strongest correlation coefficient is between the lagged overall and black population measures, approximately 0.5. Lagged black population tends to be higher in the South, but meaningful within-region variation exists. Other correlation coefficients are below 0.2 in absolute value.

<sup>&</sup>lt;sup>27</sup> One possible explanation for black migrants' avoidance of high wage-dispersion cities is that they are avoiding places with high unemployment rates. To test this hypothesis, I used a method similar to that employed to proxy for mean earnings to generate an industry-based unemployment rate proxy for each city. Controlling for the unemployment proxy in the conditional logit model does not significantly alter the wage dispersion effects – in fact they become slightly larger in absolute value. Interestingly, coefficient estimates suggest that black migrants were more likely to choose cities with high unemployment rates. A Harris-Todaro [18] type model of expected income maximization along with wage floors and/or efficiency wages might explain this tendency. Southern-born white migrants, by contrast, show a tendency to avoid high-unemployment cities.

a higher black population in 1910 attracted more black migrants, other things equal.<sup>28</sup>

Several pairs of coefficients show evidence of selective destination choice on the basis of education in the black migrant population. To aid in interpreting this evidence, Table 4 presents the results of hypothetical comparisons based on the conditional logit results in the first two columns of Table 3. Each comparison involves two hypothetical cities identical in every characteristic save one. The varying characteristic is set equal to the Southern mean in the reference city, and the Northern mean in the comparison city. The table reports the probability of a black migrant of either education group choosing the comparison city, based on the conditional logit coefficients, if the probability of choosing the reference city is 1%.

The Table's final column considers whether the differences in choice patterns across educational groups can potentially explain any part of the discrepancies in the probability of Northern residence shown in Table 2a. This is determined by calculating the ratio of comparison city choice probabilities for highly educated and less educated black migrants. The ratio can be interpreted as the discrepancy in the probability of Northern residence that would ensue if Northern and Southern cities differed along the indicated measure alone. These calculated ratios can be compared with the observed ratios in the final column of Table 2a.

Both the first row of Table 3 and the first two rows of Table 4 indicate that highly educated migrants were more sensitive to a city's average wage level than their less-educated counterparts. Relative to the reference city, where mean earnings equal to the Southern average (\$504) the probability of locating in a city with mean earnings equal to the Northern average

<sup>&</sup>lt;sup>28</sup> Two additional explanatory variables were considered in alternative specifications: median housing rents and segregation levels in each city. These variables are excluded from the basic specification because their 1940 values might be endogenous to migration decisions, and it is difficult to obtain precise data for earlier years. The inclusion of either variable does not significantly affect the reported coefficients. This being said, evidence suggests that black migrants gravitated towards cities with higher costs of living, and towards more segregated cities. Highly educated migrants were especially likely to select segregated cities.

(\$553) but otherwise equal by every included measure, is 50% higher for less-educated blacks, and 90% higher for highly educated blacks. Based on the North-South difference in mean earnings alone, the predicted ratio of Northern residence probabilities for highly- and less-educate blacks would be 1.27. For comparison, the statistics in Table 2 indicate that the overall probability ratio was between 1.35 and 1.84, depending on age cohort.

The coefficient of variation effects in the first two columns of Table 3 are inconsistent with the Roy model's prediction – that highly skilled migrants would systematically choose locations with greater variance in the wage distribution.<sup>29</sup> As Table 4 demonstrates, the relative similarity of wage dispersion in Southern and Northern cities and the similarity of the regression coefficients for highly- and less-educated black migrants lead to the conclusion that wage dispersion was not an important factor in producing selective black migration to the North.

Education levels of the native-born differed dramatically between North and South. Correcting for differences related to the age and gender composition of the population, native residents of Northern cities had roughly one year of schooling more than urban Southerners. Given educated black migrants' higher propensity to choose destinations with an educated native population, this factor predicts a probability ratio of 1.22. The amenities and/or job opportunities associated with an educated populace were apparently important considerations fro educated migrants.

When comparing Southern and Northern cities with equal wage distributions, native education levels, populations, and at equal distances, black migrants of all education levels were

<sup>&</sup>lt;sup>29</sup> The wage dispersion measure used here captures variability in wages within industries, rather than across industries. It is therefore possible that highly educated migrants simply chose destinations with high degrees of wage dispersion across industries. As will be discussed below, white migrant selection patterns are consistent with the Roy model, even using the within-industry measure of wage dispersion. This makes the black migration pattern all the more puzzling.

significantly more likely to select the Northern alternative. The disparity is more pronounced in the highly-educated half of the black population. The probability ratio generated by migrants' differential propensity to choose Northern cities, all other things equal, is 1.06. This pattern supports the hypothesis that highly educated black migrants were more sensitive to the disamenities common to Southern cities but absent in Northern cities.<sup>30</sup> The pattern might also reflect the importance of other omitted factors that vary significantly between North and South.

The average distance from a migrant's state of birth to a Southern city in the choice set is about 550 miles; the average distance to a Northern city is roughly 950. When comparing two cities, identical in every other respect, but at these two distances, black migrants were 70 to 80 percent less likely to select the more distant city. Less-educated migrants were significantly more sensitive to distance, as the transportation cost hypothesis predicts. Using only the information on average distance to Southern and Northern cities, the predicted probability gap between the two education groups is 44% – the largest gap of any reported in Table 4.

Although Southern and Northern cities differed substantially in terms of 1910 total population and 1910 black population, there is little evidence that this differential spawned selective migration. Black migrants of all education levels responded to differences in these variables in very similar ways. The ease of information gathering and assimilation associated with larger cities, and with cities with larger black populations, appears to have been equally important to black migrants of all education levels.

The third and fourth columns of Table 3 examine white destination choice, as a comparison and contrast to the patterns evinced in the black population. Several overall

<sup>&</sup>lt;sup>30</sup> This hypothesis, in turn, might explain some portion of the disproportionately high returns to schooling for Southern blacks. High wages for educated blacks in the South might reflect a compensating differential to offset Southern disamenities.

contrasts stand out. Unlike blacks, Southern whites did not avoid cities with high wage dispersion, as measured by the industry-based proxy variable. Furthermore, whites show a propensity to select cities with lower average earnings. White migrants were also much more likely to remain in the South than their black counterparts, other things equal.<sup>31</sup> Transportation costs, as measured by distance, were less of an inhibitor for white migrants. Larger cities, measured in terms of overall or black population, drew more white migrants, but the association is not a strong as among black migrants.

The two factors most indicative of selective destination choice in the white population are distance and native education levels. As in the black population, highly educated migrants were more likely to choose destinations with educated natives, and settle in cities farther from their state of birth. Other factors associated with selection in the black population, region and mean earnings, do not carry the same implications in the white population.<sup>32</sup>

#### 4.3 Selection in 1970

Analysis of IPUMS data presented in Section 2 above suggested that patterns of selective destination choice observed prior to World War II had largely disappeared by 1970. Table 5 and

<sup>&</sup>lt;sup>31</sup> This finding supports the contention that the South dummy variable measures discrimination-related disamenities in these regressions. As one would expect under this hypothesis, blacks exhibit a significantly more negative response than whites.

<sup>&</sup>lt;sup>32</sup> These differences in the forces underlying selection in the white and black populations could potentially explain the differences in migration patterns described in note 8 above. This pattern would have occurred if the importance of distance as a barrier to migration declined over time, while the importance of black aversion to Southern discrimination and responses to wage differentials grew over time. The evidence presented in the following section supports these notions; the importance of distance declined dramatically between 1940 and 1970, while black attitudes towards Southern destinations and cities with high average earnings became more comm on across education groups.

its companion Table 6 report and interpret the results of conditional logit models of the 1970 data, which show many similarities to, yet several important departures from, prewar patterns.<sup>33</sup>

As in the earlier time period, black migrants gravitated towards cities with high proxied mean earnings in the postwar era. The magnitude of the mean earnings effect, however, has declined substantially, and the degree of educational selectivity implied by the point estimates has also fallen.<sup>34</sup> Considering also the fact that the relative size of the North-South wage proxy gap fell considerably between 1940 and 1970, the overall importance of wages as an explanation for selective black migration fell substantially, as shown in Table 6. Whereas differential black responsiveness to differences in average wages predicted a migration probability ratio of 1.21 in 1940, the ratio is only 1.05 in 1970. Interestingly, convergence in migrant responses to average wages is also seen in the Southern-born white population in 1970, as the third and fourth columns of Table 5 show.<sup>35</sup>

The tendency for black migrants of all education levels to avoid cities with high-wage dispersion industries persists in 1970, though the coefficient estimates have fallen considerably relative to their 1940 values.<sup>36</sup> Because of the similarity in black migrant responses across education groups, and the similarity of Northern and Southern average values for this measure, wage dispersion shows no evidence of being the driving force behind selective migration. As in

<sup>&</sup>lt;sup>33</sup> As in the 1940 data, the city characteristics examined in 1970 are correlated with one another. The highest correlation is between lagged population and lagged black population, with a value of 0.66. Lagged black population also tends to be higher in the South, though meaningful within-region variation exists. Other correlations are at the 0.2 level in absolute value or below.

<sup>&</sup>lt;sup>34</sup> Direct comparison of the coefficients in Tables 5 and 7 should be undertaken with extreme caution, since migrants' set of alternatives changes, owing to changes in Census geography, between 1940 and 1970. Changes in the set of alternatives can produce changes in coefficient estimates when the Independence of Irrelevant Alternatives assumption is violated.

<sup>&</sup>lt;sup>35</sup> These results support Wright's [37] hypothesis that integration of the Northern and Southern labor markets accelerated after World War II.

<sup>&</sup>lt;sup>36</sup> As in 1940, controlling for an industry-based unemployment rate prox y measure do not influence this result.

1940, Southern white migrants behave differently than their black counterparts, seeking out cities with higher degrees of wage dispersion rather than avoiding them.<sup>37</sup>

As in 1940, migrants of both races and all education levels displayed a tendency to choose cities with high native education levels. The magnitude of this effect increases significantly in the later sample: relative to a reference city with native education equal to the Southern mean, a highly educated black migrant was 3.6 times more likely to choose the comparison city with native education equal to the Northern mean. The attraction of "educated" cities becomes more selective as well; the Northern residence probability ratio implied by the estimates in Tables 5 and 6 is 1.41, a value considerably greater than the observed probability ratios in Table 2b. The strong magnitude of this effect helps to rationalize the surprising result found in the next row of Table 5.

Strikingly, the disproportionate tendency for educated black migrants to exit the South observed in 1940 completely reversed by 1970. In 1970, highly-educated black migrants were more likely to choose a Southern destination than their less-educated counterparts, controlling for important destination attributes such as distance and average earnings. There are two non-mutually exclusive explanations for this reversal in the probability of exit. First, the aversion to Southern discrimination most prominent among educated migrants in 1940 may have spread to – and become more acute in – the lesser-educated segment of the black population. Second, the preference for Northern cities in the educated black population may have lessened, either because the South became a more acceptable place to live between 1940 and 1970, or because Northern cities developed disamenities of their own during the same time period. Interestingly, the

<sup>&</sup>lt;sup>37</sup> An instinctive reaction to this pattern would be to equate wage dispersion with labor mark et discrimination. It is important to recall, however, that the industry-based average wage and dispersion statistics are calculated separately for each race.

probability of exiting the South among white migrants decreases significantly with education, as was the case in 1940.

For migrants of all races and all education levels, the results indicate that distance was a significantly smaller barrier to migration in 1970 than it was in 1940. Highly educated white migrants actually show a slight propensity to choose cities at greater distances from their state of birth, other things equal. Relative to a reference city 550 miles away, highly educated black migrants were 23% less likely to select a city 950 miles away. Less educated black migrants were approximately 39% less likely to choose the more distant city. By contrast, in 1940 such migrants were over 80% less likely to make the same choice.<sup>38</sup> While distance clearly became less of a barrier to migration between 1940 and 1970, its importance as a cause of selectivity in migrant destination choice persists. Table 6 shows that the Northern residence probability ratio predicted on the basis of average distance is 1.25.

As was the case in 1940, the size of a city's overall and black population does not appear to play a strong role in selective destination choice in 1970. Table 5 shows that black migrants of all education levels were more likely to settle in cities with large existing black populations. Black migrants also display a uniform tendency to favor cities that were smaller in 1940 – a pattern opposite of that found in the earlier data.<sup>39</sup> Southern-born white migrants display the same pattern.

<sup>&</sup>lt;sup>38</sup> This unmistakable trend reflects the overall decrease in transportation and communication costs that occurred during this time period (Rhode and Strumpf [28]). In later years, migrants had less difficulty learning about distant locations, and faced a lower expense of actually reaching those locations.

<sup>&</sup>lt;sup>39</sup> Sample selection issues may drive the coefficients on lagged population in both Table 7 and Table 5. Cities with low levels of population in 1940 will only be included in a migrant's 1970 choice set if they experienced substantial population grow th during the intervening years. Because of this sample selection, the results will be predisposed to finding large migration flows into small cities. There is little reason to think the selection bias operates differently for highly- and less-educated migrants, however.

Overall, these results provide a rationale for the declining degree of selectivity in black migrant destination choice found in Tables 2a and 2b above. Between 1940 and 1970, the importance of two migrant "filtering" factors declined substantially. Holding other factors constant, cities in the North, and cities with higher-paying industries, attracted blacks from a broader range of the educational attainment spectrum in the later period. Selection continued in the later period can be attributed to the selective appeal of cities with highly educated natives, and to the continuing importance of distance as an inhibitor to migration.<sup>40</sup>

# 4.4 Cohort Effects or Period Effects?

Changes in migration patterns over time could reflect either cohort effects or period effects. Black migrants born in later years differed from their older counterparts in some important respects, notably absolute education levels. As Margo [23] documents, the individuals in the "less educated" segment of the younger cohorts in the 1970 sample have higher education levels, on average, than their counterparts in the 1940 sample. The patterns shown in Tables 3 and 5 might easily arise if distaste for Southern discrimination, or attraction to high wage levels, varied with the absolute, rather than relative, level of migrant education.<sup>41</sup>

Independent of cross-cohort differences, discrete historical events may have had the effect

<sup>&</sup>lt;sup>40</sup> Analysis of supplementary variables – segregation and median rent levels – in 1970 reveals some intriguing patterns. Black migrants continue to gravitate towards cities with higher costs of living and higher segregation levels after World W ar II. However, the selective attraction of high segregation is no longer in evidence – less-educated black migrants were actually more likely to select a segregated city than their more-educated counterparts in 1970. Vigdor [36] discusses the implications of this change in migration patterns for empirical estimation of the relationship between segregation and outcomes (Collins and Margo [9]}.

<sup>&</sup>lt;sup>41</sup> There is evidence to suggest that the skill level of less-educated migrants to the North, as measured by occupation, increased between 1940 and 1970. In 1940, 23.9% of employed, less-educated Southern-born blacks in the North worked in "skilled" occupations (professional, managerial, sales, craftsmen, operatives). In 1970, 46.8% of employed, less-educated Southern-born blacks in the North worked in skilled occupations. The fraction of employed, less-educated Southern-born whites in the North working in skilled occupations actually *decreased* over the same time period.

of inducing wholesale changes in black migrants' preferences and/or labor market opportunities (Donohue and Heckman [12]). New Deal-era agricultural and minimum wage policies may have eroded opportunities for blacks in the South (Wright [37]). World War II expanded employment opportunities for blacks in Northern industries; moreover participants in the war effort may have developed a new sense of resentment for legalized segregation and disenfranchisement (Lemann [22]). In subsequent decades, the Civil Rights movement, while drawing on this sense, may have further cemented it.

Tables 2a and 2b presented some evidence to support the period effect hypothesis, by showing that the migration probabilities of individual age cohorts changed between 1940 and 1970. Table 7 presents further analysis, to determine whether the factors identified above as being responsible for convergence in the probability of Northern residence between 1940 and 1970 apply to members of a single age cohort measured at two points in time.

In virtually every instance, Southern black migrants born between 1913 and 1922 follow the same migration patterns as their counterparts in other age cohorts in both 1940 and 1970. Native education is the most glaring exception – in 1940, black migrants in this age cohort show selectivity towards cities with highly educated natives. In some cases, on the other hand, the degree of selection along educational lines is considerably stronger in this group than in the black population at large. In 1940, for example, this age cohort shows much greater disparities in the probability of settling in a Southern city and in choosing a city with high wage industries than the black population at large. As in the population at large, the 1913-1922 birth cohort displays a marked change in selective migration patterns by 1970. The importance of distance as an inhibitor to migration declines substantially, although distance continues to play a selective role. The industry-based earnings measure coefficients have converged remarkably. The South coefficients have switched sign, and selection into cities with highly educated natives has increased. In all, the substantive conclusions taken away from this single-cohort analysis are essentially identical to those derived in sections 4.2 and 4.3. The evidence suggests that the changes in selection patterns over time cannot be attributed to differences in successive cohorts of Southern black migrants. Rather, it appears that individual preferences and opportunities changed sometime during or soon after World War II.<sup>42</sup>

# 5. Discussion and Conclusion

The selectivity of the Great Migration has been a topic of research interest for over sixty years. This paper's main contribution to the existing literature has been to describe and explain the changes in migrant selection patterns that occurred between the first major wave of black migration, which ended prior to the Great Depression, and the second wave, which began during World War II and lasted another quarter century. In 1940, educated blacks were much more likely to choose a Northern destination conditional on migrating. By 1970, this was no longer the case. This change in the pattern of selective destination choice are clues to the understanding of migrants' decision-making processes.

The results presented above suggest that the decline in selective destination choice between 1940 and 1970 coincides with changes in the selective attractiveness of cities with certain characteristics. Where educated migrants clearly gravitated towards cities with high proxied earnings before 1940, there is little evidence of a strong selective pull afterward.

 $<sup>^{42}</sup>$  To investigate further, I compared Northern residence probabilities for blacks born between 1913 and 1932 who identified themselves as veterans of World War II to members of the same cohort who did not. Spouses of veterans were also accorded veteran status. Southern-born black veterans were more likely to have migrated North than non-veterans (40.8% versus 34.5%). Moreover, the gap in Northem residence probabilities between high and low education groups was lower in the veteran population (47% versus 34%) than in the non-veteran population (45% versus 27%).

Educated migrants were less likely to choose Southern cities, other things equal, before 1940, but more likely to choose them afterward. Distance became a less important inhibitor to migration. Finally, the selective appeal of cities with highly educated natives increased between 1940 and 1970. The evidence presented in Table 7 shows that these changes occurred within age cohorts, and was not solely the result of between-generation differences in black preferences and opportunities.

This investigation has uncovered several interesting patterns that merit further research. In both 1940 and 1970, educated black migrants avoided cities with high earnings variance; an economic model of migration choices would predict the opposite. Southern-born white migrants, by contrast, conform to the Roy model's predictions. Borrowing a term from Kain [20], one might ask whether there was a "spatial mismatch" in the Great Migration. That is to say, did highly skilled blacks disproportionately choose to reside in cities where the returns to skill were low?

More generally, the uneven distribution of blacks by education level across cities might very well have implications for the human capital and socioeconomic outcomes of later generations of native-born blacks. Existing literature on neighborhoods and ethnic capital (Borjas [2]; Cutler et al. [10]) has found strong correlations between an individual's outcomes and the characteristics of that individual's fellow ethnic or racial group members, especially in highly segregated environments. Further research on the link between migration decisions, incentives for human capital accumulation, and the outcomes of subsequent generations could explain several empirical puzzles.

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Birth year cohort	Above cohort/state specific median education	Below cohort/state specific median education	Ratio of Probabilities
1913-1922	0.260	0.055	4.73
1903-1912	0.304	0.112	2.71
1893-1902	0.327	0.145	2.26
Before 1893	0.242	0.120	2.02

Table 1a: The Probability of Northern Residence Conditional on Southern Birth, 1940: Black population

Table 1b: The Probability of Northern Residence Conditional on Southern Birth, 1970: Black population

Birth year cohort	Above cohort/state specific median education	Below cohort/state specific median education	Ratio of Probabilities
1943-1952	0.322	0.234	1.38
1933-1942	0.436	0.301	1.45
1923-1932	0.456	0.301	1.51
1913-1922	0.459	0.270	1.70
1903-1912	0.398	0.251	1.59
Before 1903	0.371	0.214	1.73

Birth year cohort	Above cohort/state specific median education	Below cohort/state specific median education	Ratio of Probabilities
1913-1922	0.637	0.346	1.84
1903-1912	0.627	0.434	1.44
1893-1902	0.657	0.456	1.44
Before 1893	0.569	0.423	1.35

Table 2a: The Probability of Northern Residence Conditional on Southern Birth andIntersate Migration, 1940: Black population

 

 Table 2b: The Probability of Northern Residence Conditional on Southern Birth and Interstate Migration, 1970: Black population

Birth year cohort	Above cohort/state specific median education	Below cohort/state specific median education	Ratio of Probabilities
1943-1952	0.745	0.727	1.02
1933-1942	0.793	0.747	1.06
1923-1932	0.797	0.740	1.08
1913-1922	0.779	0.684	1.14
1903-1912	0.777	0.677	1.15
Before 1903	0.763	0.626	1.22

	Black M	ligrants	White Migrants		
Independent	Above Average	Below Average	Above Average	Below Average	
Variable	Education	Education	Education	Education	
Industry-Based Mean Earnings (/1000)	13.94** (0.547)	8.760 <sup>**</sup> (0.714)	-8.303** (0.250)	-6.182** (0.396)	
Industry-Based Coeff. of Variation in Earnings	-10.68** (0.477)	-8.564** (0.630)	0.304 (0.262)	0.186 (0.397)	
Age-corrected Average Native Education	0.542 <sup>**</sup> (0.024)	0.370 <sup>**</sup> (0.030)	0.994 <sup>**</sup> (0.016)	0.832 <sup>**</sup> (0.026)	
South Indicator	-0.524**	-0.467**	$0.411^{**}$	0.156 <sup>**</sup>	
	(0.047)	(0.059)	(0.028)	(0.044)	
Distance in Miles (/100)	-0.337 <sup>**</sup>	-0.418 <sup>**</sup>	-0.114 <sup>**</sup>	-0.167 <sup>**</sup>	
	(0.006)	(0.008)	(0.002)	(0.004)	
1910 Population	0.384 <sup>**</sup>	0.317 <sup>**</sup>	$0.128^{**}$	0.112 <sup>**</sup>	
(millions)	(0.012)	(0.017)	(0.012)	(0.018)	
1910 Black	$0.028^{**}$	$0.027^{**}$	$0.021^{**}$	$0.020^{**}$	
Population (/1000)	(0.001)	(0.001)	(0.001)	(0.001)	
Pseudo-R <sup>2</sup>	0.262	0.253	0.081	0.092	

Table 3: Conditional Logit Models of Destination Choice, 1940 Dependent Variable: Indicator that migrant *i* chose city *c*.

Note: Standard errors in parentheses. Distance is measured from city c to the population centroid of migrant i's state of birth. Industry-based statistics assign each city a value based on its industrial composition as of 1940, and the earnings of blacks or whites working in that industry nationwide in the same year. The native education measure is the residual from a regression of years of schooling on categorical age variables and a gender control. Migrants' choice sets include 96 cities.

\*\* denotes a coefficient significant at the 5% level, \* the 10% level.

City Characteristics	Probability of highly educated black migrant choosing city	Probability of less educated black migrant choosing city	Northern residence probability ratio predicted by migrant responses to:	
Reference city: \$513 mean earnings	1.0%	1.0%		
Identical city with \$561 mean earnings	1.9%	1.5%	Mean earnings: 1.27	
Reference city: earnings c.v.=0.162	1.0%	1.0%	Earnings dispersion:	
Identical city with earnings c.v.=0.160	1.0%	1.0%	1.00	
Reference city: native ed. = 0.024	1.0%	1.0%	Native education: 1.22	
Identical city with native ed. = 1.176	1.9%	1.5%		
Reference city: in South	1.0 %	1.0%	Generalized South effect: 1.06	
Identical city in North	1.7%	1.6%		
Reference city: 550 miles distant	1.0%	1.0%	Distance: 1.39	
Identical city 950 miles distant	0.25%	0.18%		
Reference city: 1910 pop. 113,000	1.0%	1.0%	Lagged population:	
Identical city with 1910 pop. 310,000	1.1%	1.1%	1.01	
Reference city: 1910 black pop. 30,500	1.0%	1.0%	Lagged black	
Identical city with 1910 black pop. 7,900	0.53%	0.54%	population: 0.99	

Table 4: Interpreting the 1940 Conditional Logit results

	Black M	ligrants	White Migrants	
Independent	Above Average	Below Average	Above Average	Below Average
Variable	Education	Education	Education	Education
Industry-Based Mean Earnings (/1000)	2.336 <sup>**</sup> (0.063)	1.627 <sup>**</sup> (0.077)	-0.016 (0.026)	-0.086 <sup>**</sup> (0.036)
Industry-Based Coeff. of Variation in Earnings	-3.510** (0.303)	-3.438** (0.386)	0.638 <sup>**</sup> (0.155)	0.517 <sup>**</sup> (0.219)
Age-Corrected Average Native Education	1.778 <sup>**</sup> (0.029)	1.294** (0.033)	0.869 <sup>**</sup> (0.013)	1.003 <sup>**</sup> (0.019)
South Indicator	0.653 <sup>**</sup>	0.324 <sup>**</sup>	0.830 <sup>**</sup>	0.504 <sup>**</sup>
	(0.033)	(0.037)	(0.015)	(0.021)
Distance in Miles (/100)	-0.066 <sup>**</sup>	-0.122 <sup>**</sup>	-0.030 <sup>**</sup>	-0.073 <sup>**</sup>
	(0.002)	(0.003)	(0.001)	(0.002)
1940 Population	-0.503**	-0.428 <sup>**</sup>	-0.388 <sup>**</sup>	-0.398 <sup>**</sup>
(millions)	(0.012)	(0.015)	(0.010)	(0.014)
1940 Black	0.016 <sup>**</sup>	$0.014^{**}$	0.010 <sup>**</sup>	0.009 <sup>**</sup>
Population (/1000)	(0.001)	(0.001)	(0.001)	(0.001)
Pseudo-R <sup>2</sup>	0.202	0.172	0.045	0.046

Table 5: Conditional Logit Models of Destination Choice, 1970 Dependent Variable: Indicator that migrant *i* chose city *c*.

Note: Standard errors in parentheses. Distance is measured from city c to the population centroid of migrant *i*'s state of birth. Industry-based statistics assign each city a value based on its industrial composition as of 1970, and the earnings of blacks or whites working in that industry nationwide in the same year. The native education measure is the residual from a regression of years of schooling on categorical age variables and a gender control. Migrants' choice sets include 110 metropolitan areas.

\*\* denotes a coefficient significant at the 5% level, \* the 10% level.

City Characteristics	Probability of highly educated black migrant choosing city	Probability of less educated black migrant choosing city	Northern residence probability ratio predicted by migrant responses to:	
Reference city: \$3515 mean earnings	1.0%	1.0%		
Identical city with \$3588 mean earnings	1.2%	1.1%	Mean earnings: 1.05	
Reference city: earnings c.v.=0.127	1.0% 1.0%		Earnings dispersion:	
Identical city with earnings c.v.=0.128	1.0%	1.0%	1.00	
Reference city: native ed. = -0.492	1.0%	1.0%	Native education: 1.41	
Identical city with native $ed = 0.236$	3.6%	2.5%		
Reference city: in South	1.0 %	1.0%	Generalized South effect: 0.72	
Identical city in North	0.52%	0.73%		
Reference city: 550 miles distant	1.0%	1.0%	Distance: 1.25	
Identical city 950 miles distant	0.77%	0.61%		
Reference city: 1940 pop. 219,000	1.0%	1.0%	Lagged population:	
Identical city with 1940 pop. 399,000	0.91%	0.92%	0.99	
Reference city: 1940 black pop. 54,800	1.0%	1.0%	Lagged black	
Identical city with 1940 black pop. 27,100	0.64%	0.68%		

Table 6: Interpreting the 1970 Conditional Logit results

	As of	1940	As of 1970	
Independent	Above Average	Below Average	Above Average	Below Average
Variable	Education	Education	Education	Education
Industry-Based Mean Earnings (/1000)	12.34 <sup>**</sup> (1.192)	2.390 (1.624)	2.721 <sup>**</sup> (0.150)	1.314 <sup>**</sup> (0.180)
Industry-Based Coeff. of Variation in Earnings	-7.315** (1.003)	-4.463** (1.142)	-5.210 <sup>**</sup> (0.720)	-2.248 <sup>**</sup> (0.893)
Age-corrected Average Native Education	0.444 <sup>**</sup> (0.051)	0.472 <sup>**</sup> (0.066)	1.834 <sup>**</sup> (0.070)	1.323 <sup>**</sup> (0.077)
South Indicator	$-0.670^{**}$	-0.228 <sup>**</sup>	$0.596^{**}$	0.203 <sup>**</sup>
	(0.101)	(0.133)	(0.079)	(0.087)
Distance in Miles (/100)	-0.355**	-0.446 <sup>**</sup>	-0.072 <sup>**</sup>	-0.134 <sup>**</sup>
	(0.013)	(0.019)	(0.006)	(0.008)
Lagged Population (millions)	0.397 <sup>**</sup>	0.373 <sup>**</sup>	-0.541**	-0.497**
	(0.027)	(0.038)	(0.027)	(0.035)
Lagged Black	0.029 <sup>**</sup>	0.028 <sup>**</sup>	$0.016^{**}$	0.015 <sup>**</sup>
Population (/1000)	(0.001)	(0.001)	(0.001)	(0.001)
Pseudo-R <sup>2</sup>	0.270	0.284	0.216	0.182

# Table 7: Conditional Logit Models of Black Destination Choice1913-1922 Birth Year CohortDependent Variable: Indicator that migrant *i* chose city *c*.

Note: Standard errors in parentheses. Distance is measured from city c to the population centroid of migrant *i*'s state of birth. Industry-based statistics assign each city a value based on its industrial composition as of 1940 or 1970, and the earnings of blacks or whites working in that industry nationwide in the same year.

\*\* denotes a coefficient significant at the 5% level, \* the 10% level.

State	1913-1922	1903-1912	1893-1902	Before 1893
Alabama	8	7	6	4
Arkansas	8	7.5	6	4
District of Columbia	9	7	7	5
Delaware	9	8.5	8	6
Florida	8	8	6	5
Georgia	7	6	5	4
Kentucky	9	8	8	6
Louisiana	8	6	5	4
Maryland	9	8	6	5
Mississippi	8	6	6	4
Missouri	10	9	8	6
North Carolina	8	7	6	4
Oklahoma	9	8	7	6
South Carolina	8	6	6	4
Tennessee	8	8	6	5
Texas	9	8	7	5
Virginia	8	7	6	5
West Virginia	10	8	8	7

Table A1: Median years of schooling completed among Black interstate migrants, by birth year cohort and state, 1940.

State	1943-1952	1933-1942	1923-1932	1913-1922	1903-1912	Before 1903
Alabama	12	11.5	10	8	6.5	5
Arkansas	12	12	10	8	7.5	5.5
District of Columbia	12	12	10	9.5	8	6.5
Delaware	12	12	12	10	8	8
Florida	12	12	11	9.5	7	7
Georgia	11.5	11	9	8	6	5
Kentucky	12	12	11	10	8	7
Louisiana	12	11.5	10	8	6.5	5
Maryland	12	11.5	10	8.5	7	6.5
Mississippi	11.5	10.5	9	8	6	5
Missouri	12	12	11.5	11	9.5	8
North Carolina	12	12	10	8	7	6
Oklahoma	12	12	12	10	8	7.5
South Carolina	12	11	9	8	6.5	5
Tennessee	12	12	10	8.5	8	6
Texas	12	12	11.5	10	8	7
Virginia	12	11	10	8	7	5.5
West Virginia	12	12	11.5	10.5	8	8

Table A2: Median years of schooling completed among Black interstate migrants, by birthyear cohort and state, 1970.