

Competition in the Promised Land: Black Migration and Northern Labor Markets, 1940-1970

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Abstract: Black migration from the South represented a large increase in labor supply above the Mason-Dixon line during and after World War II. The skill profile of new arrivals overlapped with that of the existing black workforce. Following Borjas (2003), I use variation in migrant supply shocks across skill groups – defined by educational attainment and work experience – over time to identify the impact of southern migration on northern black and white workers. A five percent increase in the labor force due to southern black migration (the mean across skill groups) would have reduced the earnings of black workers relative to whites by 3-5 percent. The differential effect by race is consistent with patterns of racial segregation by occupation and seniority level. If not for the southern influx, the North would have likely experienced faster convergence in black-white earnings.

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I. Introduction

Between 1940 and 1970, over four million African-Americans left the rural South for the economic promise of the industrial North and West. The share of blacks living in the South fell from 77 percent in 1940 to 53 percent in 1970. This population flow coincided with two decades of dramatic convergence in the wages of the average black and white worker – the 1940s and 1960s (Donohue and Heckman, 1991). Relocating from the low wage South to the high wage North was a central cause of black economic advancement in the 1940s (Myrdal, 1944; Smith and Welch, 1989; Margo, 1995). Maloney (1994) estimates that North-South migration accounted for around twenty percent of racial convergence during the war decade.¹ By the 1960s, the migrant flow out of the South had slowed, and even reversed.

While migration benefited those blacks who left the South during the 1940s, the arrival of this “great reservoir of labor” in the North – so termed, presciently, by W.E.B. Du Bois in the 1920s – may have had negative consequences for the existing black community in the form of competition in the labor and housing markets. Black migrants represented a substantial increase in the labor supply above the Mason-Dixon line, particularly in the low-skilled segment of the workforce in which existing black workers were concentrated.²

This paper investigates the impact of southern migration – both white and black – on the earnings of the existing northern workforce. Migrants should have the strongest negative effect on workers that are close substitutes in production. I begin in Section II by documenting a

¹ Over a longer period, Smith and Welch (1989) demonstrate that inter-regional migration accounts for between 10 and 20 percent of the black-white wage convergence from 1940-1980. Other important factors in this period include the demand for low-skilled work in war industries, augmented by Roosevelt’s executive order barring racial discrimination, and the resulting pattern of wage compression between the high- and low-skilled (Collins, 2001; Goldin and Margo, 1992).

² Lieberman (1980) and Wilson (1987) argue further that low-skilled migrants harmed the economic position of higher-skilled northern blacks through statistical discrimination. By lowering the mean skill level in the black community, migration might cause white employers to negatively revise their perception of African-Americans *as a group*. However, employers may have used accent or dress to distinguish between the northern- and southern-born, as some do with West Indians and native-born African Americans today (Waters, 1999).

negative correlation between black in-migration to the North and the extent of earnings convergence between northern blacks and northern whites by educational attainment, and across experience levels within education categories. The third section introduces a more formal estimation procedure. Following Borjas (2003), I partition the northern economy into skill groups according to education and work experience.³ Workers are assumed to be perfect substitutes with other members of their skill cell, and imperfect substitutes (to an equal degree) with members of other cells. Each group begins in 1940 with a stock of black southern migrants, and receives a distinct flow of new migrants in subsequent decades. I use this over-time variation to identify the effect of migrant-based supply shocks on wages of competing ‘native’ workers.

The results of this exercise are presented in section IV. I find that a flow of black southern migration large enough to increase the supply of the labor force by 5 percent (roughly the mean increase between 1940 and 1960) would have reduced the annual earnings of existing black workers relative to similarly-skilled whites by 3-5 percent. This elasticity is slightly larger than Borjas’s (2003) estimate for the effect of immigrants on native workers in the current period.

Any study of the impact of migration on a receiving economy is subject to two sources of bias – the response of native workers to migrant arrivals and the potentially endogenous choices of migrants themselves. The benefit of using variation within skill groups, defined by education and experience levels, is that, whereas native workers can move away from port-of-entry cities or switch out of migrant-intensive industries and occupations, education and work experience (a function of age and education) are largely determined early in life. Yet, it is still the case that northern workers facing competition from southern arrivals can relocate to the South. I find some

³ Throughout the paper, I collectively refer to all non-southern states as “the North.” This region includes the Northeast, the Midwest, and the West, as well as three states usually classed with the South (Delaware, the District of Columbia, and Maryland). All states in this group received net black in-migration during this period.

evidence of induced migration among white workers, but none among competing black workers. The racial disparity in the propensity to move South may account for some of the concentrated impact of black migrants on the earnings of black natives.

Using variation across education-experience groups also precludes bias that might arise from the choices migrants make upon arriving in their destination. (For example, if migrants cluster in prosperous cities or lucrative occupations, comparisons across high- and low-migration entities will be biased upward.) Migrants are unlikely to return to school upon arriving in the North. However, if southerners in skill groups experiencing wage growth in the North are the most likely to relocate, migration may still be positively associated with annual earnings. I instrument for southern arrivals with the stock of southern black men by skill cell – or the pool of men ‘at risk’ to migrate. This counterfactual measure indicates what the migration shock would have been if *all* eligible southerners had moved North, thus eliminating the migration choice. In this specification, the point estimates are somewhat more negative.

The major finding in this paper is that black migrants exerted competitive pressure only on black workers, even within skill groups. In a similar vein, Sundstrom (2005) demonstrates that the black-white wage gap varies positively with the relative supply of black workers across metropolitan areas. This pattern is consistent with two forms of employment segregation, which are explored in more detail in section V – the channeling of black workers into particular ‘negro jobs,’ or limited opportunities for promotions within jobs. In addition, the sustained influx of southern black migrants, coupled with the low degree of substitutability between black and white workers, may help explain the surprising fact that racial convergence was faster in the South than in the North throughout this period.

II. Patterns of Southern Migration and Black-White Wage Convergence in the North

The migration of both black and white men from the South generated large increases in the northern labor supply from 1940 to 1970. Table 1 presents the share of the northern labor force that was born in the South by race. Changes in this southern-born share is a reasonable approximation of new in-migration.⁴ By this measure, the largest in-flow was in the war decade, when the southern-born share of the workforce increased by 2.3 percentage points (38 percent). This magnitude is comparable to immigration to the United States in the 1990s, when the foreign-born share of the population increased from 7.4 to 10.3 percent (39 percent). Southern migration slowed in the 1950s, and then reversed in the 1960s. Blacks represented around 40 percent of the southern migrant flow to the North.⁵

Throughout this period, the earnings of black and white men were more equal in the North than in the South. However, both regions experienced a similar time pattern of earnings convergence, with strong convergence in the 1940s and 1960s interrupted by a decade of stability in the black-white earnings ratio in the 1950s. Table 2 displays the black-white earnings gap in log points by region and decade, and the change in these gaps over time. In the two convergence decades, blacks in the South experienced larger advancements relative to whites than in the North. Donohue and Heckman (1991) previously documented this pattern for the 1960s. Because the outflow from the South had effectively ended by 1960, they interpret strong southern convergence in the 1960s as indirect evidence of the importance of federal intervention in increasing the demand for black workers in the South. However, the relative strength of

⁴ The southern-born share could also change over time without new in-migration due to differential mortality by region of birth, or due to the aging out of older, low-migration cohorts. The total workforce shares presented here are nearly identical to the average of cohort-specific shares (not shown).

⁵ This population flow is known as the Great Black Migration, rather than the Great Southern Migration, because black *out*-migration rates from the South were far higher than their white counterparts. However, as Table 1 makes clear, both groups had a similar impact on the receiving labor market. Gregory (2005) corrects the over-emphasis in the historical literature on black migration alone.

southern convergence is also characteristic of the 1940s, a period of strong demand for industrial labor in the North. The 1940s was the decade of the largest black migrant flow, suggesting that weaker northern convergence in this period could be due to the increase in the relative size of the black labor force.

If migration hindered black economic advancement in the North, we would expect to see slower black-white wage convergence in the education or experience groups that received the largest migrant flows. Figure 1 graphs the change in the black-white earnings ratio by education category alongside the change in the share of the labor force made up of black southern migrants in each education group over the 1940s and the 1950s. Figure 2 conducts the same exercise for experience levels *within* education categories.

Figure 1 divides the northern labor force into seven education groups – three groups of common school attendees (workers with 0-2, 3-5 and 6-7 years of completed schooling); common school graduates (8 years); high school attendees (9-11 years); high school graduates (12 years); and a composite group of college attendees and graduates (13 or more years). In the 1940s, the strength of racial earnings convergence increased with education level (except for men with a high school degree, or above). Migration followed an opposing trend, with the largest migration shocks occurring among the lowest education groups. The black migrant share of men with 0-2 years of education increased by 5 percentage points, while the share for men with 12 or more years of education increased by less than 1 percentage point. In 1950, the pattern was reversed. While, on average, the North experienced no earnings convergence in this decade, this average masks a steep pattern by education. The least-educated experienced strong convergence, while the most educated underwent some divergence. Again, migration trends were the opposite.

The least educated actually *lost* migrant share, and the largest increase in migrant share was among high school graduates.

Turning now to Figure 2, I aggregate men into three education categories – less than eight, 8-11 or 12 or more years of schooling – and sub-divide these education groups into five-year experience intervals. (Section III describes the construction of the experience variable in more detail). For illustration, I consider only changes over the 1940s. For the least educated category, there is little variation in the migrant shock across experience groups in this decade. The black migrant share increases between 4 and 6 percentage points in each experience level, with the exception of a dip for the 6-10 year experience group, which is likely due to sampling variation.

In contrast, migration into the middle education category experiences a very sharp age pattern, with the change in the migrant share peaking among men with 11-15 years of experience. Correspondingly, older and younger workers experience faster earnings convergence (this is particularly true among workers with 26-30 years of experience). The overall migrant flow into the highest education group is smaller, with a peak change of 0.7 percentage points for men with 26-35 years of experience. However, in 1940, only 1.8 percent of northern high school graduates were black, and so, in percentage terms, this in-migration is substantial. Older black workers lose ground against similarly-skilled whites.

III. Data and Estimation Strategy

The patterns in the previous section provide suggestive evidence that southern migration hindered relative black economic advancement. To investigate the impact of southern migration on the earnings of northern ‘natives’ more formally, I divide the northern economy into skill

groups, defined by education and work experience. Each of these skill groups experienced a different supply shock due to southern in-migration. I use this variation to explore the relationship between the size of the migrant flow and changes in average annual earnings for northern-born men by race.

This method, due to Borjas (2003), addresses two shortcomings of the standard local labor market approach to studying the economic impact of immigration.⁶ First, by treating the entire northern economy as a single labor market, it allows for factor flows across areas in response to local supply shocks, rather than assuming that the effect of immigration will be concentrated in port-of-entry cities. In addition, this approach avoids the endogeneity bias that arises if immigrants choose to locate in economically prosperous markets.⁷

Using variation by skill group is not without its own problems. In the next section, I will address the potential for bias if southern arrivals encourage the existing northern workforce to relocate to the South, or if migrants in skill groups experiencing wage growth are disproportionately attracted northward.

The skill group-based method also rests on two restrictive assumptions about the nature of production functions. In particular, we must imagine an economy in which workers are both perfectly interchangeable within a skill group – say, young common school graduates – and equally non-substitutable with members of “close” and “distant” skill groups (for example, older common school graduates vs. older men with a high school degree). While the assumption of perfect substitution with skill groups may seem the more innocuous, I will show below that it

⁶ Representative studies include Grossman, 1982; Borjas, 1987; Card, 1990; Altonji and Card, 1991; and Card, 2001. For a review of the literature, see Friedberg and Hunt, 1995.

⁷ Beyond these conceptual concerns, practical problems undermine the local labor market design during this period. First, public use Census micro-data does not identify an individual’s location beyond his state of residence in 1960, preventing the use of metropolitan area as a unit of analysis. Furthermore, even at the state level, many cells do not have large enough samples of native black northerners to construct dependent variables by race. This problem is particularly severe in 1950, when certain key variables were collected only for one “sample line” individual per household, leaving what amounts to a 1/300 sample of the population.

may not hold in the case of race. The second assumption may be implausible in its strongest form, but it is a reasonable first approximation of reality, and has become a standard technique to test aspects of human capital theory (see Welch, 1979; Card and Lemieux, 2001). The remainder of the section describes the implementation of this estimation strategy.

A. Defining Skill Groups

Using micro-Census data from 1940-1970 (Ruggles, et al., 2004), I define a sample of men active in the northern labor force and partition it into skill groups. I restrict my attention to men between the ages 18 and 64 who do not reside in group quarters, are not in the armed forces or the farm sector, and report a current occupation. From this sample, I count the total number of workers in each skill cell by race and region of birth.⁸

Skill groups are defined by five education categories and eight experience levels. Similar to the education groups defined above, I divide common school attendees into two groups (0-4 and 5-7 years of schooling), and form separate groups for common school graduates (8 years), high school attendees (9-11 years), and men with at least a high school degree (12 or more years).

Because the Census does not collect information on actual work experience, I must infer labor force entry from age and completed schooling. I modify the standard approach by defining work experience as the age minus $\max \{ \text{education} - 6, 12 \}$. That is, I assume that anyone with fewer than six years of education entered the labor force at the age of 13, or, alternatively, that any work experience gathered as a young child does not earn a market return. I focus on

⁸ I consider two racial groups: black and non-black. While I refer to the non-black group as ‘white’ throughout the paper, it contains a small share of Asians and Native Americans. I drop individuals whose birthplace is not reported (only 0.1 percent of sample).

individuals with between one and 40 years of work experience, and divide this set into five eight-year intervals (1 to 5 years of experience, 6 to 10 years, and so on).

B. Measuring Migrant Supply Shocks

Anyone who was born in the South and is currently residing in the North is considered to be a migrant, regardless of his arrival date.⁹ The migrant penetration in a skill group is the share of workers in that category who were born in the south. For a skill group (i, j, t) , where i indexes education level, j work experience, and t year, this share can be written:

$$p_{ijt} = \frac{M_{ijt}}{(M_{ijt} + N_{ijt})} \quad (1)$$

M_{ijt} is the number of migrants in cell (i, j, t) and N_{ijt} is the number of northern ‘natives.’ I calculate this share separately for black and white southerners.

C. Dependent Variable and Estimating Equation

I recover the mean annual earnings by skill group (Y_{ijt}) separately for northern-born blacks and whites. In addition to the sample restrictions outlined above, men in this calculation cannot be enrolled in school or self-employed, and must have worked at least 40 weeks in the past year.¹⁰

⁹ I am unable to observe the inter-regional migration activity of the foreign-born. Implicitly, I assume here that the foreign-born do not relocate from South to North once they enter the country. The foreign-born are included with northern-born natives in calculating the dependent variables. The results do not qualitatively change if I restrict the sample to the native-born.

¹⁰ Following Goldin and Margo (1992), I exclude full-time workers who report making less than one-half of the prevailing federal minimum wage. I also replace top-coded incomes with 1.4 times the top-code.

The last two restrictions are added to ensure comparability between Census years.¹¹ By limiting my attention to full-time workers, I am unable to examine the two margins – wages and work opportunities – by which migrants might have affected annual earnings.

Pooling data across skill groups and Census years, I estimate the following equation separately by race:

$$Y_{ijt} = \beta p_{ijt} + s_i + x_j + \tau_t + (s_i \cdot x_j) + (s_i \cdot \tau_t) + (x_j \cdot \tau_t) + \xi_{ijt}. \quad (2)$$

s_i is a vector of dummy variables indicating a group's education level, x_j is a vector of work experience and τ_t denotes a Census year. The main effects (s_i, x_j, τ_t) control for fixed differences in earnings by education, experience and time period. The interactions ($s_i \cdot \tau_t$) and ($x_j \cdot \tau_t$) permit the importance of schooling and experience to change over time, and the interaction ($s_i \cdot x_j$) allows experience profiles to differ by education. These interactions almost saturate the model; the impact of migration on labor market outcomes is identified by the omitted interaction, ($s_i \cdot x_j \cdot \tau_t$), or changes in earnings by education-experience cell over time. Standard errors are clustered by skill group. Summary statistics are presented in Appendix Table 1.

IV. The Effect of Southern Migration on Earnings of Northern Workers

This section investigates whether large in-flows of black southerners reduces the annual earnings of similarly-skilled workers. I primarily partition the labor market by educational attainment and experience level, but also compare this approach to divisions by broad occupation category or by job. I address the biases that might arise if southern arrivals encourage northern natives to

¹¹ In 1940, the Census collected detailed information for wages and salaries only, and not for self-employment income. Furthermore, the 1940 Census asked workers to report weeks worked in “equivalent full time weeks,” likely interpreted as a 40 hour week. In subsequent years, the Census counted any week in which the respondent had worked for pay as a week worked. In line with Margo (1995), I restrict my sample to full-time workers to diminish any bias introduced by this definitional change.

relocate to South, or if southern migrants choose to move northward when northern wages in their skill group are high.

A. The basic relationship between black migration and annual earnings

The main results for this section are presented in Table 3. The first row estimates equation 2 within skill groups defined by education and experience level. The variable of interest is the share of each group that is made up of black southern migrants, and the dependent variables considered include the logarithm of annual earnings for northern-born black men, for northern-born white men, and the difference between the two. In this base specification, all observations are weighted by the size of the underlying black sample used to calculate mean annual earnings. For any cell with fewer than five black natives (10 cells), I replace mean native earnings with mean earnings for all blacks in the North. I consider different weighting schemes and other robustness checks in Table 4.

The estimate in column 1 indicates that black migration reduces earnings of competing black workers relative to similarly-skilled whites. The coefficient for the black/white earnings ratio is significant at 8 percent level, and is the sum of a negative (though insignificant) effect on black earnings and positive effect on white earnings. A positive effect of black migration on white earnings is consistent with a taste-based model of discrimination, in which white employees must be compensated in order to work with blacks (Becker, 1971). Another explanation could be that black workers were complementary with white workers *even within education-experience groups*. Section V documents that the distribution of jobs held by black workers barely overlapped with that of similarly-skilled whites, with blacks concentrated in low-skilled service occupations or in the most menial tasks within factories.

The coefficient on the migrant supply shock, β , indicates the change in relative earnings associated with a one percentage point increase in a skill group's black migrant share. It is useful to convert this coefficient into an elasticity. Following Borjas (2003), define m_{ijt} as M_{ijt}/N_{ijt} , or the percentage increase in the labor supply of skill group i - j in time t due to southern migration. We can express the earnings elasticity as $d(\log Y_{ijt})/d m_{ijt} = \beta/(1 + m_{ijt})^2$. By 1960, at the height of the migration, black migrants had increased the labor force of the average skill group by 11 percent. Thus, to convert β into an elasticity, I multiply the coefficients by 0.81. Between 1940 and 1960, the average skill group experienced a black migrant shock of nearly 5 percent. According to this estimate, a shock of this size would lead to a 2.9 percent ($= 0.725 \cdot 0.81 \cdot 5.0$) reduction in the annual earnings of northern-born black men.

B. Correcting for endogenous migration choices

The OLS estimate will be biased upward if the size of the southern flow is endogenous to northern economic conditions. Southerners will relocate if their expected lifetime earnings in the North exceed their southern equivalent by at least some moving cost (Sjaastad, 1962). In addition, measurement error in the black migrant share, which, being generated from a 1 percent sample of the Census, often is calculated from small skill cells, could bias the estimates toward zero.

Both of these concerns can be addressed by instrumenting for the black migrant share, which I do in the second row of Table 3. The instrument is a counterfactual black migrant share which replaces the numerator of the actual share (the number of black men who were born in the South and moved North) with the total number of southern-born black men. In other words, the instrument captures the supply of *potential* migrants, which includes both those who chose to

move and those who did not. Not surprisingly, this counterfactual share predicts the actual share in the first stage (coeff. = 0.066, s.e. = 0.007). The coefficient implies that moving from a skill group with no black southerners to one with equal number of black southerners and native northerners would increase the actual black migrant share from zero to 6.6 percent. As expected, after instrumenting the coefficient becomes more negative. Now the 5 percent black migrant shock from 1940-1960 is associated with 3.5 percent decline in the black to white earnings ratio.

C. Redefining skill groups by occupation or job

Thus far, I have relied on education as a proxy for underlying skill. At mid-century, when black workers earned very low returns to schooling, one might think that occupation is a better skill indicator. In the third row, I repeat the same exercise, but replace the five education categories with broad occupation groupings. I adopt the standardized 1950 occupation classification, and consider six one-digit occupations: professional/managerial; clerical/sales; crafts; operatives; unskilled labor; and service.

The drawback of using an occupation-based definition of skill is that it offers natives more latitude to react to migrant arrivals. Unlike education, which tends to be accumulated early in life (though, in theory, could be acquired as an adult), workers can readily switch occupations by paying a training cost. Furthermore, the group of natives who do so might not be random, but may be positively selected on ability. Selective occupational upgrading will generate a spurious negative correlation between migration and annual earnings.

Perhaps as a result, the coefficient on the black-white earnings ratio is more negative in this specification. To translate the coefficient into an elasticity, I multiply by 0.86. A five percent migration shock leads to a 5.8 percent decline in earnings. However, the average occupation-

experience group received a smaller shock, on the order of 3 percent. This smaller shock would have generated a 3.5 percent decline in earnings, which is similar to the estimates above. Note also that in this specification, the negative effect of black migration on mean black earnings is significant.

It is tempting to narrow the skill groups even further and compare the earnings of workers in jobs that received large migrant shocks to those in less migrant-intensive jobs. However, a large share of black migrants were agricultural workers in the South, and selected among various (low-skill) jobs once they arrived in the North. Migrants were likely to enter jobs that promised high wages for black workers, a pattern that is likely to bias estimates upward. To demonstrate the severity of this bias, I redefine skill groups using the six most common jobs held by black men over this period – mechanic, cook, janitor, mail carrier, porter, and truck driver – and the same eight experience intervals.¹² The coefficients, which are presented in the fourth row, are all positive, indicating that ignoring the endogenous choices of migrants would lead one to entirely incorrect inferences.¹³

D. Robustness checks

Table 4 returns to the preferred specification, which defines skill groups using education and experience levels, and tests the robustness of negative relationship between black migration and the black-white earnings ratio. For comparison, the first row reproduces the coefficient from Table 3 (coeff. = -0.725). The second row weights the observations by the total number of northern natives in each cell, instead of by the size of the black sample. The coefficient by

¹² I use the 1950 three-digit occupation codes to define jobs, and exclude any residual categories, such as “service workers, not otherwise classified.”

¹³ We can think of this pattern as the analog to Borjas’s (2005) finding that the estimated effect of immigration on the wages of natives increases monotonically with the size of the labor market – from metropolitan areas to states to regions to the nation as a whole. The more narrowly one defines a “local” labor market, the greater the opportunity of native workers to relocate in response to a migration shock. Similarly, the more narrowly one defines a skill group, the greater the opportunity to switch between groups.

around 30 percent larger, but can be distinguished statistically from the previous estimate. The coefficient is qualitatively unchanged in the third row, which drops the ten cells with fewer than five black native men, rather than use the mean earnings for all blacks in the North.

In the fourth row, I redefine the supply shock to include female migrants from the South. While the experience measure, which is based on age and education, might misclassify women who have an incomplete work history, ignoring working women altogether may mis-measure the size and distribution of the black migrant supply shock. However, because black migrants, regardless of gender, had very similar age-education profiles, the estimate is unchanged (coeff. = -0.734).

From the perspective of the North, both white and black southern migration generated large increases in labor supply (Table 1). The fifth row includes the white southern migrant share of the skill cell as an additional regressor. White migration has no effect on the black-white earnings ratio (coeff. = 0.128, s.e. = 0.929), perhaps because white southern migrants took jobs that brought them into competition with both northern blacks and northern whites.¹⁴ However, because of the high correlation between patterns of white and black southern migration (corr. = 0.59), introducing the white migrant share increases the standard error on the black migrant share.

The black migrant share in a skill group can increase either with a growing black migrant presence or with a reduction in the number of ‘native’ northerners in the category. The observed negative relationship could arise if cells undergoing secular decline in the North are also experiencing falling wages.¹⁵ The sixth row adds as a regressor the cell’s share of the total

¹⁴ Indeed, if one uses the index of labor market competition introduced in section V, a white migrant shock appears to have an equal effect on the size of the occupation-based labor force for both white and black northerners.

¹⁵ That is, if the skill group’s decline is due to a negative demand shock, rather than a change in supply.

northern labor force. Again, the effect of a black migrant shock is not qualitatively changed (coeff. = -0.883).

The effect of the supply shock could be attenuated if competing northern workers respond to the southern influx by leaving the North. In the seventh row, I estimate the effect of a black migrant shock to the North on the share of northern-born men in a skill group who reside in the South by the Census date. If anything, northern blacks were *less* likely to move to the South as the southern migrant share in their skill cell increases. However, white men that, according to their education and experience, were likely to face competition from black migrants in the North were also more likely to move South. For white men, the 5 percent increase in the labor force is associated with a 1.2 percentage points ($= 0.3 \cdot 0.81 \cdot 5.0$) higher probability of living in the South, or roughly one-half of a standard deviation. The differential relocation response of white and black men to the competitive pressure of the southern black migration may, in part, account for the concentration of the earnings effect among northern black workers.

V. Racial Segregation in Employment Within Skill Groups

The results presented above suggest that northern blacks were closer substitutes with southern black migrants than were northern whites with the same levels of educational attainment and work experience. This pattern is consistent with what we know about racial segregation by occupation and by job, and about the race-based process of promotions within firms during this period.

Together, city case studies paint a picture of racial divisions in the labor market, with blacks barred from skilled crafts, retail and clerical work, and supervisory positions (Trotter, 1985; Gottlieb, 1988; Grossman, 1989; Broussard, 1993; Sundstrom, 1994). Gottlieb (1988)

describes the range of jobs available to black workers within large manufacturing plants in Pittsburgh. “At U.S. Steel Corporation mills,” for example, “black men could advance no higher than first helper in the open hearth department or catchers, chippers, and crane and dinghy operators in rolling mills” (Gottlieb, 1988, p. 98-99). Trotter (1985) portrays a similar process in Milwaukee. In manufacturing, blacks always “worked in the hottest areas of the plant,” particularly stoking blast furnaces. Tanneries employed blacks only in “the beam house, where dry hides were placed into pits filled with lime to remove hair.” Likewise, packinghouses “relegated Afro-Americans to the worst occupations...as mockers or slaughters. These men unloaded trucks, slaughtered animals, transported intestines, and generally cleaned the plant” (Trotter, 1985, p. 53).

Census statistics tell a similar story. While southern black migrants worked in occupations similar to those held by northern blacks, the black job distribution was substantially different from that of white counterparts. One way to summarize the degree of occupational overlap between black migrants and various groups of northern natives is to determine what the average proportional increase in labor supply to commonly-held occupations would be with a given black in-flow. If we assume that workers are more likely to compete directly with others in their occupation, this measure will indicate a northern group’s protection from or exposure to new arrivals.

To construct this measure, let us consider the employment of three categories of northern workers – all natives (n), a sub-group of natives (g , where $g = \text{black, white}$) and black migrants (m) – in each of the six broad occupations categories introduced above. For every category c , let E_{co} be the level of employment in occupation o and E_c be the total employment in the northern economy. Likewise, let S_{co} be the share of employment for category c in occupation o . We can

denote a migrant-induced supply shock to occupation o as E_{mo}/E_{no} and to the economy as a whole as E_m/E_n . The average increase in labor supply experienced by a sub-group of northern natives is the weighted sum of each occupation-specific shock, or: $\sum_o S_{go} (E_{mo}/E_{no})$. Making use of the fact that $E_{mo} = S_{mo} E_m$ (and likewise for E_{no}), we can re-express the average increase in labor supply as $\gamma(E_m/E_n)$, where $\gamma = [\sum_o (S_{go} S_{mo})/ S_{no}]$.

Following Altonji and Card (1991), I interpret γ as an index of labor market competition, or the average proportional increase in labor supply experienced by a sub-group g with a one percent migration shock to the northern economy. In a homogenous labor market, in which all workers are equally distributed across occupations ($S_{go} = S_{mo} = S_{no}$), the index takes a value of one. Sub-groups that are concentrated in migrant-intensive occupations will receive a higher index value.

I calculate the index separately for black and white natives within the five education categories in 1950, and illustrate the results in Figure 3.¹⁶ The main X axis, which is positioned at the value of one, makes it easy to see that the index is always slightly *below* one for similarly-educated white workers. In contrast, black migration would more than proportionately increase the occupation-based labor force of black natives. The strongest competition is found at the tails of the education distribution. For native blacks with either 0-4 or more than 12 years of schooling, a one percent migrant shock is associated with nearly a 2 percent increase in

¹⁶ I assume that the flow of black migrants from 1940-1950 adopted the same occupational distribution as the total stock of black migrants in the North in 1950.

competing labor.¹⁷ For blacks with between 5 and 11 years of schooling, the proportional increases are between 1.3 and 1.7 percent.¹⁸

While the index provides a useful summary of labor market competition, it is also informative to compare the specific jobs held by black and white workers with similar levels of education. For illustration, I focus on common school graduates in 1950, all of whom have precisely eight years of education. Figure 4 depicts the ten most common occupations for black and white men (15 occupations in total). Panel A presents the share of black men holding each job, and panel B shows a similar share for white men. Jobs are arrayed from left to right, in descending order, by the size of the black-white gap in employment shares. Jobs on the left-hand side, including janitors, cooks, and porters, employ 16 percent of blacks but only 2 percent of similarly-educated whites. The reverse is true of jobs on right, which include mine operatives, carpenters, foremen, and salesman. While a few jobs in the middle (truck drivers and mechanics) employ a large share of both races, the dominant trend is for black and white workers to occupy non-overlapping job distributions.

In addition to the maintenance of separate “black” jobs, the refusal of whites to work under a black boss, and the resulting lack of promotion possibilities, is a ubiquitous theme in social histories of port-of-entry cities.¹⁹ White supervisors would frequently refuse to provide training to equally-qualified black employees, or would simply bypass trained black workers for

¹⁷ The index values for black natives and black migrants, which range from 1.34 to 1.91, are uniformly higher than values calculated by Altonji and Card (1991) for the industrial overlap between immigrants and low-skilled natives in the 1970s. The *highest* value in their set was between immigrants and black women (1.28).

¹⁸ That racial segregation by occupation is present within education groups corresponds to Margo (1990), who finds that less than one third of southern employment segregation in 1940 can be attributed to racial differences in either the quantity or quality of schooling. Margo concludes that “race [itself], not schooling, was the principal factor limiting the participation of black labor in certain industries and occupations.” (p. 104).

¹⁹ Even in West Virginia’s relatively equitable coal mining industry, in which blacks had access to high-skilled machine-cutting jobs, black workers were never offered supervisory roles (Fishback, 1986).

promotion for their white counterparts.²⁰ As one of Gottlieb (1988)'s interview subjects, Wesley M., attests: "I worked in that mill and I have learned those white boys [their] jobs. [They] would put them on my job, [and I would] learn them their jobs, but still I couldn't get the [better] job." (Gottlieb, 1988 p. 100). As a result, black men and white men classified as having in the same degree of work experience based on education and age might occupy very different positions in a job hierarchy. A combination of a lack of promotion opportunities and limited access to all but a few jobs might help to explain why black migrants had a negative impact on black earnings *relative* to similarly-skilled whites.

VI. Conclusions

From 1940 to 1970, southern black migration contributed to a large increase in the northern labor supply. I use variation in the size of these migrant shocks across skill groups over time to identify the impact of the southern black influx on the earnings of 'native' northern workers; skill groups are defined by educational attainment and work experience. Consistent with the channeling of black workers into 'negro jobs' and the limited opportunities for black promotion, black migration had a large negative effect on black workers relative to similarly-skilled whites. A five percent increase in the labor force due to southern black migration, the mean from 1940 to 1960 across skill groups, would have reduced the relative earnings of black workers by 3-5 percent. The influx of southern black migrants – or what Du Bois had earlier termed a "great reservoir of labor" – in the 1940s helps to explain the fact that the North experienced weak racial earnings convergence relative to the South during the war decade.

²⁰ See Wright (1986, p. 177-197) on why competitive pressure did not drive out this form of racial segregation. As Wright argues, "*acquiring* skills or useful experience is not intrinsically a market process... [but instead is] a social affair, with all the subtleties of interpersonal relationships, such as supervision of one person by another, or identifying the most promising candidate for advancement from the ranks of the unskilled." (p.193). *Given* a world in which job training was rationed by race, promoting only white employees often made economic sense.

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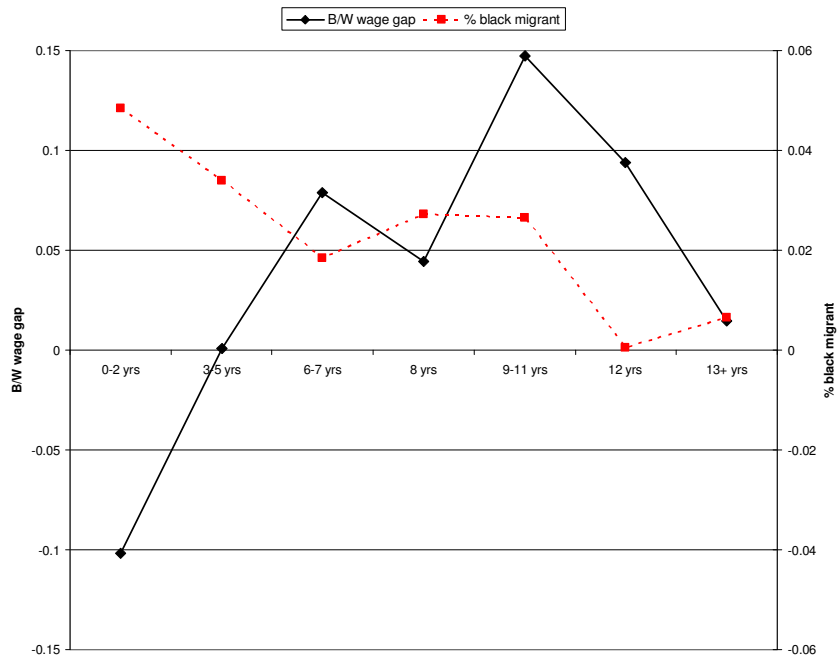
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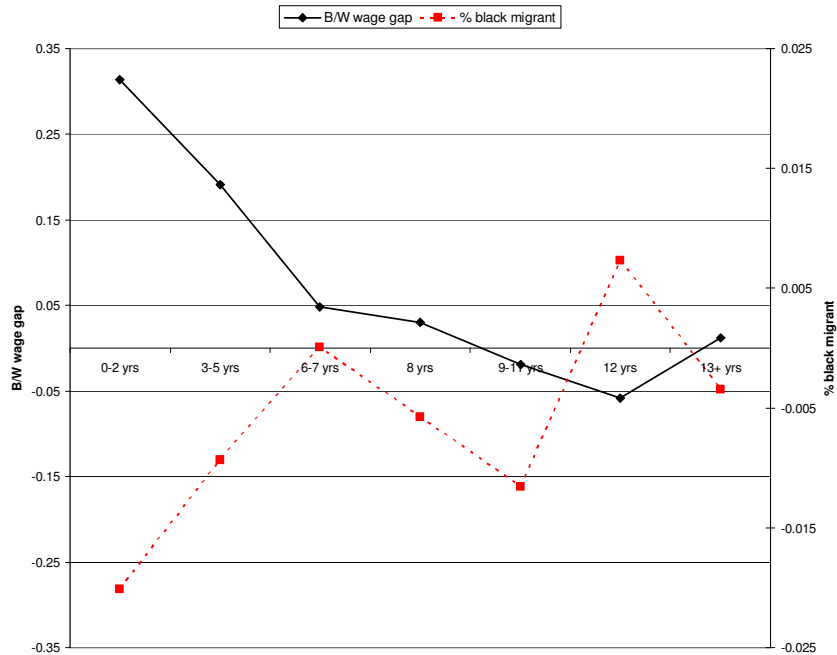
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Figure 1: Changes in the black-white wage gap and the black migrant share by education category in the North

A. 1940-50



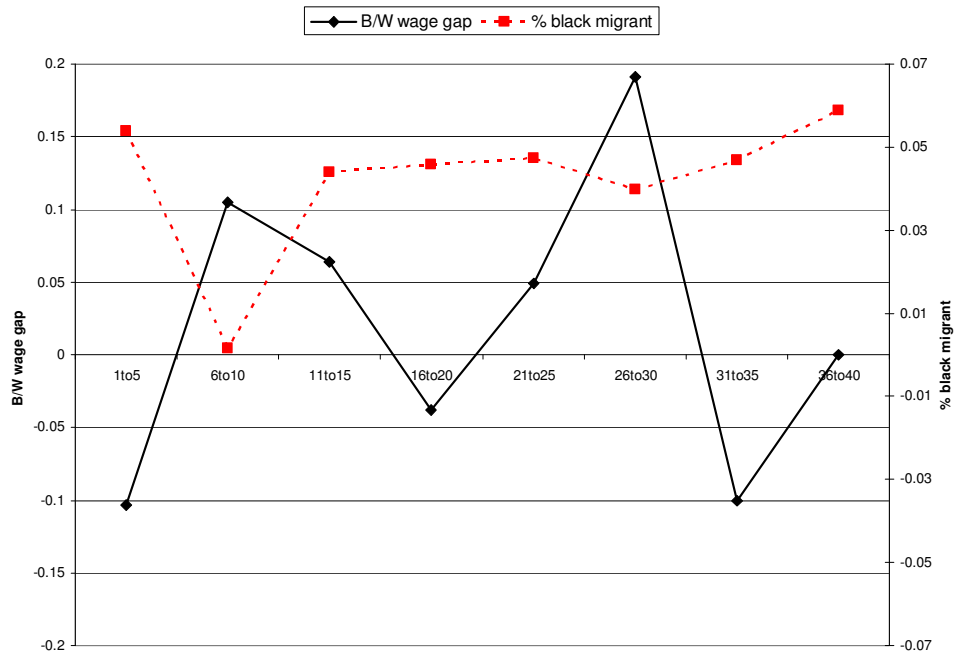
B. 1950-60



Notes: The racial gap in annual earnings is measured as $\ln(\text{black earnings}) - \ln(\text{white earnings})$. Earnings are measured for full-time male workers aged 18-64 who are not self-employed, in school, in group quarters, in the armed forces, or in the farm sector, and report a current occupation. Full-time work is defined as having worked 40 or more weeks in the previous year.

Figure 2: Changes in the black-white wage gap and the black migrant share by experience level in the North, 1940-50

A. Education = 0-7 years



B: Education = 8-11 years

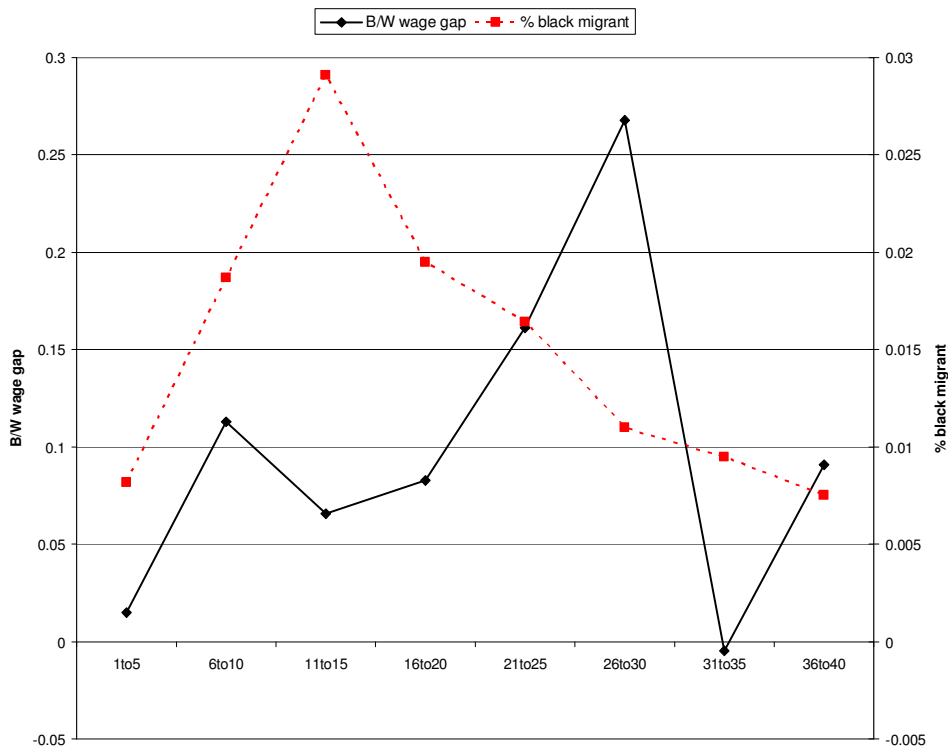
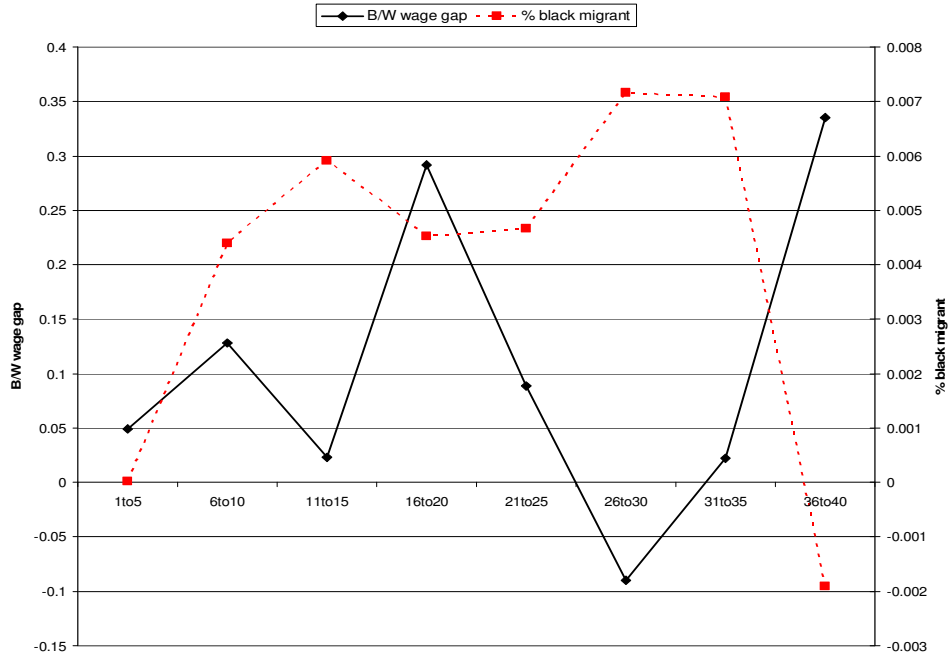
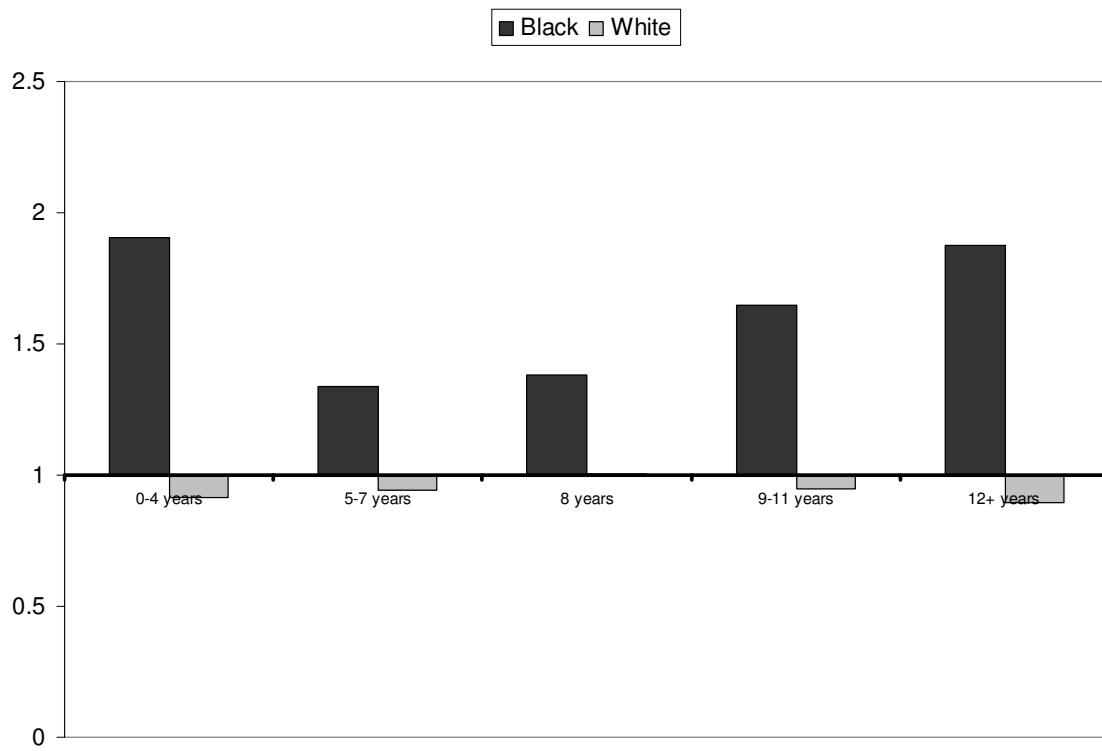


Figure 2, continued.
 C. Education = 12 or more years



Notes: The racial gap in annual earnings is measured as $\ln(\text{black earnings}) - \ln(\text{white earnings})$. Earnings are measured for full-time male workers aged 18-64 who are not self-employed, in school, in group quarters, in the armed forces, or in the farm sector, and report a current occupation. Full-time work is defined as having worked 40 or more weeks in the previous year. Work experience is defined as age minus $\max\{\text{education} - 6, 12\}$.

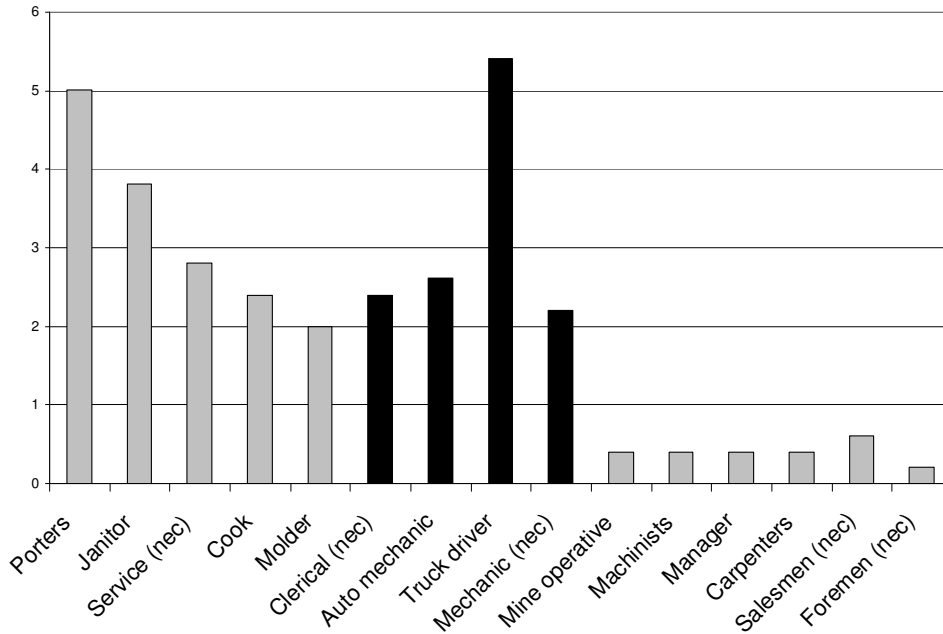
Figure 3: Average proportional increase in occupation-based labor force associated with a one percent black migrant shock to the North, 1950



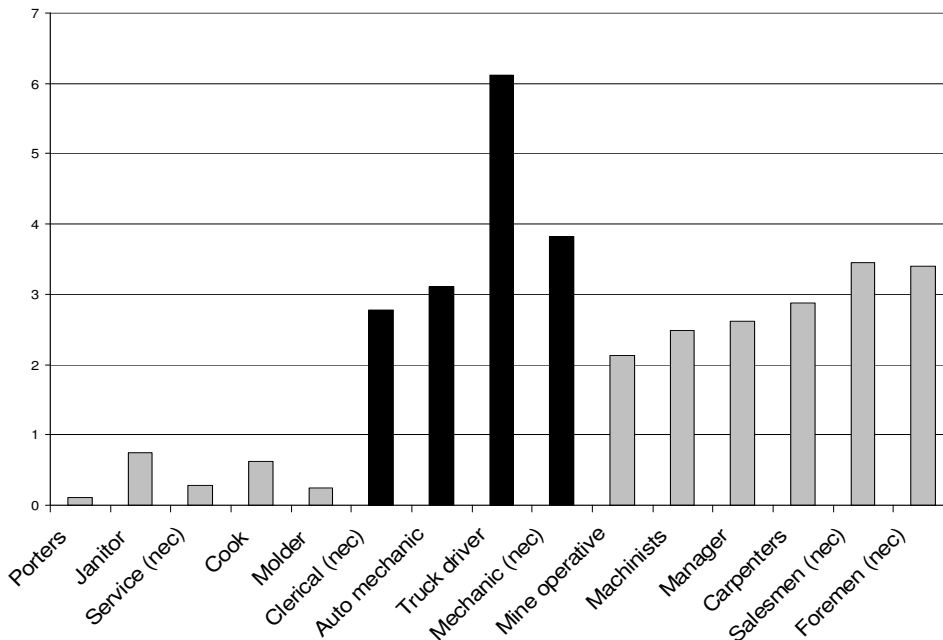
Notes: Details of the index of labor market competition are presented in the text. An index value equal to one indicates that a one percent migrant shock increases the average native worker’s relevant labor force by one percent. Higher values signify a stronger degree of labor market competition between migrants and the native group. The index is based on Altonji and Card (1991).

Figure 4: The percent of northern ‘natives’ with eight years of education holding specific occupations by race, 1950

A. Black men



B. White men



Notes: The 15 reported occupations represent the ten most common occupations for either black or white men. Occupations that employ at least two percent of men of both race are shaded in black.

Table 1. Share of the northern male labor force born in the South, 1940-1970

	All southern born	Black, southern born	White, southern born
1940	0.061	0.023	0.037
1950	0.084	0.034	0.050
1960	0.096	0.036	0.060
1970	0.090	0.031	0.058

Notes: The labor force includes men aged 18-64 who are not in group quarters, the armed forces, or the farm sector, and report a current occupation. The South is defined as the southern Census region, minus Delaware, the District of Columbia and Maryland. The North includes the remainder of the country.

Table 2: The racial gap in annual earnings by region, 1940-1970

	1940	1950	1960	1970
North				
B/W gap	-0.456	-0.366	-0.364	-0.315
Δ B/W gap	---	0.090	0.002	0.049
South				
B/W gap	-0.654	-0.552	-0.566	-0.490
Δ B/W gap	---	0.102	-0.014	0.076

Notes: The racial gap in annual earnings is measured as $\ln(\text{black earnings}) - \ln(\text{white earnings})$. Annual earnings are measured for full-time male workers aged 18-64 who are not self-employed, in school, in group quarters, in the armed forces, or in the farm sector, and report a current occupation. Full-time work is defined as having worked 40 or more weeks in the previous year. The South is defined as the southern Census region, minus Delaware, the District of Columbia and Maryland. The North includes the remainder of the country.

Table 3: The effect of black southern migration on the annual earnings of northern males by race, 1940-1970

Skill group	Coefficient on black migrant share of skill group		
	$\ln(\text{black})-\ln(\text{white})$	$\ln(\text{black})$	$\ln(\text{white})$
Education, OLS N = 154	-0.725 (0.405)	-0.414 (0.471)	0.311 (0.162)
Education, IV	-0.866 (0.444)	-0.682 (0.512)	0.183 (0.234)
Occupation N = 192	-1.352 (0.961)	-1.731 (0.895)	0.379 (0.562)
Job N = 192	0.896 (0.517)	0.959 (0.398)	0.111 (0.228)

Notes: Each column displays the coefficient on the black migrant share of the skill group from a separate regression, the dependent variables of which are listed in the first row. Standard errors are presented in parentheses and are clustered by skill group. The first two rows partition the northern labor market by educational attainment and experience level. The third and fourth rows replace educational attainment with six broad occupation categories or six specific jobs. Details are in the text. Observations are weighted by the size of the underlying black sample used to calculate mean annual earnings. The mean earnings of black natives is replaced with the mean earnings of all blacks living in the North in any cell with fewer than five black natives.

Table 4: Robustness checks for the relationship between black migration and annual earnings, 1940-1970

Coefficient on black migrant share of skill group	
	$\ln(\text{black}) - \ln(\text{white})$
1. Base specification N = 154	-0.725 (0.405)
2. Weight by total number in cell	-1.008 (0.501)
3. Drop cells with <5 black natives N = 144	-0.729 (0.423)
4. Include women in migrant share	-0.734 (0.414)
5. Add southern white share	-0.782 (0.682)
6. Add cell's share of labor force	-0.883 (0.496)
7. Dependent variable = pr(live S born N), black	-0.125 (0.285)
pr(live S born N), white	0.300 (0.095)

Notes: Each column displays the coefficient on the black migrant share of the skill group from a separate regression, the dependent variable of which is the black-white earnings ratio (rows 1-6) or the share of northern-born men in the skill group who live in the South (row 7). Skill groups are defined by educational attainment and experience level. Standard errors are presented in parentheses and are clustered by skill group. With the following exceptions, observations are weighted by the size of the underlying black sample used to calculate mean annual earnings (row 2) and mean earnings of black natives is replaced with the mean earnings of all blacks living in the North in any cell with fewer than five black natives (row 3).

Appendix Table 1: Summary statistics for the northern labor force by skill group, 1940-70

	Education-experience	Occupation-experience
A. Second stage		
<i>Dependent variables</i>		
ln(black annual earnings)	9.721 (0.432)	9.853 (0.405)
ln(white annual earnings)	10.003 (0.408)	10.134 (0.396)
Black: pr(live S born N)	0.057 (0.054)	---
White: pr(live S born N)	0.066 (0.028)	---
<i>Right-hand side variables</i>		
Share black migrant (male)	0.057 (0.053)	0.046 (0.041)
Share white migrant (male)	0.069 (0.035)	0.053 (0.014)
ln(natives in cell)	7.384 (1.466)	7.687 (0.832)
B. First stage		
(# black, southern-born)/ (# northern-born)	0.601 (1.471)	---
N	156	192

Notes: The labor force includes men aged 18-64 who are not in group quarters, the armed forces, or the farm sector, and who report a current occupation. Average earnings are calculated members of the labor force who are not currently enrolled in school or self-employed and who worked at least 40 weeks in the previous year.