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FARE THEE WELL:
EDUCATIONAL SELECTION IN AFRICAN AMERICAN MIGRATION BEFORE 1910

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Abstract

There are several theories that seek to link the decline in the aggregate skill level of the Southern African American population before 1915 to positive education-selective migration before World War I. Showing educational selection in migration is complicated by the fact that education and other features of human capital are highly correlated with one another—what may appear to be educational selection could be a host of correlated but unobserved factors. I employ a simple migration model to highlight the role that human capital (both health and literacy) played in African American migration before the Great Migration. The model shows that only if literacy has a larger marginal utility than health (a proxy for other factors) will literacy have a stronger effect on migration than health. I use IPUMS and the Colored Troops Sample of the Union Army Data to estimate the effects that literacy and health (both stock and flow) on the migration propensities of African Americans. I find that literacy and health flows were strong predictors of migration and the stock of health was not, and the effect of literacy on migration is reduced by one-tenth to one-third once health factors are controlled for. Furthermore, there were differential selection propensities based on slave status. The Colored Troops Sample also allows us to measure migration in several ways, with constructions that would and would not be prone to educational selection—the results are robust to the measurement of migration.

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"Whereas they had been nonliterate, Blacks sought purposefully to learn reading and writing when the opportunities presented themselves after the war. Literacy, after all, stood as the one essential skill of a free person."

-Nell Irvin Painter

"The returns to education are also said to include non-pecuniary benefits. The ability to read and write has benefits unrelated to economic productivity. The educated man is more cultivated, less afraid of the world, and more confident in his ability to adjust to changes within it. The educated man is said to be happier."

- *Roger L. Ransom and Richard Sutch*

"Can a people live and develop for over 300 years simply by reacting*? Are American Negroes simply the creation of white men, or have they at least helped to create themselves out of what they found around them? Men have made a way of life in caves and upon cliffs, why cannot Negroes have made a life upon the horns of the white man's dilemma?"*

-Ralph Ellison

I. Introduction

Economists have recently turned their attention to the role that the legacy of slavery plays on the current economic condition of African Americans (Sacerdote 2005). This is in contrast to studies that concentrate on market and non-market features of the African American economic condition, but which, surprisingly, do not seek to look further in the past for root causes. An important piece to the historical puzzle is the relative lack of skill in the Southern African American population at the turn of the last century. This skill differential arguably has its beginnings in the Reconstruction era, although assessing the skill level of the slave population has proved difficult (Fogel and Engerman 1974, Gutman 1975). African American migration has been seen as a source of the decline of the aggregate skill level of the African American Southern population in the early twentieth century for some time— Woodson (1918), Hamilton (1959), Shryock and Nam (1965), Lieberson (1978), and Tolnay (1998) all argue that migration was selective towards more educated African Americans before the Great Migration.

If the returns to education (or, more generally, the marginal utility of education) was greater in areas other that the South, educated blacks would be more likely to leave the South. Previous research has not been able to distinguish between positive selection for education and positive selection for other elements of human capital that may be highly correlated with education. A natural candidate for a factor that could drive migration which would be correlated

with education would be health. Further complicating this issue is the very health of slaves themselves. Given the harsh working conditions of the plantation system and its general level of violence, long migrations may have been physically difficult for large portions of the ex-slave population, even children (Steckel 1986). This distinction is important both theoretically and substantively—if factors other than education played a strong role in the migration propensities of African Americans the traditional economic interpretation of the Great Migration, where African American labor was held in place by the flow of unskilled labor from Europe before World War I, should be reconsidered. This paper looks at the impact of education and health on the migration propensities of African Americans after the Civil War and before 1915.

Both literacy and health are types of human capital that would, in theory, have an impact on the migration decision. This is not to say that social networks are unimportant in the migration decision, but that human capital may act as both a substitute and complement to social networks in the migration process, such that a person with high levels of human capital may be more likely to migrate with the same social networks as someone with less human capital. This depends, naturally, on the type of human capital. Literacy, for example, could be both a substitute and complement to the social network. If a person could read and write, they would not need to receive as much information from their social network in order to be made aware of opportunities in other locations, and as such literacy is a substitute for the social network. Literacy could also complement a social network if it was used to verify the accuracy of information acquired through the social network. Health, however, is more likely to be a complement to the social network. If one believes himself to be in good health, they may be more likely to migrate if they believe that they stand a good chance of weathering any potential stress brought on by the new location, but knowledge of the nature and extent of these stresses or potential success in the new location would still come from the social network (see Lee 2005).

While recent scholarship has shown that the educational selection effect on African American migration dissipated over time, it is not clear that the Great Migration was a discontinuous event in this trend whereby less educated blacks emigrated from the South en mass beginning in 1915. Litwack (1979) has shown that economic incentives do not explain the movement of African Americans immediately following the Civil War, and it is not clear when (or if) non-economic factors ceased to dominate African American migration decisions, although some historians have noted the non-economic benefits of migration before and during the Great

Migration (Bennett 1993, Painter 1979, Trotter 1991, and Grossmam 1989 to name a few). This complicates the traditional interpretation of the Great Migration being caused by unmet need for unskilled labor in the North once international immigration controls were in place (Collins 1997). Understanding the causes and correlates of African American migration before World War I in general is important—if migration was not strongly educationally selective before World War I then other factors (politics, racial violence, institutions, laws and codes, etc.) should replace labor market conditions as the dominant explanation of African American migration at the time.

Given the high correlation of education and health, attempts to identify educational selection will be unsuccessful unless health is properly controlled for.[1] Until recently, researchers could use only Census records to estimate migration selection before 1910. This paper uses both IPUMS Census returns and the Colored Troops sample of the Union Army Veterans data to test the hypothesis that black migrants who did migrate before 1910 were selected more on education than on health. With the exception of Lee (2005), this is the only paper to consider the effects of the stock and flow of health on migration, and the only paper to do so for African Americans. IPUMS Census returns show that migration and education were positively correlated from 1870 to 1910, and disproportionate shares of black migrants were literate, consistent with the pervious literature. Union Army veterans' data, however, allows us to measure education and the stock and flow of health, while at the same time controlling for other factors so that one can test the importance of each in the migration propensities of African Americans. I find that literacy was a strong predictor of migration for African American veterans of the Civil War, but that controlling for health significantly diminishes the effect. The effect of literacy on migration decreases by one tenth to one third once health and other factors, unavailable in Census records, are controlled for. The effect of health on migration was mixed. The stock of health, as measured with height, had no significant effect on migration propensities, but health shocks during the war (such as illness or wound) do affect migration probabilities and the distance of migration for those who migrated. I also find that those who migrated were longer lived than those who did not, which serves as additional evidence that migration was selective on health.

[1] While one could imagine using instrumental variables to identify the effect of education on migration, it is difficult to imagine a proper instrument with the data currently available in historical data.

II. African American Migration, the Role of Skill, and American Historiography

The migration of African Americans before World War I is not as well studied as the migration that took place after 1914. While the migratory flows were not of the same magnitude as those seen after 1914, African American populations in Northern cities did grow substantially before 1910. New York, Philadelphia, and Chicago each saw their African American populations grow by more than thirty percent from 1900 to 1910. Furthermore, of the five cities with more than 80,000 black residents in 1910, only one was in the deep South. The most striking feature of African American migration to 1914 is the increasing urbanization of African Americans, both ex-slave and free. From 1890 to 1910 the proportion of African Americans living in urban areas increased 35% (Meier and Rudwick 1970). According to Costa and Kahn (2006), nearly one third of the black veterans who are linked to pension records were migrants. IPUMS returns put the proportion of black migrants at approximately 20% of the total black population. In many ways, the Great Migration after 1914 amplified a migratory trend that was already underway (Woodson 1918), but the nature of causes of the migratory flows before 1914 remain an area of conjecture.

Many scholars assert that racial skill differentials have their roots in the Reconstruction era. Harris (1982) notes that at the end of the Civil War white and African Americans were equally represented in skilled labor categories, a debatable contention, but that these numbers quickly declined after the Civil War (See Table 1). Harris attributes the decline, in particular, to the restrictive laws that were passed in the Reconstruction era South; laws that restricted Freedmen's movement, occupational choice, and stunted their human capital acquisition by providing second-class education. Harris further claims that the industrial development that took place in the South after the Civil War excluded skilled African Americans. Jones (1989) notes that the changing economic conditions forced many artisan's wives to work as they found themselves unemployed due to a combination of "the resentment of white competitors… municipal ordinances [that] imposed discriminatory licensing fees on black craftsmen, and vagrancy statutes limited their ability to move around" (p. 75). This created a climate that was unfavorable to African American artisans, and their numbers declined during this period as a result (See Table 1). Jones argues that the men who left the trades became day laborers who performed public work, an occupation that not only paid less, but was also less secure than the employment enjoyed by artisans at the time.

Ransom and Sutch (1972) find that the capital markets of the Reconstruction era were immature, and this, in turn gave landlords and merchants monopoly power. Since the South was under banked local merchants made credit decisions. Ransom and Sutch argue that if local merchants were the chief creditors it would be unsurprising to find that Freedmen were unable to secure the capital needed to establish their own farms and businesses. For the rural Freedmen, the debt peonage system was created, and those workers found themselves bound to the land. A further complication is the fact that vagrancy laws forbade travel to seek employment, thus assuring that the tenant farmer would stay and work the land. In general, they see the lack of black mobility as a result of poor institutions in the South after the Civil War.

> The fact that neither a significant out-migration to the North nor a viable manufacturing sector in the South developed during the nineteenth century can only be explained by barriers to the mobility of factors of production. Labor was not attracted to the North no capital to the South. We believe that, once again, the rigidities and racial barriers built into southern economic institutions are to blame. (Ransom and Sutch 2001 p. 195)

One important aspect of the laws that is overlooked has been revived by recent legal research. Bernstein (1998) uses the Supreme Court case *Williams v. Fears* to highlight the political economy surrounding restrictive employment and vagrancy laws at the time. The court ruled in this case (decided in 1900) that excessive licensing fees could be charged to emigrant agents. This acted to cut the flow of migration towards employment, and also acted to strengthen the positions of rural landowners who had become fearful that there tenants would vacate the land in search of better job opportunities. In essence, Bernstein notes that the law caused a rise in the cost of migration for African Americans because it would now be more expensive to access information about employment. Bernstein also notes that this case shows that the government played a much larger role in the economic life of African Americans in the post-Reconstruction era than many scholars have previously thought. Given that wealthy landowners regained political power shortly after the end of the Civil War, the laws passed sought to maintain that power at the expense of the Freedmen's economic independence.

As a backdrop to all of these developments, the general retrenchment after Reconstruction left African Americans in the South with fewer and fewer political options. Despite the protections offered by the Fourteenth and Fifteenth Amendments and the Civil Rights Act of 1875, the last quarter of the 19th century saw a steady decline in black freedoms in the South. Beginning with the Civil Rights Cases and the Danville Massacre of 1883 and

culminating in the "Terrible Nineties" the prospects of full economic and political freedom for African Americans was arguably set back to its antebellum level. Higgs (1982) and Margo (1984) have noted that black accumulated property in this era, but even by this measure the late nineteenth century was a time of scarce opportunities for blacks in the South. The opportunity and quality of schooling also declined during this time for blacks (Margo 1990). There were, however, some who escaped the fray. The most famous example would be the Exodusters, a group of blacks from the deep South who left for the west, mainly Kansas, in the late 1870s and early 1880s. One interesting feature of the Exodusters was their use of social networks to build their movement.

> Blacks had obtained information about Kansas through several channels: letters from migrants, circulars, mass meetings, on-the-spot investigators, and letters to Kansas—either to the governor or to the *Colored Citizen*…. Letters from Kansas were often read in church, where the information could reach the largest number of people. But not all prospective migrants were fortunate enough to have contracts in Kansas. Conductors and colonies aimed circulars at this audience in their attempt to attract settlers. (Painter 1986 p. 156)

This mimics the spread of knowledge of opportunities North during the Great Migration, which has received mush more attention.

> Indeed, sermons, community discussion and debate, and a "general feeling that it must be [the] best thing since every body was doing it," established the social context within which most made the decision to migrate. Black southerners ignored the threats and admonitions of whites, as well as the reservations and objections expressed by traditional leaders, and organized themselves and their neighbors to facilitate their journeys. Living in a society that sought to render them as dependent and powerless as possible, they acquired a new source of power over their lives—information that a better alternative not only existed but beckoned. They used the information and the network to plan and execute the process of their migration North, as well as to determine their destination. (Grossman 1989 p.96)

In short, the current economic interpretation of the Great Migration, which sees African American migration as the product of restrictive immigration policies instituted in the early twentieth century, fails to acknowledge three important issues. First, researchers must analyze how and why the migration before 1915 was different from the migration that followed. Aggregate demand for labor, which Collins (1997) estimated for the Great Migration, is but one part of the story. For example, the movements of African Americans within the South tells us that blacks were migrating, but we are not sure if this movement was due to labor market

opportunities, wages, or non-wage, utility enhancing opportunities such as greater personal freedoms.[2] Secondly, not all African Americans would be equally effected by European immigration—skilled African Americans would not be substitutes for unskilled European labor and vice versa. To that end, we must know more about the features of African American migrants before the Great Migration before the traditional interpretation is accepted. Lastly, the existing economic scholarship fails, in many dimensions, to give African American's agency—they are seen primarily as reactors to the environment, which is controlled by others. The problems of this approach, both methodologically and substantively, have addressed by a number of scholars regarding African American migration (Bennett 1993, Painter 1986, Trotter 1991).[3] I make no claims on such controversies, but note that even within the restrictive environment that existed at the turn of the century there were economic choices to be made—the causes and correlates of those choices are the focus here.

III. Theories of African American Skill Decline before World War I

Reconstruction era histories offer a number of explanations as to why the number of skilled African Americans declined in the South. These theories can be grouped into four categories. Below, I consider each of these theories in light of the existing evidence of African American migration, and show how the education selection hypothesis is the only one to survive scrutiny. I then present a simple model of African American migration, and show how tests of the hypothesis can only be proved with information on both health and other elements of human capital.

A. Four Theories (Re) Considered

1. The "not truly skilled" hypothesis

The first theory of the skill decline of African Americans is due to DuBois (1902), who suggested that the skilled Freedmen in the South were, by and large, not truly skilled, and as such they could not successfully compete in the free market. He implicitly argues that slaveholders regularly used semi-skilled slaves, but that after emancipation these ex-slaves could not compete in the skilled labor market. Therefore, the decline in skill after the Civil War is the result of semi-skilled blacks leaving skilled occupations that they were not truly prepared or trained for.

[2] Wade (1964) has established that in the antebellum South cities afforded slaves a greater degree of autonomy.
[3] This critique of the social science research agenda with respect to race has been codified in Critical Race Theory, which has used narrative techniques as an attempt to give "voice" to historically marginalized groups.

There are two problems with this hypothesis, one economic and the other historical. Economically, semi-skilled artisans could charge lower prices for their work, and their prices would be below the "truly skilled" prices. An employer will be willing to take a good of less quality if the wage is sufficiently lower as long as the quality of the work is above some minimal quality threshold. Therefore, less skilled Freedmen could price their services at a level such that employers would be willing to hire them with the knowledge that the work would not be of the highest quality. Such markets for sub-prime quality skilled work exist today, and certainly the lack of professional accreditation in the past would have increased the likelihood that Freedmen with skills stayed in those occupations. While this would not hold in all skilled trades, it could be argued that such a situation existed in the trades in which Freedmen were well represented. It could be argued that employers were willing to make the "trade" for cheap wages immediately after the Civil War, but as infrastructure improved the need to make this trade off diminished and therefore those pricing their wages lower would cease to be a presence in the market (and hence the gradual vanishing of the skilled Freedmen could be explained). This argument, however, supposes that during the time of steady employment the less skilled worker would make no effort to improve their skills or adopt new technology, which, although plausible, is not the point DuBois makes in his study of the African American artisan.

Historically, this argument neglects a key feature of the antebellum South that contradicts the central assumption of the hypothesis. The "not truly skilled hypothesis" supposes that slaves were not truly skilled before the Civil War, but the extensive market for skilled slaves showed that slaves had skills with significant market value. To advance the "not truly skilled" argument one would have to suppose that the work of these skilled Freedmen was of lower quality during the antebellum period, and this does not hold when one considers the market for skilled slaves during the antebellum period (see Wade 1964). In other words, employers would have been willing to hire inferior slave artisans in the antebellum era only if their wages were lower than those of more skilled workers, and a similar situation would exist after the Civil War. Indeed, Margo (2002) finds that black-white wage gaps were large for skilled labor, suggesting that black artisans' wages were bid down in a manner inconsistent with this theory.

This "not truly skilled" hypothesis fails to explain the decline in the number of skilled Freedmen in Table 1, which shows that from 1870 to 1910 the growth of number of African American men in skilled occupations was modest at best, and negative during most of the

Reconstruction era. The historical record shows that slaves who hired out their time were successful in finding gainful employment, and this can be taken as evidence that their work was of merit. Additionally, former slaves with inferior skills could "price themselves into the market" since less skilled workers would be willing to work for cheaper wages. All told, the "not truly skilled" hypothesis fails to explain the decline in skill among Southern blacks after the Civil War.

2. The soft skills hypothesis

The second hypothesis, suggested by Ransom and Sutch (1977) and implicit in the work of DuBois, is that the illiteracy of Freedmen and their free colored counterparts limited their ability to succeed and run a successful business. This would leave the newly freed slave with the ability to perform their craft, but without the business know-how to make an independent living from it. The lack of literacy and the organizational capital needed to successfully operate a private enterprise could have driven skilled Freedmen from the market.

The conjecture at the heart of this argument is that illiteracy creates high transactions costs between the illiterate artisan and his or her potential customers and factors of production. The most immediate consequence of this would be the inability to draft, read, and enforce contracts that would secure employment for a given job and also secure intermediate goods and materials necessary to complete given tasks. Illiteracy, then, can be thought of as a barrier to entry into the crafts for Freedmen after the Civil War. There are two potential problems with this theory, one involving specification and the other involving industrial organization.

In specifying such a model one would expect that a rise in the literacy rate would lead to a rise in the number of skilled artisans, if literacy was the barrier to acquiring soft skills. A cursory glance at the literacy rates for African Americans shows steady gains in literacy during the Reconstruction era. Even though the relationship might not be deterministic, one would still expect that a rise in the literacy rate would be met with a leveling of the number of skilled artisans. Indeed, Ransom and Sutch themselves note that African American artisans had a literacy rate four times higher than the literacy rate of an African American farmer (see Table 2). Although a non-negligible portion of African Americans remained illiterate into the twentieth century, one would expect the rate to increase more rapidly for artisans for two reasons. First, artisans were concentrated in urban areas, and were therefore closer to the newly established

educational institutions than the average Freedmen. Secondly, artisans would have the most to gain by becoming literate (in the sense that the returns to literacy for an artisan would be higher than those for a farmer or laborer) if this hypothesis was true, and it could be argued that they would be the most willing to avail themselves of these opportunities. In either case, it would be difficult to reconcile the decline of the number of skilled artisans with gains in the literacy of the Freedmen population.

Similarly, the hypothesis does not allow workers to pool their resources. There is nothing in the argument advanced that would prohibit an illiterate artisan from working with a literate Freedmen artisan in a jointly owned enterprise, or some combination thereof. This, it would seem, is the perfect way to overcome the barrier posed by illiteracy. By allying themselves with artisans who could read, the illiterate artisan could overcome the barrier to entry. This arrangement, however, presents a moral hazard for the literate artisan, who could extract rents from the illiterate artisan. But the extraction of rents would encourage the illiterate artisan to become literate, if only to avoid paying the rents (or the potential to be exploited more generally). Indeed, the historical record shows that literacy was sought by Freedmen as a means of avoiding exploitation (Ransom and Sutch 1977, Painter 1979, and Litwack 1979). Secondly, former slaves could continue to work as apprentices, similar to positions they held in the antebellum period (Wade 1964). Although this arrangement would probably be less desirable for a former slave, it is no less plausible economically.[4] Even in this arrangement, the same moral hazard condition exists, and once again the illiterate Freedmen would be given an incentive to become literate if the literate partner extracted rents from the illiterate apprentice. Both cases, then, yield the same result- the skilled illiterate Freedmen would become literate. More importantly, the barrier to entry posed by illiteracy is easily overcome in either case, and the incentive to become literate is high in both cases as well.[5]

[4] Indeed, it could be more plausible because of the weakened capital markets during this time, and is especially plausible if Ranson and Sutch (1973) are correct in their assertion that race acted as a signal to lenders. If Freedmen were unable to secure the credit necessary to start their own businesses it is entirely plausible that they would be forced to work for their old masters regardless of their literacy.

[5] It must be noted that Ransom and Sutch, and to a certain extent DuBois, were also referring to "soft" business skills that slave artisans were not taught. Another point that must be made is that the base of customers that a slave artisan had built during the antebellum period could serve to shield the same Freedman artisan from the need to become literate immediately. In any event, the "illiterate" hypothesis fails to explain the decline to a satisfactory level.

3. The legal restrictions hypothesis

The third hypothesis is the "conventional wisdom" on the topic, namely that the restrictive laws passed throughout the South in the Reconstruction era severely impaired the ability of the average Freedmen artisan to pursue work, and therefore over time a gradual decline is observed. Nearly every history on the subject mentions the power of vagrancy laws, which made it illegal to migrate in search of work. This type of law seems to be especially harmful to those who need a critical mass market in order to be gainfully employed at their position. If artisans could not migrate in search of work, and if they were restricted from seeking employment in their trade, it would seem logical that they would be forced to secure employment in another field.[6]

There are a number of problems with this hypothesis. The most significant challenge comes when one considers enforcement. Unless there is considerable evidence that the laws were enforced vigorously, there is little reason to believe that they would achieve their desired result. As with the emigrant agent law discussed by Bernstein (1998), vagrancy laws would only have a detrimental impact if they were enforced vigorously by states. The preliminary evidence is not promising. It is a well-established fact that migration from the countryside to urban areas took place on a large scale among Freedmen in the Reconstruction era.[7] With such high levels of intra-south migration it is difficult to argue that vagrancy laws were enforced unless one is willing to assume that the vast majority of migrants were moving to previously secured employments. This would be a very strong assumption, especially given the fact that labor markets during this time were not fully mature.[8]

Table 2 shows the migration patterns of African Americans during the late nineteenth century. It is important to note that during this time there was not a great deal of South-to-North migration, so Freedmen leaving a given Southern state were predominantly migrating to another Southern state. While this should not be taken as direct evidence that vagrancy laws were ineffective, it certainly cast doubt in that direction. It is important to mention that historians mention other laws- namely, licensing fees, city ordinances, and union regulations as factors in

[6] See Harris (1982) for more on the role of unions to keep African Americans out of the skilled trades. Also see Grant (1968) for an example of the black codes passed during this time period that included vagrancy laws and apprentice laws.
[7] See Bernstein (1998), Ransom and Sutch (1977), among others.
[8] See Rosenbloom (1990 and 1999) for one perspective on the maturity of the labor market in the United States. Most work on the subject continues to note that the South was more isolated than the other regions of the nation.

the decline. Due to the variance of these policies from state to state, and, in some cases, locality to locality, one could use such differences within a differences-in-differences approach to the effects of these laws on African American migratory flows. While this strategy is not adopted here, the conjecture is that these acts, at best, would not hinder African American migratory flows and, at worst, may have induced more migration due to their restrictive nature, exactly the opposite of what some of the acts were supposed to do.

4. The selection on education hypothesis

The final hypothesis has its roots in recent works of economic history that look at the causes and consequences of migration.[9] This hypothesis supposes that migration North was selected on education. In particular, literate blacks were more likely to migrate for three reasons. First, artisans had skills and as such they did not fear competition from recent European immigrants, who were primarily of unskilled stock. It has been argued both theoretically and empirically that the flow of unskilled immigrants from Europe kept the majority of African Americans in the South until the eve of the First World War.[10] The reasons for the delay, however, do not apply to those Freedmen with skills who, it can be argued, would be likely to find gainful employment despite the over-supply of unskilled labor in the North. Secondly, skilled artisans, it can be argued, had the most to *lose* by staying in the South if they were being "shut out" of occupational positions they previously held. Lastly, artisans, due to their urban concentration, were closer to the existing transportation infrastructures, and this proximity lowers the cost of migration, as well as the cost of obtaining information regarding employment in Northern cities.[11]

This hypothesis implicitly assumes that African Americans possessed reliable information from which they would form expectations. While the urban nature of the artisan

[9] In particular, see Hatton and Williamson (1998), who argue that migration was largely due to wage gaps and the migration helped to lessen those gaps and move the industrialized world towards convergence during this time period. The Theory presented here does not suggest that wage differentials acted as a motivating factor in the decision to migrate. Social conditions and the opportunity to earn a living in the trade one has mastered are larger factors.

[10] See Collins (1997) for an empirical test of the hypothesis that European immigration kept African Americans from migrating to the North. It is important to note, however, that Collins' findings apply only to unskilled African Americans. The hypothesis presented here is the logical extension to skilled African Americans. If skilled African Americans would not be in competition with recent European migrants the need to stay in the South is not nearly as strong as that for an unskilled laborer.

[11] Unexplored at present is the potential role of Pullman Porters as an information network before the Great Migration.

certainly makes this a reasonable assumption, it must be noted that perfect information would not exist in all localities in the South, and one would take evidence of migration to or from a particular area as evidence that the information flows to or from that locality were well developed. Collins (1997) notes that before 1910 approximately 535,000 African American migrated North. If it were found that African American artisans suffered a worse fate in the North this does not pose a serious threat to the hypothesis. It has been established that the situation in the South was far from perfect- African American artisans saw their opportunities shrinking steadily in the South. In other words, even though the fate of artisans in the South may have been better, skilled African Americans might still be induced to move if the other factors influencing their decision were decidedly weighted towards migration to the North.

B. A Simple Model of Human Capital and African American Migration

The educational selection hypothesis of black migration has been advanced for some time and has received some empirical support (Tonlay 1998). An important drawback it that it has not been possible to see if and how education would be correlated with other factors that would effect the migration decision. In other words, the current evidence that we have on educational selection is tenuous, and we are not certain how reliable such estimates are. Since a key element of the hypothesis is that the selection was on education, it is important to see how correlation of education with other elements of human capital would leave the previous empirical work wanting. Given the large and growing literature on the health gradient, where more educated individuals are shown to be healthier, it seems reasonable to assume that current estimates of educational selection are overstated. Taking this idea further, I use a standard migration model to form hypotheses of African American migration before World War I. I take the usual framework for migration models of migration (Sjaasted 1962, Harris and Todaro 1970, Schwartz 1976, Greenwood 1997) to incorporate the ideas of the migration hypothesis of the decline in African American skill after the Civil War.

To begin, consider the value of migration, which would be the discounted cumulative difference in expected utility between the new and current location, less the cost of migration.

$$V(0) = \int_0^T \left[E\left[U_n(t)\right] - U_s(t)\right] e^{-rt} dt - C(0) \tag{1}$$

Where U_n is the utility in the new location and U_s is the utility in the present location (before migration), r is the discount rate, t is time, and C is the cost of migration.[12] I move to utility rather than wages since wages may not be the best way to capture African American migration decisions at the time, given large benefits to living in areas that would afford people greater freedoms unrelated to economic activity.[13] I further assume that utility is a function of income (Y), human capital (H), and other factors (Z) and that it is increasing in both income and human capital regardless of location:

$$\begin{aligned} & U = U(Y, Z, H) \\ & U_Y \rangle 0 \\ & U_H \rangle 0 \end{aligned} \tag{2}$$

Furthermore, consider that human capital has two components, health (h), and education (e) such that human capital in increasing in both:

$$\begin{aligned} & U = U(Y, Z, H) = U(Y, Z, H(h, e)) \\ & H_h \rangle 0 \\ & H_e \rangle 0 \end{aligned} \tag{3}$$

The cost of migration depend on three factors, X, Z, and H, such that $C(-)=C(X,Z,H(h,e))$. X is the mapping of the location chosen, from where one starts, such that places far away have high migration costs ($C_X \rangle 0$). Z is any other factors that may affect the cost of migration, but which is unrelated to distance and human capital. I assume that the cost of migrating is invariant or decreasing in human capital ($C_H \leq 0$), this is consistent with the findings in Schwartz (1976).

With these assumptions, value of migration becomes:

$$V(0) = \int_0^T \left[U_n(Y_t, Z_t, H_t(h,e)) - U_s(Y_t, Z_t, H_t(h,e))\right] e^{-rt} dt - C(X, H(h,e), Z) \tag{4}$$

The question is which component of human capital matters more in the migration decision, or would have a larger impact on the value of migration.[14] The chain rule and separability give:

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[12] In what follows, I drop the expectation on the utility from the new location for better exposition. Naturally, the discounted utility stream includes an expectation over the future utility in the current location as well.

[13] The main conclusions of the model hold if income is a function of human capital as well, where $Y_H > 0, Y_h > 0$ and $Y_e > 0$.

[14] Note that if $\partial U_n / \partial H \rangle \partial U_s / \partial H$ then $V_H \rangle 0$, and if $\partial U_n / \partial H \langle \partial U_s / \partial H$ then $V_H \langle 0$.

(5) $$V_h = \int_0^T \left[\left(\partial U_n / \partial H \right) \left(\partial H / \partial h \right) - \left(\partial U_s / \partial H \right) \left(\partial H / \partial h \right) \right] e^{-rt} dt - \left(\partial C / \partial H \right) \left(\partial H / \partial h \right)$$

and

(6) $$V_e = \int_0^T \left[\left(\partial U_n / \partial H \right) \left(\partial H / \partial e \right) - \left(\partial U_s / \partial H \right) \left(\partial H / \partial e \right) \right] e^{-rt} dt - \left(\partial C / \partial H \right) \left(\partial H / \partial e \right)$$

Without further assumptions we cannot say whether the utility with respect to education is higher or lower than the utility with respect to health, and therefore cannot say whether education or health increase the value of migration more. Nor do we have enough information to determine whether the cost of migration with respect to education is higher or lower than the cost with respect to health.

For education to have a stronger effect on migration than health a marginal increase in education should make one more likely to migrate than a marginal increase in health. This implies that the marginal value of migration for education should be larger than the marginal value for health. Letting $\delta = \left[\left(\partial H / \partial e \right) - \left(\partial H / \partial h \right) \right]$ and $\phi_i = \partial U_i / \partial H$ for *i*=*s*,*n* and $\phi_C = \partial C / \partial H$, $V_e \rangle V_h$ which implies

(7) $$V_e - V_h = \left[\int_0^T \left[(\phi_n - \phi_s) \delta \right] e^{-rt} dt - \left[\phi_c \delta \right] \right] > 0$$

This expression is assured to be greater than zero when:

1. $\phi_n - \phi_s > 0$ and
2. $\delta > 0$

The first condition implies that the marginal utility of human capital has to be greater in the new location, which is plausible and reasonable to justify on the grounds that increased utility is the primary reason for migrating from any location. Note that even if low skilled blacks and whites were paid the same wages in the South it would still hold that the marginal utility of human capital would be larger in the North if the unskilled wage was greater. It is the second condition that is more difficult to show. Because both health and education are correlated with one another, it is impossible to identify the selection effect of education without controlling for the selection effect of health. Similarly, estimates of the selection effect of education most likely suffer from omitted variable bias, and since education and health are positively correlated estimates of education's selection effect are likely to be overstated. It should be noted that this

applies not only to health, but to other factors of human capital that would be correlated with education.[15]

IV. Data

A. IPUMS

IPUMS data- Integrated Public Use Microdata – are a random sample of the person records from United States' decennial Censuses. I use IPUMS records from the Censuses of 1870 to 1910.[16] The IPUMS data contains the age, birthplace, literacy, current location, occupation, labor force status, marital status, and limited information on wealth holdings at the time of Census enumeration. For the analysis here I used IPUMS returns for men who were above the age of 13 at the time of Census enumeration. Migration is defined as one who lives in a state different from the state of birth. Using the age of the respondent at the time of enumeration and the place of birth, I create a crude measure of slave status, where a slave is defined as a person born in a slave-holding state before 1865.[17] Although there are numerous problems with this classification, it is congruent with the methodology others have used to disaggregate the African American population by slave status (Sacerdote 2005), and agrees with the fact that far less than 10% of the Southern black population was free (Fogel and Engerman 1974). Although occupational codes can be endogenous (such that the occupations of migrants might be different from non-migrants because of their migration, or their migration might be induced by their occupation), I used the occupational codes for the IPUMS to construct a crude measure of a skilled occupation (non-farm, non-labor, non-domestic work). When combined with the information on migration status an indicator variable for skilled migrant. These serve as the basis for tabulations that follow.

B. The Colored Troops Sample of the Union Army Veterans Data

The Union Army data offers a unique opportunity to analyze the lives of African American families in the years after the Civil War and before the Great Migration. I use the

[15] If we assume that income (Y) is also a function of human capital, separate from the effect of human capital on utility itself, the condition (1) would be the same except that $\phi_i = \left(\partial U_i / \partial H\right) + \left(\partial U_i / \partial Y\right)\left(\partial Y / \partial H\right)$.

[16] 1890 data is unavailable. All 1890 values reported are the average of the 1880 and 1900 values.

[17] The American South includes all slave-holding states at the time of the start of the Civil War. States that joined the union after the Civil War are not considered Southern states in this analysis.

Colored Troops Sample of the Union Army data to investigate how literacy and health fare as predictors and correlates of migration later in life for African American Union Army Veterans. The Colored Troops sample (CTS) contains information on more than 5,600 black troops form more than 50 infantry companies. The sample was chosen by company, and represents approximately 2.5% of the black troops who served in the Civil War (more than 180,000 black men served in the Union Army by the end of the Civil War). Because of the time period under study, this sample of men, who all reached the age of adulthood near the time of the Civil War, would be likely to be under the social pressures and economic realities described earlier. The CTS data contains the military records, the Census records, and the pension records for Colored Troops of the Union Army.

The military records include information known at enlistment (including age, state of birth, year of enlistment, place of enlistment, physical condition, etc.) as well as information on the troops well being during the war (illness, injuries, death) until the time of discharge from military service. The military record forms the backbone of the data used here. Then military records also contain information on the stock of health, as measured by height at enlistment. The Census records are linked to the veterans, and contain the same information as in IPUMS. The pension records provide additional information on place of residence after military service, occupation, literacy, and even changes of name after the Civil War. The pension records also include detailed doctor's examinations, which were required to receive a pension for military service. Theses surgeon's certificates not only list information on medical conditions that were war related, but also chronic conditions as well. For a description of the CTS data see Costa and Kahn (2006).

I use the military, pension, and Census records of the Colored Troops sample of the Union Army Data to look at the question of health and literacy in migration. The military records give information on age, occupation, and residence at enlistment. It also contains information on military events such as battles, injury and illness, and discharge. The Census linkages record family and personal characteristics of the veteran to the 1900 and 1910 census. The pension records list detailed health information about the veteran. The data can be combined to create a longitudinal source of information about these men. Since the data has the literacy data from the census linkages, measures of the health stock of the veteran (measured at time of enlistment) and also information on the flow of health (measured from military and

pension records), the effect of literacy and health on migration can be measured. Two strengths of this data should be noted. First, the records in the pension and military files contain information that can be checked against the Census linkages—allowing one source to act as a check on the other. Secondly, since the sampling was done by randomization on company, construction of a panel data set for men whose pension records are known is straightforward and avoids many of the selection issues involved if the sampling was done on individual troops.

There are certain differences between the CTS and the IPUMS returns. Relative to the entire population, the CTS is more Northern, urban, and has a higher occupational status, although some of these differences are not very large. While only 8% of the general black population was professional, more than 11% of the CTS is. Similarly, more than 20% of the CTS lived in very large cities in 1900, while only 10% of the general black population did. Even veterans who remained in the South were more likely to live in urban areas. For this reason, the CTS has a higher percentage of migrants than in the IPUMS data. Similarly, the experiences of black veterans were not representative of the general African American population in many respects. The recruitment of black men into the Union Army was not a random process in either the North or South (see Litwack 1979). Similarly, the death rate for black troops was particularly high, perhaps driven by high rates of malarial infections. Similarly, as Costa and Kahn (2006) have shown, enlistment exposed troops, particularly former slaves, to new environments, people, and experiences that may have had long lasting effects. Even with these differences, the purpose here is to see how much of the positive selection on education observed in the CTS can be attributed to health, and then seeing how those estimates would lower the educational selection seen in Census data.

V. Results

A. Evidence from IPUMS

We gain some insight of the role of educational selection using simple tabulations from the IPUMS data. Table 3 shows the tabulations for the total number of Southern born black men who were skilled, migrants, and skilled-migrants to the North from the IPUMS samples. The net number of migrants from 1870-1910 is close to 200,000 men, which is close to the figures that have been reported by other demographers and those in Table 2. Recalling that skill is classified as non-farm, non-laborer, non-domestic work, the number of migrants who are skilled

closely matches the number of migrants for each census year. Table 3 also reports the rural/urban geographic distribution of the Southern born black men by skill and migration status. By 1880, more than half of the migrants were located in urban areas, in sharp contrast to the less than 20% of the total Southern born black population. Skilled migrants were even more likely to be urban than migrants in general. An important fact to take away from the table is that skilled men were far more concentrated in urban areas at all times, and this surely impacted their ability to learn about job opportunities (or opportunities in general) in other locations, and to migrate. Also note, however, that during this time more and more African American men were moving to urban areas, exactly the opposite of what we would expect if the "restrictive laws" hypothesis held. Although most African Americans remained in the South, there was a 20% jump in the number of African Americans living in urban areas. Vagrancy laws do not appear to keep African Americans from migrating to different areas within the South. It is difficult to reconcile the "restrictive laws" hypothesis with the evidence presented in Table 3.

Furthermore, Table 3 shows the literacy rates for various segments of Southern born black male population from 1870-1910. It is clear that skilled men had far higher literacy rates than the general population, and migrants had even higher literacy rates, with skilled migrants having the highest literacy rates at all times. This appears to cast doubt on the "soft skills" hypothesis discussed earlier, and it also bolsters the notion that migrants during this time period were not representative of the general African American population, whose literacy rate was substantially lower. African American migrants during this time period were more literate, skilled, and urban than the general African American population. The fourth column of the bottom panel of Table 3 shows that from 1870 to 1910, there was a strong gain in the North's share of the skilled black population. Note that this growth is gradual, and that it corresponds to an analogous drop in the number of skilled black men in the South. It appears that migration contributed to the decline in the number of skilled black men in the South. The fifth column shows that the proportion of migrants who were skilled was significantly higher than the proportion of skilled men in the general population, and this also lends support to the notion that the migrants from 1870-1910 were disproportionately skilled. The remaining four columns show that migrants tended to concentrate in urban areas and that skilled migrants were more likely than migrants in general to migrate to urban areas. Figure 1 graphically displays the results. The literacy rate of all migrants is very close to the literacy rate of skilled migrants. The summary

tabulations lend support to the "migration" hypothesis. Skilled men are significantly over represented among the migrants of this time period, and the share of skilled men living in the South declines during this period. Also, it seems as if urbanity and literacy were also factors in the pre-Great migration of African Americans.

We can be more systematic in our approach to educational selection in migration. Looking at the IPUMS data in more detail, we can estimate the size of educational selection by regressing migration status on a host of covariates including literacy, with the general specification

$$Mig_i = \beta_0 + \beta_1 LIT_i + \beta_2 OCC_i + \beta_3 INCOME_i + \beta_4 SEI + X'\theta + \varepsilon_i \quad (8)$$

Table 4 reports the results from a linear probability model using Ordinary Least Squares (OLS), (note that the results of probit and logit models yielded quite similar marginal effects, so the linear probability model is used for exposition). Once all of the covariates are added to the regression specification literacy increases the probability of migrating to a different state than the one born in by nearly 5%. This educational selection is robust to slave status. Both ex-slaves and free blacks are each about 5% more likely to migrate if literate. This similarity survives to looking at North-South migration, where now migration is defined as living in a different region (North vs. South) from the region of birth. Table 4A shows that both ex-slaves and free blacks were roughly 8% more likely to North-South migrate if they were literate.

As mentioned earlier, there are limits to interpreting this evidence as being educational selection. The question we should ask is how much of this 5% that we attribute to educational selection should be attributed to factors that are well correlated with education? To answer that question we should look at measures of not only migration, but also the stock and flow of health more generally. Below, I consider the estimates of educational selection with the CTS data, which allow us to estimate the effects of literacy on migration while controlling for health.

B. Evidence from the Colored Troops Sample of Union Army Veterans

The Colored Troops sample of the Union Army veterans' data gives us a unique opportunity to measure both the stock and flow of health as well as educational selection in migration. Table 5 shows linear probability models of migration similar to those in Table 4 for

three different types of migrations (interstate, inter-region, and South-North).[18] As in equation eight (8), I regress the migration variable (defined differently as described below) on literacy, height, health status, and other measures similar to those from IPUMS. The migration in Table 5 is for the state of residence for a veteran in the 1900 Census and the state of enlistment when he enrolled in the Union Army. These are the primary migration results for the CTS data, and there are several interesting facts to note. First, the control for height, which is taken as a measure of the stock of health (as suggested by Steckel 1995 and others), does not play a statistically significant role in the propensity to migrate. Secondly, the marginal effect of literacy on migration for the Colored Troops is much larger than the effect measured with the Census returns, as we expected given the differences in the samples. Third, being ill during the war, which is defined as any illness or injury during the war, has a statistically significant effect in most of the regressions, and has an effect on all types of migrations.[19] As would be expected, the presence of these negative health shocks decreases the likelihood that a veteran would migrate. Fourth, the inclusion of wealth measured in 1900, employment status, and farm ownership, in addition to illness, reduces the effect of education dramatically. The marginal effect of literacy on education reduces by about one-fifth in all of the specifications except the interstate migration, where the health controls increase the propensity to migrate.

Table 5A looks at these results disaggregated by slave status, and shows that there are large differences in the effects of education and health on migration by slave status. Ex-slaves were much more likely to migrate if literate, when compared to free blacks. Somewhat surprisingly, however, the effect of a negative health shock such as war illness or injury has the same effect of lessening the probability that one would migrate. Illness or injury reduces the probability of migration by about 4% overall. The net result, we see, is that ex-slaves were much more likely to migrate, and even if injured they exhibited more educational selection in their migration than free blacks.

To gauge the robustness of this result, I check in three ways. The first is to use a measure of migration that similar to the measure used in Table 5. In Table 6, the measure of migration is the 1900 state of residence and the state of residence given at the time of enlistment into the

[18] Probit and Logit models similar to those presented in Tables 4 through 8 yield similar results for the marginal effects. For ease of interpretation, I report the linear probability results as in Table 4.

[19] Due to military definitions, the illness recorded here is an illness or injury that prevented the troop from serving with their regiment. As such, illness from the military records can be taken as a severe health shock during the Civil War.

Union Army. This will obviously be highly correlated with the state of enlistment (see Litwack 1979 and Costa and Kahn 2006), although not perfectly so. What we find are results very similar to the results in Table 5, except that now the effect of illness or injury during the war does not have a statistically significant effect on the propensity to migrate. Furthermore, the inclusion of illness again leads to declines in the effect of education on migration. The effect of literacy on North-South migration declines by almost one-third once health is added as a covariate.

Consistent with the results of Table 5A, Table 6A shows that ex-slaves and free blacks did have different baseline migration propensities, and that slaves were more likely to be migrants if literate than blacks. For both groups, the addition of health and other factors reduces the educational selection effect, in some cases by nearly a half for free blacks. Health shocks do play a significant role in the North-South migration of ex-slaves, but in other cases do not exhibit the statistically significant pattern seen in Table 5A.

Going further, we can use another measure of migration that will not be as strongly correlated as the first two. Table 7 shows migration as measured by the state of residence in 1900 with the state of discharge from military service. Since the discharge state will always be well correlated with the enlistment state this robustness test serves two purposes. The first is to see if place of discharge alters the marginal effect of literacy on the propensity to migrate (Lee 2005), and also to see if the inclusion of the other covariates lowers that probability in the same manner as in Tables 5 and 6. The results confirm the findings of Table 5 on both counts. While literacy had almost no effect on interstate migration (perhaps largely because troops would be prone to move to their home state after discharge), literacy does have an effect on inter-regional and South-North migrations. Also, it appears that illness or injury during the war induced troops to be more likely to stay in the state in which they were discharged. Also, as with the previous estimates in Table 5, Table 6 shows that the effect of literacy on migration decreases substantially once the other covariates are included.

Table 7A shows that the pattern holds by slave status as well. Ex-slaves were less likely to migrate if they had been injured in the war, but for free blacks the effect was small and not significant. Similarly, free blacks were not very likely to migrate from the state of discharge, and the effect of literacy on their migration status was negative, which would show that free blacks preferred to stay in their states of enlistment rather than migrate to another location.

While literacy appears to have a small effect on interstate migration for ex-slaves, literacy has a substantially larger effect for the North-South migration of ex-slaves.

The data also allows for us to check the robustness of the result in a different way. In Table 8 migration is measured as the state of residence in 1900 and the state of residence in 1910. Migrations at this time, when veterans of the Civil War were aged, are not likely to be prone to educational selection—in short, we would not expect education to have a significant effect on migrations of this type. The results of Table 8 confirm that there was little educational selection at older ages for migration, and illness during the war was actually a significant factor in favor of migration, which could be a sign of older men moving to the homes of their children for old age support. When disaggregating by slave status the result remains, neither ex-slaves nor free blacks exhibited much in the way of educational selection in migration at this late stage of life.

The last measure of robustness is a different measure of migration—the actual distance between the state of enlistment and the 1900 location of the veteran. Rather than looking at migration status as a dichotomous variable, migration here is continuous. I estimate the regression

$$(9) \qquad Dist_i = \beta_0 + \beta_1 LIT_i + \beta_2 INJURED_i + \sum_k \beta_k ILL_{ki} + \sum_j \beta_j WAR_{ji} + + X'\theta + \varepsilon_i$$

where the distance of migration is regressed on literacy, whether the veteran had been injured during the war, illness by type during the war, and war characteristics such as the fraction of the veteran's regiment that dies in the war and whether the regiment was a fighting regiment or not. Table 9 presents the results. This result allows us to measure the effect of specific war illnesses on the migration distance itself. The results show that cholera, malaria, and typhoid each had significant effects of migration distance, but not all in the same direction. Having malaria during the war increased the distance of migration, while cholera and typhoid each decreased the distance migrated. In addition, being a member of a fighting regiment increased the distance migrated, which could be due to the fact that fighting regiments were likely to travel to distant locations which in active duty. The Company fragmentation index, which is an index of the company member's similarity to each other (with 0 being very similar and 1 for high dissimilarity), is also related to the distance migrated. Veterans from more diverse companies were more likely to migrate further distances. This result agrees with Costa and Kahn (2006).

Fractions of the company free and light skinned had a negative effect on the distance migrated. Lastly, and most simply, age at death is positively related to migration distance—those who did migrate lived longer. This is the strongest evidence that health and migration were positively related.

VI. Conclusion

Although other factors confound its measurement, this paper has found robust evidence of educational selection in African American migration after the Civil War and before the Great Migration. There were striking differences by slave status, but overall there was positive educational selection on migration. These results, however, are preliminary—further extensions and sensitivity analyses are needed. Future work on this (preliminary) project will contain the following additions:

1) In the IPUMS data, sorting out the role of schooling on migrants who were school-aged after the Civil War, to better capture the effects of the timing of literacy with the timing of migration
2) In the CTS, using more information about the troops and their companies to control for social network factors in migration, along the lines of Costa and Kahn (2006), but extending that analysis by including additional evidence for other social networks such as churches, Pullman Porters, and others who could have helped veterans form expectations about distant places.
3) Also in the CTS, looking at the effects of particular health shocks on the propensity to migrate. It has been asserted by others that malaria was more common among the CTS troops than others (see Litwack 1979), and yet we do not know the extent to which exposure to different diseases impacted migration, schooling, and other human-capital decisions.
4) Using further narrative evidence to correctly gauge the desires and goals of both ex-slaves and free blacks in the Reconstruction era and beyond.

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Figure 1
Literacy Rate of Southern Born African American Men

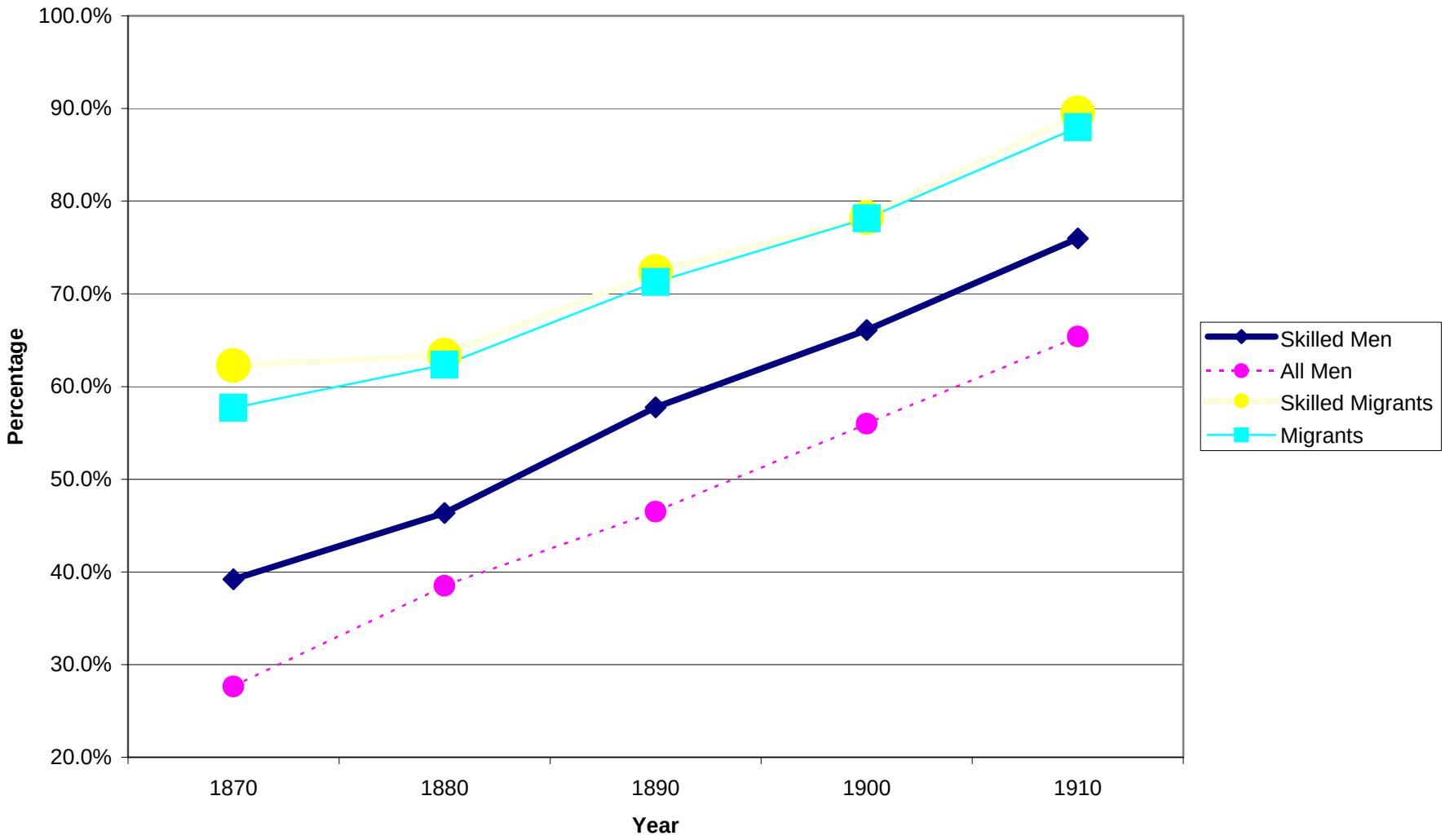

Table 1
Changes in African American Skill After the Civil War

Panel A
Percentage of Black Males in Selected Occupations, Savannah, GA

Occupation	Year		Percent Change
	1870	1880	
Carpenters	40%	32%	-8%
Plasterers	73%	44%	-29%
Painters	32%	23%	-9%

Note: Data comes from William Harris, *The Harder We Run* , 1982, (p.17).

Panel B
Black Household Occupations, Percentages
Twenty-Seven Cotton Belt Counties

Category	Year			1870-1900 % Change
	1870	1880	1900	
High White Collar	0.3	0.3	1.4	1.1
Low White Collar	0.7	2.0	0.6	-0.1
Skilled	4.4	2.6	1.7	-2.7
Farmer	15.4	42.1	70.8	55.4
Semi-skilled/Service	3.8	3.2	4.3	0.5
Laborer	66.6	47.0	21.2	-45.4
Keeping House	7.4	2.9	0	-7.4
None	1.5	0	0	-1.5

Note: Data is from Jacqueline Jones, *Labor of Love, Labor of Sorrow,* 1989(pp. 334, 342).

Panel C
Number of African Americans Employed
in Selected Skilled Occupations

Occupation	1890	1900	1910	Growth Percent	Dev. From Agriculture
Ag Laborers	1,106,728	1,344,125	1,943,755	75.63%	-
Carpenters	22,581	21,113	31,549	39.71%	39.71%
Masons	9,760	14,386	23,650	142.32%	142.32%
Painters	4,447	5,782	9,063	103.80%	103.80%
Plasterers	4,006	3,757	6,783	69.32%	69.32%
Mechanics	746	377	612	-17.96%	-17.96%
Brickmakers	10,521	9,970	16,941	61.02%	61.02%
Stone Cutter	1,279	1,257	1,513	18.30%	18.30%
Millers	1,487	895	1,577	6.05%	6.05%
Blacksmiths	10,988	10,100	10,995	0.06%	0.06%
Shoemaker	5,087	4,574	6,415	26.11%	26.11%
Cabinetmakers	345	342	469	35.94%	35.94%
Coopers	2,648	2,964	2,370	-10.50%	-10.50%
Woolen Millers	346	169	262	-24.28%	-24.28%

Note: Growth Precent is the difference between the 1910 and 1890 values divided by the 1890 value
Data from U.S. Bureau of the Census, *Negro Population 1790-1915* , 1968 (pp. 526-527)

Table 2
Summary Measures of African American Migration 1870-1950

Panel A
Percentage Distribution of the African American Population, 1870-1910

	Year				
	1870	1880	1890	1900	1910
The South	90.6	90.5	90.3	89.7	89.0
The North	9.3	9.3	9.4	10.0	10.5
The West	0.1	0.2	0.4	0.3	0.5

* Data from U.S. Bureau of the Census, *Negro Population 1790-1915* , 1968, (p.33)

Panel B
Urban and Rural African American Population, 1890-1910

Year	Urban Pop.	Percentage	Rural Pop.	Percentage
1890	1,481,142	19.8	6,007,534	80.2
1900	2,005,972	22.7	6,828,022	77.3
1910	2,689,229	27.4	7,138,534	72.6

*Data from U.S. Bureau of the Census, Negro Population 1790-1910, 1968 (p. 88)

Panel C
African American Migration Statistics 1870-1950

	Black Migration From South	Net Migration in thousands			
		South	Northeast	North Central	West
1870-1880	68,000	-68	26	42	-
1880-1890	88,000	-88	61	28	-
1890-1900	185,000	-185	136	49	-
1900-1910	194,000	-194	109	63	22
1910-1920	555,000	-555	242	281	32
1920-1930	903,000	-903	435	426	42
1930-1940	480,000	-480	273	152	55
1940-1950	1,581,000	-1581	599	626	356

*Data from William Collins "When the Tide Turned: Immigration and the Delay of the Great Balck Migration" *Journal of Economic History* , Vol. 57, No.3, 1997, (pp. 608, 610).

Table 3
IPUMS Tabulations of Skill, Migration and Literacy 1870-1910

Panel A
Change in the Number of Skilled Migrants, Skilled Men and Migrants by Census Year

Year	Skilled Migrant	Skilled	Migrant	SM/M*	SM/S*
1870-1880	68,500	467,750	83,250	82.28%	14.64%
1880-1890	33,366	181,573	25,158	132.63%	18.38%
1890-1900	33,366	181,573	25,158	132.63%	18.38%
1900-1910	71,832	242,082	77,013	93.27%	29.67%

* S= Skilled, SM= Skilled Migrant

Panel B
Geographic Distribution of African American Men by Skill and Migration Status

	Total		Skilled Men		Migrants		Skilled Migrants	
Year	% Rural	% Urban	% Rural	% Urban	% Rural	% Urban	% Rural	% Urban
1870	91.01%	8.99%	76.31%	23.69%	60.37%	39.63%	41.04%	58.96%
1880	84.06%	15.94%	66.60%	33.40%	47.59%	52.41%	31.28%	68.72%
1890^	81.04%	18.96%	60.46%	39.54%	38.71%	61.29%	26.12%	73.88%
1900	77.46%	22.54%	55.96%	44.04%	31.90%	68.10%	22.76%	77.24%
1910	71.25%	28.75%	41.80%	58.20%	28.52%	71.48%	19.77%	80.23%

^ Note that 1890 data is the average of the 1880 and 1900 data

Panel C
Literacy Rate of Southern Born African American Men by Skill and Migrant Status

Year	Total	Skilled	Migrant	Skilled Migrant
1870	27.62%	39.20%	57.70%	62.26%
1880	38.51%	46.37%	62.35%	63.37%
1890^	46.50%	57.76%	71.29%	72.40%
1900	55.97%	66.11%	78.14%	78.23%
1910	65.39%	75.99%	87.97%	89.53%

^ Note that 1890 data is the average of the 1880 and 1900 data

Panel D
Percentage of Total Population that are Migrants or Skilled

Year	M/Total %*	S/Total %*	SM/S %*	SM/M %*	SMU/MU %*	SMU/SU %*	SMR/MR %*	SMR/SR %*
1870	5.27%	33.77%	9.99%	64.05%	96.15%	24.85%	43.94%	5.37%
1880	7.42%	44.64%	12.17%	73.19%	95.98%	25.04%	48.10%	5.71%
1890^	7.36%	45.45%	13.00%	80.85%	97.21%	24.40%	54.40%	5.64%
1900	7.55%	47.52%	13.82%	87.02%	97.94%	24.05%	61.62%	5.58%
1910	8.67%	47.39%	16.22%	88.66%	99.52%	22.35%	61.45%	7.67%

* S= Skilled, M= Migrant, U= Urban, R= Rural. Total is the total number of men.
For example, SM/S is the ratio of Skilled Migrants over all skilled men.
^ Note that 1890 data is the average of the 1880 and 1900 data

Note: Thes tabulations use the person weights in the IPUMS data so that the percentages are representative of the African American population at the time of enumberation.

Table 4
Census Estimates of Educational Selection in African American Migration, 1870-1910

					Former Slaves		Free Blacks	
	I	II	III	IV	V	VI	VII	VIII
Constant	0.185	0.101	-0.063	-0.062	0.232	-0.062	0.184	-0.065
	(100.14)**	(53.64)**	(8.50)**	(8.47)**	(99.70)**	(8.47)**	(103.69)**	(9.02)**
Literate	0.129	0.052	0.048	0.048	0.066	0.048	0.13	0.044
	(50.40)**	(19.61)**	(14.41)**	(14.39)**	(14.60)**	(14.39)**	(51.86)**	(13.56)**
Year is 1880	-0.043	-0.047	-0.044	-0.045	0.036	-0.045	-0.041	-0.036
	(15.38)**	(17.67)**	(10.69)**	(10.73)**	(8.33)**	(10.73)**	(15.28)**	(8.94)**
Year is 1900	-0.059	-0.065	-0.096	-0.096	0.089	-0.096	-0.059	-0.087
	(22.81)**	(25.45)**	(24.79)**	(24.87)**	(16.12)**	(24.87)**	(23.03)**	(23.11)**
Year is 1910	-0.06	-0.068	-0.115	-0.115	0.065	-0.115	-0.06	-0.104
	(17.98)**	(20.82)**	(23.96)**	(24.01)**	(6.71)**	(24.01)**	(18.05)**	(22.26)**
Mulatto		0.006	0.004	0.004		0.004		0.001
		(1.7)	(0.86)	(0.84)		(11.14)**		(0.21)
Occscore		0.013	0.003	0.004		-0.001		0.003
		(55.34)**	(11.09)**	(11.14)**		(3.21)**		(10.55)**
SEI		0	-0.001	(-0.001)		0.004		-0.001
		(1.43)	(3.10)**	(3.21)**		(0.84)		(2.27)*
Age			0.012	0.012		0.114		0.012
			(27.29)**	(25.58)**		(22.67)**		(25.49)**
Age^2			0	0		0.168		0
			(13.26)**	(12.97)**		(21.90)**		(12.82)**
Large City			0.168	0.168		0.012		0.152
			(21.89)**	(21.90)**		(25.58)**		(20.36)**
Urban Location			0.115	0.114		0		0.114
			(23.16)**	(22.67)**		(12.97)**		(23.30)**
In Labor Force				-0.011		-0.011		-0.005
				(2.29)*		(2.29)*		(1.12)
Observations	143108	143108	86041	86041	53488	53488	88797	88797
R-squared	0.02	0.09	0.1	0.1	0.01	0.1	0.02	0.1

Robust t-statistics in parentheses (* significant at 5% level; ** significant at 1% level).
Source: Author's calculation from IPUMS sample of African American males over the age of 13 at time of Census enumeration.
Each colum is a separate OLS regression. The dependent variable is an indicator that equals 1 if the current location is a different state from the state of birth (mean= .185 for whole sample, .272 for former slaves, and .121 for free Blacks)

Table 4A
Census Estimates of Educational Selection in African American North-South Migration, 1870-1910

					Former Slaves		Free Blacks	
	I	II	III	IV	V	VI	VII	VIII
Constant	0.051	0.005	-0.095	-0.095	0.051	-0.095	0.062	-0.094
	(32.52)**	(3.03)**	(12.92)**	(12.90)**	(32.52)**	(12.90)**	(37.94)**	(12.75)**
Literate	0.144	0.106	0.086	0.086	0.144	0.086	0.149	0.09
	(47.02)**	(34.15)**	(23.05)**	(23.02)**	(47.02)**	(23.02)**	(48.61)**	(23.93)**
Year is 1880	-0.011	-0.014	-0.012	-0.013	-0.011	-0.013	-0.023	-0.023
	(4.37)**	(5.52)**	(2.98)**	(3.04)**	(4.37)**	(3.04)**	(8.79)**	(5.42)**
Year is 1900	-0.017	-0.016	-0.04	-0.04	-0.017	-0.04	-0.03	-0.05
	(6.88)**	(6.28)**	(9.80)**	(9.92)**	(6.88)**	(9.92)**	(11.56)**	(12.12)**
Year is 1910	-0.016	-0.021	-0.056	-0.056	-0.016	-0.056	-0.029	-0.067
	(4.62)**	(6.03)**	(10.38)**	(10.44)**	(4.62)**	(10.44)**	(8.22)**	(12.31)**
Mulatto		0.032	0.024	0.024		0.024		0.029
		(8.42)**	(3.94)**	(3.92)**		(3.92)**		(4.89)**
Occscore		0.008	0.003	0.003		0.003		0.003
		(25.29)**	(6.94)**	(7.39)**		(7.39)**		(8.07)**
SEI		-0.002	-0.002	-0.002		-0.002		-0.002
		(5.09)**	(4.81)**	(4.94)**		(4.94)**		(5.09)**
Age			0.005	0.006		0.006		0.006
			(12.40)**	(12.27)**		(12.27)**		(13.01)**
Age^2			0	0		0		0
			(7.31)**	(7.72)**		(7.72)**		(8.20)**
Large City			0.253	0.253		0.253		0.236
			(19.80)**	(19.81)**		(19.81)**		(19.04)**
Urban Location			0.198	0.196		0.196		0.194
			(29.45)**	(28.89)**		(28.89)**		(28.87)**
In Labor Force				-0.016		-0.016		-0.019
				(3.11)**		(3.11)**		(3.79)**
Observations	143108	143108	86041	86041	143108	86041	147510	88797
R-squared	0.03	0.04	0.1	0.1	0.03	0.1	0.03	0.1

Robust t-statistics in parentheses (* significant at 5% level; ** significant at 1% level).
Source: Author's calculation from IPUMS sample of African American males over the age of 13 at time of Census enumeration.
Each colum is a separate OLS regression. The dependent variable is an indicator that equals 1 if the current location is in a different region (North v. South) from the region of birth (mean= .085 for whole sample, .109 for former slaves, and .067 for free Blacks)

Table 5
Migration and Selection from the Colored Troops Sample by Migration Type
Does Veteran in 1900 Live in a State Different From the State of Enlistment?

	Interstate		Interregional		North-South	
	I	II	III	IV	V	VI
Constant	19.731	23.583	12.998	11.916	17.005	17.854
	(1.05)	(1.38)	(0.67)	(0.62)	(1.32)	(1.25)
Height	-0.865	-1.063	-0.581	-0.537	0.786	0.838
	(1.03)	(1.39)	(0.68)	(0.62)	(1.33)	(1.28)
Height^2	0.013	0.016	0.009	0.008	-0.012	-0.013
	(1.04)	(1.43)	(0.69)	(0.65)	(1.33)	(1.29)
Height^3	0	0	0	0	0	0
	(1.04)	(1.46)	(0.71)	(0.67)	(1.33)	(1.31)
Literate	0.115	0.123	0.182	0.169	0.155	0.118
	(8.35)**	(9.11)**	(13.74)**	(12.85)**	(13.45)**	(10.06)**
Farmer		-0.068		-0.111		-0.201
		(4.46)**		(8.12)**		(21.96)**
Married		0.006		-0.053		0.049
		(0.40)		(3.62)**		(3.92)**
Ill/Injured in War		-0.051		-0.045		-0.05
		(3.90)**		(3.67)**		(4.91)**
Unemployed		-0.217		-0.148		-0.069
		(16.13)**		(11.56)**		(6.48)**
Wealth in 1900		0.006		0.008		0.026
		(0.21)		(0.33)		(1.21)
Observations	5891	5891	5891	5891	5891	5891
R-squared	0.01	0.06	0.03	0.06	0.04	0.09

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable = .443 (interstate), .323 (inter-regional), .180 (North-South)

Table 5A
Migration and Selection from the Colored Troops Sample by Migration Type and Slave Status
Does Veteran in 1900 Live in a State Different From the State of Enlistment?

	Former Slaves						Free Blacks					
	Interstate		Interregional		North-South		Interstate		Interregional		North-South	
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
Constant	-4.193	5.42	-20.014	-18.17	-9.157	-18.986	36.584	35.627	37.427	37.788	-26.492	-20.015
	(0.18)	(0.26)	(1.05)	(0.91)	(0.47)	(1.01)	(2.17)*	(2.06)*	(1.86)	(1.88)	(1.55)	(1.13)
Height	0.169	-0.285	0.878	0.781	0.463	0.921	-1.585	-1.572	-1.654	-1.671	1.174	0.891
	(0.16)	(0.3)	(1.0)	(0.86)	(0.52)	(1.07)	(2.09)*	(2.03)*	(1.85)	(1.86)	(1.5)	(1.1)
Height^2	-0.002	0.005	-0.013	-0.011	-0.008	-0.015	0.023	0.023	0.025	0.025	-0.017	-0.013
	(0.13)	(0.36)	(0.95)	(0.79)	(0.56)	(1.12)	(2.04)*	(2.02)*	(1.85)	(1.87)	(1.45)	(1.05)
Height^3	0	0	0	0	0	0	0	0	0	0	0	0
	(0.1)	(0.41)	(0.9)	(0.72)	(0.6)	(1.16)	(2.00)*	(2.02)*	(1.85)	(1.88)	(1.4)	(1.02)
Literate	0.164	0.18	0.21	0.216	0.223	0.203	0.064	0.065	0.153	0.113	0.092	0.035
	(8.32)**	(9.70)**	(11.07)**	(11.66)**	(12.96)**	(11.94)**	(3.33)**	(3.32)**	(8.22)**	(5.97)**	(5.96)**	(2.15)*
Farmer		-0.077		-0.062		-0.201		-0.072		-0.165		-0.213
		(3.34)**		(3.01)**		(16.00)**		(3.51)**		(8.86)**		(15.77)**
Married		-0.071		-0.108		-0.003		0.077		-0.007		0.094
		(3.47)**		(5.05)**		(0.13)		(3.71)**		(0.37)		(5.95)**
Ill/Injured in War		-0.037		-0.03		-0.047		-0.064		-0.055		-0.051
		(2.03)*		(1.76)		(3.36)**		(3.44)**		(3.12)**		(3.60)**
Unemployed		-0.255		-0.164		-0.096		-0.182		-0.133		-0.048
		(13.62)**		(9.15)**		(6.39)**		(9.43)**		(7.32)**		(3.25)**
Wealth in 1900		-0.017		-0.006		0.01		0.046		0.039		0.046
		(0.47)		(0.17)		(0.35)		(1.12)		(0.98)		(1.41)
Observations	2947	2947	2947	2947	2947	2947	2944	2944	2944	2944	2944	2944
R-squared	0.02	0.09	0.04	0.08	0.07	0.12	0	0.04	0.02	0.06	0.01	0.09

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable (Slave) = .423 (interstate), .307 (inter-regional), .189 (North-South)
Mean of Dependent Variable (Free) = .462 (interstate), .338 (inter-regional), .172 (North-South)

Table 6
Migration and Selection from the Colored Troops Sample by Migration Type
Does Veteran in 1900 Live in a State Different From the State of Residence at Enlistment?

	Interstate		Interregional		North-South	
	I	II	III	IV	V	VI
Constant	10.726	6.101	2.362	-1.999	2.876	0.460
	(0.55)	(0.31)	(0.21)	(0.18)	(0.30)	(0.05)
Height	-0.424	-0.212	-0.095	0.105	-0.102	0.016
	(0.48)	(0.24)	(0.19)	(0.21)	(0.23)	(0.03)
Height^2	0.005	0.002	0.001	-0.002	0.001	-0.001
	(0.41)	(0.17)	(0.17)	(0.23)	(0.16)	(0.11)
Height^3	0	0	0	0	0	0
	(0.33)	(0.09)	(0.13)	(0.26)	(0.09)	(0.19)
Literate	0.048	0.033	0.056	0.043	0.052	0.036
	(4.01)**	(2.76)**	(5.21)**	(3.94)**	(5.84)**	(3.85)**
Farmer		-0.081		-0.059		-0.068
		(6.64)**		(5.53)**		(8.62)**
Married		0.008		-0.018		0.028
		(0.58)		(1.47)		(2.95)**
Ill/Injured in War		0.015		-0.011		-0.02
		(1.39)		(1.07)		(2.47)*
Unemployed		-0.052		-0.036		0.006
		(4.47)**		(3.39)**		(0.73)
Wealth in 1900		0.32		0.24		0.154
		(11.74)**		(9.05)**		(6.62)**
Observations	5891	5891	5891	5891	5891	5891
R-squared	0.01	0.05	0.01	0.04	0.01	0.04

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable = .226 (interstate), .164 (inter-regional), .101 (North-South)

Table 6A
Migration and Selection from the Colored Troops Sample by Migration Type and Slave Status
Does Veteran in 1900 Live in a State Different From the State of Residence at Enlistment?

	Former Slaves						Free Blacks					
	Interstate		Interregional		North-South		Interstate		Interregional		North-South	
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
Constant	8.187	2.187	-3.417	-8.49	2.424	-3.646	9.71	6.399	5.039	1.501	2.264	2.294
	(0.3)	(0.08)	(0.18)	(0.45)	(0.15)	(0.23)	(0.56)	(0.37)	(0.42)	(0.12)	(0.21)	(0.21)
Height	-0.247	0.025	0.186	0.413	-0.076	0.206	-0.437	-0.275	-0.237	-0.066	-0.084	-0.073
	(0.2)	(0.02)	(0.21)	(0.48)	(0.1)	(0.28)	(0.55)	(0.35)	(0.44)	(0.12)	(0.17)	(0.14)
Height^2	0.002	-0.002	-0.003	-0.007	0.001	-0.004	0.006	0.004	0.004	0.001	0.001	0.001
	(0.1)	(0.11)	(0.24)	(0.51)	(0.06)	(0.33)	(0.54)	(0.32)	(0.45)	(0.12)	(0.13)	(0.08)
Height^3	0	0	0	0	0	0	0	0	0	0	0	0
	(0.01)	(0.22)	(0.28)	(0.53)	(0.01)	(0.38)	(0.51)	(0.29)	(0.45)	(0.11)	(0.08)	(0.01)
Literate	0.054	0.045	0.072	0.064	0.076	0.063	0.042	0.024	0.043	0.027	0.034	0.017
	(3.09)**	(2.61)**	(4.48)**	(4.01)**	(5.37)**	(4.43)**	(2.58)*	(1.39)	(3.02)**	(1.79)	(3.01)**	(1.4)
Farmer		-0.101		-0.068		-0.091		-0.068		-0.052		-0.049
		(5.54)**		(4.16)**		(7.53)**		(3.99)**		(3.53)**		(4.57)**
Married		0.017		-0.01		0.035		0.001		-0.027		0.021
		(0.88)		(0.52)		(2.34)*		(0.06)		(1.63)		(1.75)
Ill/Injured in War		0.01		-0.021		-0.037		0.02		-0.002		-0.006
		(0.64)		(1.47)		(2.98)**		(1.3)		(0.12)		(0.54)
Unemployed		-0.076		-0.047		-0.012		-0.028		-0.028		0.021
		(4.45)**		(2.97)**		(0.93)		(1.73)		(1.97)*		(1.91)
Wealth in 1900		0.241		0.18		0.112		0.419		0.312		0.202
		(6.67)**		(5.23)**		(3.71)**		(10.45)**		(7.59)**		(5.55)**
Observations	2947	2947	2947	2947	2947	2947	2944	2944	2944	2944	2944	2944
R-squared	0.01	0.04	0.01	0.03	0.01	0.04	0.01	0.06	0.01	0.05	0.01	0.04

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable (Slave) = .236 (interstate), .182 (inter-regional), .120 (North-South)
Mean of Dependent Variable (Free) = .217 (interstate), .149 (inter-regional), .085 (North-South)

Table 7
Migration and Selection from the Colored Troops Sample by Migration Type
Does Veteran in 1900 Live in a State Different From the State of Discharge?

	Interstate		Interregional		North-South	
	I	II	III	IV	V	VI
Constant	15.084	10.873	29.884	23.435	-9.403	-13.178
	(0.73)	(0.52)	(1.62)	(1.35)	(0.88)	(1.10)
Height	-0.67	-0.468	-1.352	-1.038	0.432	0.622
	(0.73)	(0.50)	(1.66)	(1.34)	(0.89)	(1.14)
Height^2	0.01	0.007	0.021	0.016	-0.007	-0.01
	(0.73)	(0.49)	(1.71)	(1.36)	(0.88)	(1.16)
Height^3	0	0	0	0	0	0
	(0.74)	(0.48)	(1.75)	(1.36)	(0.88)	(1.18)
Literate	0.016	-0.019	0.039	-0.008	0.12	0.081
	(1.17)	(1.37)	(2.86)**	(0.60)	(10.64)**	(7.10)**
Farmer		-0.178		-0.206		-0.175
		(12.44)**		(15.31)**		(19.71)**
Married		0.026		-0.006		0.015
		(1.70)		(0.40)		(1.23)
Ill/Injured in War		-0.035		-0.007		-0.004
		(2.68)**		(0.56)		(0.38)
Unemployed		-0.065		-0.031		-0.018
		(4.83)**		(2.39)*		(1.79)
Wealth in 1900		0.233		0.188		0.081
		(9.09)**		(6.97)**		(3.50)**
Observations	5891	5891	5891	5891	5891	5891
R-squared	0	0.04	0	0.05	0.02	0.06

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable = .453 (interstate), .363 (inter-regional), .172 (North-South)

Table 7A
Migration and Selection from the Colored Troops Sample by Migration Type and Slave Status
Does Veteran in 1900 Live in a State Different From the State of Discharge?

	Former Slaves						Free Blacks					
	Interstate		Interregional		North-South		Interstate		Interregional		North-South	
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
Constant	13.505	-7.523	43.807	20.695	-15.928	-28.912	14.887	10.785	19.575	18.348	-6.395	-0.99
	(0.38)	(0.22)	(1.58)	(0.76)	(0.84)	(1.51)	(0.51)	(0.38)	(0.72)	(0.71)	(0.58)	(0.09)
Height	-0.637	0.346	-2.045	-0.967	0.753	1.355	-0.634	-0.448	-0.839	-0.766	0.269	0.05
	(0.4)	(0.23)	(1.65)	(0.8)	(0.87)	(1.55)	(0.49)	(0.35)	(0.7)	(0.67)	(0.54)	(0.09)
Height^2	0.01	-0.005	0.032	0.015	-0.012	-0.021	0.009	0.006	0.012	0.011	-0.004	-0.001
	(0.43)	(0.23)	(1.73)	(0.85)	(0.89)	(1.57)	(0.48)	(0.34)	(0.68)	(0.64)	(0.49)	(0.09)
Height^3	0	0	0	0	0	0	0	0	0	0	0	0
	(0.45)	(0.23)	(1.8)	(0.89)	(0.91)	(1.58)	(0.46)	(0.33)	(0.66)	(0.61)	(0.44)	(0.09)
Literate	0.078	0.037	0.106	0.064	0.135	0.112	-0.039	-0.064	-0.02	-0.071	0.107	0.057
	(3.94)**	(1.92)	(5.42)**	(3.29)**	(8.09)**	(6.75)**	(2.04)*	(3.28)**	(1.07)	(3.79)**	(7.00)**	(3.54)**
Farmer		-0.278		-0.26		-0.199		-0.11		-0.177		-0.157
		(13.27)**		(13.19)**		(15.53)**		(5.65)**		(9.70)**		(12.65)**
Married		0.099		0.061		-0.02		-0.029		-0.063		0.047
		(4.41)**		(2.67)**		(1.07)		(1.35)		(2.96)**		(2.99)**
Ill/Injured in War		-0.044		-0.037		-0.018		-0.036		0.015		0.01
		(2.40)*		(2.07)*		(1.25)		(1.97)*		(0.83)		(0.77)
Unemployed		-0.002		0.023		-0.083		-0.13		-0.091		0.044
		(0.1)		(-1.2)		(5.47)**		(6.95)**		(5.08)**		(3.17)**
Wealth in 1900		0.189		0.158		0.057		0.268		0.208		0.115
		(5.73)**		(4.59)**		(1.9)		(6.91)**		(5.04)**		(3.26)**
Observations	2947	2947	2947	2947	2947	2947	2944	2944	2944	2944	2944	2944
R-squared	0.01	0.08	0.01	0.07	0.03	0.08	0	0.04	0	0.04	0.02	0.07

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable (Slave) = .478 (interstate), .395 (inter-regional), .181 (North-South)
Mean of Dependent Variable (Free) = .431 (interstate), .335 (inter-regional), .164 (North-South)

Table 8
Migration and Selection from the Colored Troops Sample by Migration Type
Does Veteran in 1900 Live in a Different State in 1910?

	Interstate		Interregional		North-South	
	I	II	III	IV	V	VI
Constant	7.313	6.799	0.942	0.665	0.47	0.176
	(1.78)	(1.67)	(0.77)	(0.56)	(0.47)	(0.18)
Height	-0.341	-0.314	-0.045	-0.032	-0.02	-0.006
	(1.79)	(1.67)	(0.83)	(0.62)	(0.46)	(0.15)
Height^2	0.005	0.005	0.001	0.001	0	0
	(1.79)	(1.66)	(0.89)	(0.68)	(0.45)	(0.13)
Height^3	0	0	0	0	0	0
	(1.77)	(1.63)	(0.95)	(0.73)	(0.44)	(0.11)
Literate	-0.004	-0.008	0.004	0.004	0.002	0.001
	(1.15)	(2.24)*	(1.94)	(1.77)	(1.18)	(0.59)
Farmer		-0.015		-0.001		-0.003
		(5.28)**		(0.72)		(3.12)**
Married		0.01		-0.004		-0.004
		(2.86)**		(1.52)		(1.71)
Ill/Injured in War		0.009		0.001		0.002
		(3.26)**		(0.63)		(1.69)
Unemployed		0.012		-0.001		-0.001
		(3.73)**		(0.49)		(0.82)
Wealth in 1900		0.022		0.008		0.007
		(2.12)*		(1.32)		(1.37)
Observations	5891	5891	5891	5891	5891	5891
R-squared	0	0.01	0	0	0	0

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable = .015 (interstate), .005 (inter-regional), .002 (North-South)

Table 8A
Migration and Selection from the Colored Troops Sample by Migration Type and Slave Status
Does Veteran in 1900 Live in a Different State in 1910?

	Former Slaves						Free Blacks					
	Interstate		Interregional		North-South		Interstate		Interregional		North-South	
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
Constant	13.723	10.12	2.392	1.676	1.969	1.358	2.293	2.202	-0.112	-0.192	-0.647	-0.732
	(1.42)	(1.07)	(1.18)	(0.88)	(1.03)	(0.77)	(0.92)	(0.89)	(0.07)	(0.11)	(0.59)	(0.68)
Height	-0.64	-0.471	-0.113	-0.081	-0.089	-0.061	-0.103	-0.098	0.005	0.008	0.031	0.036
	(1.43)	(1.07)	(1.26)	(0.96)	(1.07)	(0.8)	(0.92)	(0.89)	(0.06)	(0.11)	(0.63)	(0.73)
Height^2	0.01	0.007	0.002	0.001	0.001	0.001	0.002	0.001	0	0	0	-0.001
	(1.42)	(1.07)	(1.33)	(1.04)	(1.1)	(0.83)	(0.93)	(0.89)	(0.05)	(0.1)	(0.66)	(0.77)
Height^3	0	0	0	0	0	0	0	0	0	0	0	0
	(1.41)	(1.05)	(1.4)	(1.12)	(1.14)	(0.86)	(0.93)	(0.89)	(0.04)	(0.09)	(0.69)	(0.8)
Literate	-0.009	-0.015	0.007	0.006	0.002	0.002	0.003	0.002	0.002	0.002	0.001	0
	(1.81)	(2.75)**	(2.10)*	(1.92)	(1.0)	(0.76)	(0.71)	(0.44)	(0.55)	(0.59)	(0.69)	(0.05)
Farmer		-0.024		-0.003		-0.003		-0.003		0		-0.004
		(6.98)**		(2.30)*		(1.94)		(0.82)		(0.14)		(2.21)*
Married		0.019		-0.007		-0.004		0.002		-0.002		-0.003
		(3.24)**		(1.6)		(1.31)		(0.56)		(0.45)		(1.1)
Ill/Injured in War		0.019		0.001		0.003		-0.002		0.001		0.001
		(4.28)**		(0.43)		(1.74)		(0.54)		(0.4)		(0.58)
Unemployed		0.023		-0.002		0		0		-0.001		-0.002
		(4.80)**		(0.65)		(0.23)		(0.11)		(0.18)		(1.04)
Wealth in 1900		0.021		0.012		0.008		0.019		0.002		0.005
		(1.42)		(1.38)		(1.12)		(1.43)		(0.29)		(0.79)
Observations	2947	2947	2947	2947	2947	2947	2944	2944	2944	2944	2944	2944
R-squared	0.01	0.03	0	0.01	0	0	0	0	0	0	0	0

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Note: Author's Calculations based on Colored Troops Sample.
Mean of Dependent Variable (Slave) = .020 (interstate), .004 (inter-regional), .003 (North-South)
Mean of Dependent Variable (Free) = .010 (interstate), .005 (inter-regional), .002 (North-South)

Table 9
The Distance Between 1900 Residence and State of Enlistment

Constant	175.644	233.038	-23.514
	(15.78)**	(2.69)**	(0.11)
Light Skinned	-14.41	-19.555	19.836
	(0.55)	(0.73)	(0.74)
War Injury	-25.866	-23.559	-16.476
	(1.60)	(1.39)	(0.96)
War Illness	-15.374	-0.893	
	(1.19)	(0.07)	
Literate	63.017	56.034	64.728
	(3.54)**	(3.03)**	(3.01)**
Co. Fragmentation Index		-191.409	-74.829
		(1.71)	(0.49)
Age at Death		1.193	1.473
		(3.82)**	(4.49)**
Fract. Of Co. Died in War			115.561
			(1.27)
Fract. Of Co. Ill/Wounded			-69.39
			(0.16)
Fract. Of Co. Farmers			23.429
			(1.02)
Fract. of Co. Free			-123.787
			(3.13)**
Fract. of Co. Light Skinned			-257.835
			(2.66)**
Fract. of Co. Southern			27.395
			(0.73)
Fract. of Co. Literate			37.921
			(0.37)
Fighting Regiment			59.786
			(2.37)*
Height			0.455
			(0.44)
Chills			-57.904
			(1.49)
Cholera			-130.191
			(3.39)**
Cold			48.941
			(1.26)
Diarrhea			-25.607
			(1.47)
Fever			28.724
			(1.35)
Heart Problems			53.177
			(1.08)
Hepatitis			-71.774
			(1.50)
Lung Problems			139.666
			(1.27)

Malaria			104.502
			(2.17)*
Measles			47.599
			(1.37)
Smallpox			58.713
			(0.98)
Respitory Problems			10.407
			(0.46)
Scurvey			19.08
			(0.62)
Stomach Problems			-25.587
			(0.61)
Syphilis			119.082
			(0.84)
TB			-23.715
			(0.50)
Typhoid			-56.678
			(2.58)**
Observations	2166	2011	1477
R-squared	0.01	0.02	0.1

Robust t-statistics in parentheses
* significant at 5% level; ** significant at 1% level
Dependent Variable is Distance from 1900 location to place of enlistment (mean = 172.45)
Note: Author's Calculations based on Colored Troops Sample.