The Great Migration and Mortality of African Americans

Extended Abstract

Seth Sanders [1,2,3] * Magdalena Muszynska[1]†

[1] Duke Population Research Institute (DuPRI)

[2] Terry Sanford Institute of Public Policy; Duke University

[3] Department of Economics, Duke University

Abstract

The impact of the Great Migration on economic outcomes among African Americans has been widely studied, but little is known about its impact on key health outcomes like longevity. With data from *the Duke Social Security/Medicare Dataset*, we compare mortality rates of blacks born in the South who remained in the South to mortality rates of those who moved out of the South, focusing specifically on birth cohorts from the early twentieth century, i.e., 1905 to 1925. One problem with a direct comparison of mortality among migrants and non-migrants is the issue of selective migration: The healthiest individuals (or healthiest parents) chose to migrate. Fortunately, we can make headway on this latter issue. Preliminary analysis, demonstrates that being born near a North-South railway line had an extraordinarily powerful impact on the probability a black person migrated out of the South. For example, we show that among blacks in born in Mississippi in the years 1905-1925 in towns along the Illinois Central Railway, nearly 80% had migrated out of Mississippi and were still alive at old age (65+ years of age). We show also that the corresponding figure is substantially lower, approximately 65%, for those not born on the rail line. We argue that the fact that we can distinguish between those born on the railway lines and far from the lines, gives us a chance to further speculate on the effect of selective migration on old-age mortality, with it effect being stronger for those not born on the rail line.

*Corresponding Author; Email: seth.sanders@duke.edu

†mm135@duke.edu

1 Introduction

The Great Migration is one of the most important social phenomena of the twentieth century. A large literature examines the role of the Great Migration as an important contributor to the economic progress of African Americans in the twentieth century; there is broad agreement that African American economic progress in the U.S. cannot be understood separate from the Great Migration itself. An entirely separate literature examines the complex relationship between economic welfare and health generally, and a modest sub-set of this literature considers specifically the link between the economic progress of African Americans and the decrease in black-white health disparities and mortality outcomes. It is striking that there appears to be no empirical work that examines directly the role of the Great Migration on such key health outcomes as longevity among African Americans. Indeed, in the empirical literature on black-white mortality disparities only a few papers take into account where people were born. This scarcity of empirical evidence on the role of birthplace and subsequent mortality constitutes a major gap for our understanding of the evolution of racial morality disparities in the U.S. It is believed that early childhood conditions, even *in utero* conditions, play a key role in determining adult health status. Thus observed mortality outcomes of many black Americans in the late twentieth century are plausibly linked to the harsh and uneven economic conditions of rural sharecropping counties in the South where many of these individuals were born, even if late-life outcomes of these African Americans are observed in the North, Midwest or West. Of course, more generally, improved economic conditions for blacks who did move out of the South might have contributed to improved late-life health outcomes, so migration might have had the long-term causal effect of improving mortality. There is simply no systematic evidence one way or another on this matter. The aim of this paper is to study the effect of the Great Migration on the late-life mortality of African Americans. We thus compare mortality outcomes of blacks who were born in the South but moved to the North to those who were born in the South and remained in the South. Moreover, we control for selective migration - the possibility that people who chose to migrate, or who's parents chose to migrate, differ along unobservable dimensions from those who chose to stay. Our

empirical strategy for dealing with the selective migration problem is to exploit an observation that has been developed by historians: On the basis of personal accounts of migrants, and observations about migratory patterns, historians have suggested that ready access to railroad lines (including access to black-focused newspapers that report employment opportunities in Northern cities, distributed by black porters at railroad stations) was a major factor in migration to the North. Using the detailed location information on birth, we can determine the proximity of place of birth to railway stations on lines leading out of the South (e.g., the Illinois Central Railroad leading out of Mississippi).

For example, we show that among blacks in born in Mississippi in the years 1905-1925 in towns along the Illinois Central Railway, nearly 80% had migrated out of Mississippi and were still alive at old age (65+ years of age). We show also that the corresponding figure is substantially lower, approximately 65%, for those not born on the rail line. We argue that the fact that we can distinguish between those born on the railway lines and far from the lines, gives us a chance to further speculate on the effect of selective migration on old-age mortality, with it effect being stronger for those not born on the rail line.

2 Method and Data

The major source of data for the study is *the Duke Social Security/Medicare Dataset*. It consists of the Master Beneficiary Records from the Supplementary Medical Insurance program (Medicare Part B) merged by Social Security Number to records from the Numerical Identification Files (NUMIDENT) of the Social Security Administration. The data are complete for the period 1976-2001. There are over 70million records in the dataset for Medicare recipients, covering 95% of the population aged 65 years and older. Because enrollment requires proof of age, the age validity of the records is high compared with other data sources for the U.S. elderly population.

In addition to race, sex and age, information includes zip code of the place of residence, exact date of death, and detailed place of birth information. Specifically, the data include either town and State of birth or town, county and State of birth for all U.S.-born respondents. To our knowledge, this is the only data source that provides detailed place

of birth and detailed place of residence in a very large sample. It is therefore an ideal data set to study mortality among blacks and whites, migrants and non-migrants. A further advantage of this dataset is that death and population counts are based on the same data source.

The information on distance from the railroad comes from the *Official Guide of the Railways*. The 1936 Official Guide is a publication of the National Railway Association and contains train schedules for every train line in the U.S. in 1936. The index lists every train station as well as the railroad companies serving that station. For our research, the index to the Official Guide is of utmost importance. The index lists each station and whether the station has passenger services or is for freight service only.

3 Preliminary Results

As an initial investigation, we calculated from the 1990 Detailed Mortality File and the 1990 Population Census cross-sectional age specific mortality rates for black men born in Mississippi and Alabama between 1910 and 1940 and aged 50-80 in 1990. We divided these men into black men who were born and remained in Alabama and Mississippi and black men who migrated to Illinois (See Figure 1). We find, surprisingly, that those rates are very close for the two groups (and are in fact statistically indistinguishable). One possible explanation is that early childhood exposure to deprivation could not be overcome by migrating to the North, at least in terms of mortality rates. A second explanation is that moving to the North harmed blacks, but comparatively healthier blacks migrated North.

If our strategy to account for the selective migration in mortality at old ages, the historians' observations about the importance of railroads to immigration must be empirically correct: being located near transportation lines must be a statistically meaningful determinant of out-migration from the South. To investigate this issue, we conducted some highly preliminary analysis for the State of Mississippi, using the Illinois Central line as our example. This rail line is an important well-known case of a North-South line, as it ran from New Orleans through Mississippi and then north to Chicago. Figure 2 shows the line's path through Mississippi. We conduct this preliminary

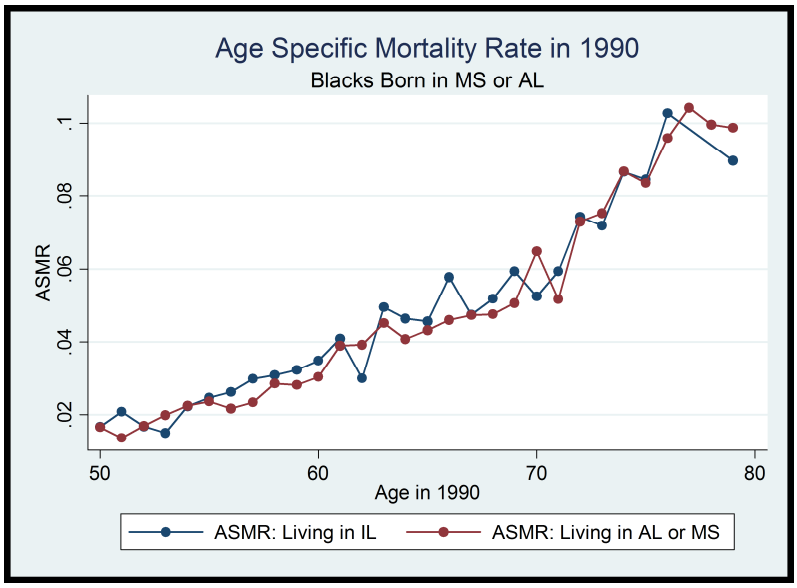
investigation using approximately one third of the place names for Mississippi. Specifically, using the 128,575 blacks born in Mississippi we recorded whether each of these towns had a train stop on the Illinois Central line. We also recorded for each place of birth (a) the fraction of persons living in Mississippi, (b) the fraction living outside Mississippi but within the South (defined here as the 11 former Confederate States), and (c) the fraction living outside the South (defined the same way) at the time the person was first observed in the Medicare Part B data between 1976-2001. We loosely refer to migration out of the 11 Confederate States region as migration to the North. Table 1 reports the results from this preliminary analysis. Perhaps the most astonishing fact is this: among blacks born in towns that had an Illinois Central (IC) train stop, only 22.0% remained in Mississippi at old age. The rest migrated to the North or elsewhere in the South. The percentage of blacks who remained in Mississippi among those born in towns not on the IC line was 34.7%, a proportion that is 50% higher than for blacks born on the IC. Statistics in Table 1 also show that living on the IC line did not just increase migration generally, but disproportionately increased migration to the North specifically. This can be inferred by observing that migration out of Mississippi to other areas of the South was quite similar for persons born on vs. off the train line (18.4% vs. 16.3%).

In our preliminary exploration we have 1182 distinct 'Places of Birth' in our data and, as noted, for each place we have recorded the fraction of natives who (a) lived in Mississippi at old age, (b) lived elsewhere in the South, and (c) moved North. We treat these variables as dependent variables in a series of linear probability regressions, in Table 1; these give the 'difference estimator' of the impact on migration of being born in a town along the train line. Column (1) shows that being born along the train line greatly reduces the probability living in Mississippi as an older adult. Column (4) shows that this migration is largely out of the South, and column (7) confirms that living along the train line has little impact on the probability of migration out of Mississippi to other locations in the South. Specifically, being born in a town with an IC stop reduces the probability or remaining in Mississippi by 12.7%, by increasing the probability of migrating out of the South by 10.6% and increasing migration to other parts of the South by 2.1%. Given t-tests, we cannot reject the hypothesis that being born in an IC-stop town had no impact on migration within the South, but we strongly reject the hypothesis that it had no effect

on migration to the North. Columns (2), (5) and (8) present estimated impacts on location in old age controlling for the fraction of the place of birth's population that was black. Blacks are overrepresented is some parts of the state, and this control is meant to mitigate any correlation between migration from certain parts of the State (e.g. the Delta region) where blacks are overrepresented. While this reduces slightly the effect of being born on a railroad line on migration North, the effect is still strong and significant. Finally, columns (3), (6) and (9) add a measure of the total size of the population born in each place. We include this to mitigate any omitted variable bias arising because larger towns are more likely to have a train stop, given the possibility that migration was affected by the size of the area in which a person was born. Again, a very strong impact remains after controlling for size of place of birth.

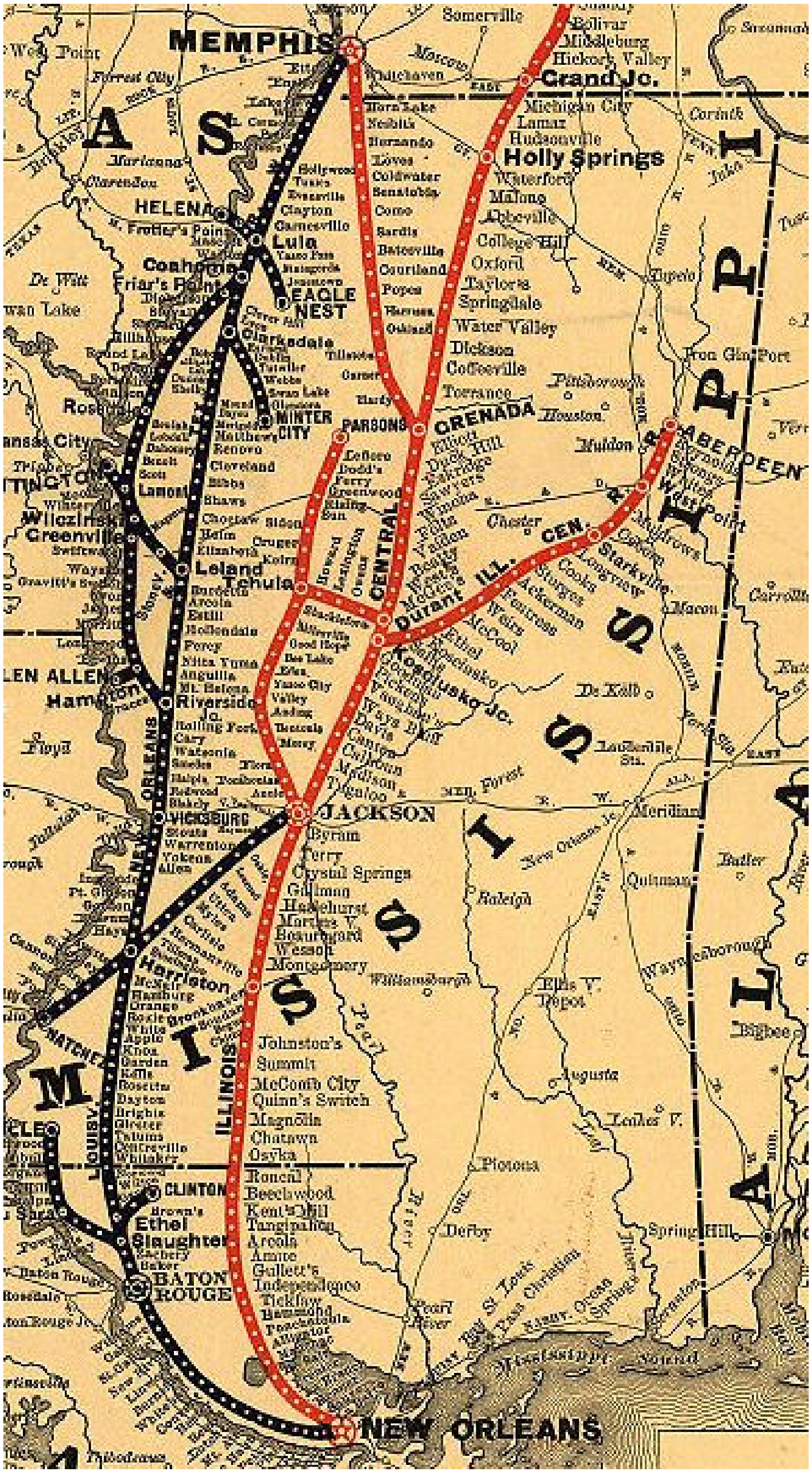
A potential threat to our identification strategy is that towns in Mississippi that are on the IC line differ in systematic ways from towns that are not on the IC, and that these differences affect late-life mortality. For example, railway access might have brought relative prosperity to IC-stop towns, and this prosperity might then be influencing both migration decisions and childhood health outcomes that in turn affect the late-life mortality outcomes that we will be studying. We will be able to evaluate this issue carefully once we develop our data. To get some idea of the issue at hand, though, we undertook analysis from the 1910 Census, calculating literacy rates for men aged women aged 20-40, comparing those who live in towns that have IC train stops and those that did not. We found that literacy was indeed somewhat higher in IC-stop towns, 73.1% vs. 68.7% (a statistically significant difference). On the other hand, towns on the IC line are on average larger than towns that are off the line. If we simply do inverse propensity score weighting where the probability of being on the IC line is a function of population size, the estimated difference in literacy nearly disappears and we find no statistically significant difference in literacy.

Figure 1. Age Specific Death Rates by Age in 1990, Blacks Born in Alabama and Mississippi



Source: Authors' calculations from detail mortality files (DMF) of the Vital Statistics Registry of the U.S., and the 1990 PUMS. Age specific mortality rates were calculated as the number of deaths during 1990 divided by the number of men surviving until 1990 for each age. The numerator was constructed by counting the number of deaths of men born in Alabama and Mississippi in 1990 at each age 50 to 80 using the DMF's mid-year population; our population estimate is as of the Census, April 1, 1990 rather than a mid-year estimate. We plot ASMRs where the estimated population of men exceeds 600. ASMRs are for men born in Alabama and Mississippi who remained in those States and for those born in Alabama and Mississippi who migrated to Illinois.

Figure 2. Illinois Central Railroad Stops, June 30, 1892



Source: Rand McNally & Co., Engravers, Chicago.
Library of Congress Call Number G4041.P3
1892 .R3 RR431

Table 1. Linear Probability Regressions: Impact of Birth Location on Location at Old Age for Blacks Born in Mississippi, 1905-1925 Birth Cohorts

	Living in Mississippi			Living Outside the South			Living in South, Outside MS		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
On Train Line	-0.127**	-0.110**	-0.111**	0.106**	0.092**	0.084**	0.021	0.018	0.026
	(6.05)	(4.71)	(4.36)	(4.08)	(3.37)	(3.20)	(1.15)	(0.89)	(1.29)
Fraction Black		-0.159**	-0.159**		0.129**	0.140**		0.031	0.019
		(2.94)	(2.75)		(2.74)*	(2.84)		(0.74)	(0.44)
Log Population			0.001			0.013			-0.013**
			(0.11)			(1.75)			(3.09)
Constant	0.347**	0.441**	0.436**	0.490**	0.414**	0.324**	0.163**	0.145**	0.240**
	(25.57)	(16.41)	(6.90)	(38.51)	(16.43)	(5.60)	(16.31)	(7.68)	(5.65)
Observations	1182	1182	1182	1182	1182	1182	1182	1182	1182
R^2	0.15	0.19	0.19	0.10	0.13	0.14	0.01	0.01	0.03

Notes: Authors' calculations using the Duke Social Security/Medicare Dataset. Robust t statistics in parentheses (*sig. at 0.05, **sig. at 0.01). "On Train Line" equals to 1 if the Place of Birth is a train stop on the IC (according to the 1892 map in Figure 2), 0 otherwise. "Fraction Black" and "Log Population of Place of Birth" are calculated as, respectively, the number of blacks and the log of the number of people in each Place of Birth in the Dataset.