

Black Americans' Landholdings and Economic Mobility after Emancipation:
Evidence from the Census of Agriculture and Linked Records

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Abstract: Large and persistent racial disparities in land-based wealth were an important legacy of slavery and Reconstruction. We combine records from the censuses of agriculture and population to observe farmers' landholdings (acreage and value) in 1880, revealing large racial disparities. To assess how these disparities were transmitted intergenerationally, we link sons from both farmer-headed and other households to the 1900 census records. We find that Black landowners transmitted substantial advantages to their sons, particularly in literacy and homeownership, even in estimates based on within-locality variation. But overall, such advantages were small relative to the racial gaps in economic status.

America's renewed reckoning over racial inequality has brought fresh attention to the economic history literature on persistent gaps in wealth and income.¹ In accounts concerning the origins and evolution of racial disparities, scholars have long seen the post-Civil War era of Reconstruction (1865-77) as a critical juncture (Du Bois 1935, Myrdal 1944, Higgs 1977, Ransom and Sutch 1977, Jaynes 1986, Foner 1988). In particular, the nation's failure to provide the formerly enslaved population with the resources and protections required to participate fully in economic and political life hindered Black Americans' income, wealth, and human capital accumulation and perpetuated disparities in economic well-being that are still present today.

Explanations of the ways in which Reconstruction-era policy choices undermined the economic status of Black Americans and their descendants often focus on the distribution of land ownership.² The Civil War and Reconstruction ended without implementing a plan to distribute land or compensation to those formerly enslaved. Consequently, even by 1880, relatively few Black households owned real property. Collins and Margo (2011, Appendix Table 2) estimate that approximately 14 percent of Black households owned homes in 1880, compared to 55 percent of White households. At this time, 85 percent of Black Americans lived in rural areas. Land ownership offered an escape from farm tenancy, sharecropping, and wage labor, affording Black households more control of their daily lives and the fruits of their production. Accordingly, they made land their paramount economic concern. Eric Foner explains that, "The desire to escape from white supervision and establish a modicum of economic independence profoundly shaped blacks' economic choices during Reconstruction... *Above all, it inspired the quest for land of their own*" (1988, p. 104, emphasis added).

This paper provides new evidence on the distributions of Black and White landholdings at the end of Reconstruction and on the subsequent intergenerational transmission of economic status. We build a novel dataset of fathers and sons with national coverage, including thousands of hand-linked and transcribed records that bridge the census of agriculture and census of population manuscripts in 1880. Such record linkage is essential for characterizing the relationship between landholding in one generation and economic status in the next because the 1880 census of *population* contains information on occupations but no information on property ownership, let alone farm characteristics,

¹ For instance, see the *Economist* article "Economic Research Documents Black Americans' Struggle for Equality" (June 10, 2020).

² Other areas of focus include violence, the rollback of civil rights, restricted access to credit, and provision of education (Du Bois 1935, Ransom and Sutch 1977, Foner 1988, Margo 1990, Logan 2020).

whereas the census of *agriculture* manuscripts, which provide the most consistent micro-level and national-in-scope data on farms, contain no information on the farmer's race or children.³ The detailed view of differences in status *within* the occupation of "farmer" is a key contribution of this dataset. To capture the intergenerational transmission of economic status, we link children from all households in 1880, including those of non-farmers, to their records in the 1900 census of population manuscripts where we can observe their occupation, literacy, homeownership status, and more.

We first show that the farm ownership rate and the distributions of farm acreage and value differed starkly for Black and White households in 1880. It is immediately clear that allocating 40 acres of farmland to Black households—as proposed during and after the Civil War but not implemented (Cox 1958, Oubre 1978, Foner 1988)—would have greatly increased Black Americans' landholdings and wealth relative to what they had actually attained by 1880. Although some Black households owned farmland in 1880 (approximately 12 percent in our sample), most men worked as sharecroppers or wage laborers.

We then investigate the connection between fathers' land ownership and farm size in 1880 and sons' outcomes in 1900, showing that the returns in terms of sons' homeownership and literacy were substantial. For instance, conditional on age, sons of landowning Black farmers achieved a homeownership rate that was 7 percentage points higher than for sons of Black laborers, whereas sons of farmers who did not own land saw no such advantage. Sons of landowning farmers were also 11 percentage points more likely to be literate in 1900 than the sons of laborers, and 13 percentage points more likely to be literate than the sons of farmers who rented. We also show that sons of farmers in the upper quintiles of owned acreage or farm value fared better in terms of literacy and homeownership than sons of landless farmers and, often, better than those in the lower quintiles of owned acreage or value. These are fundamental insights about the first generations of Black households in the post-Civil War period, which are available only in datasets that link information drawn from both the agricultural and population censuses.

It is important to be clear that our measures of sons' outcomes conditional on fathers' landholdings or occupations cannot be given a simple causal interpretation, nor is that what we aim

³ The published volumes of the 1880 census of agriculture do not report statistics by race. The volumes of the 1900 census of agriculture do report summary tables by race, but the original micro-level data have been destroyed. The 1870 census has information on the value of real property. We focus on 1880 because scholars have expressed concerns with the quality of the 1870 census (for debate see Ransom and Sutch 1977, p. 284; Reid 1995; Hacker 2013) and because 1880 provides a relatively high-quality benchmark at the end of Reconstruction.

to provide.⁴ The connections between the economic status of one generation and that of the next are manifold, and the intergenerational mobility literature recognizes that statistical associations may reflect investments in human capital, social connections, local resources and environments, and more (*inter alia*, Loury 1977, Becker and Tomes 1986, Solon 1999, Margo 2016). In the context we study, all of the above were affected in complex ways by the history of slavery and ongoing discrimination and violence against Black Americans. Although we do not identify specific causal mechanisms, our contribution is to show whether and how strongly differences in economic status among Black households, especially with respect to farm ownership and fathers' occupations, were transmitted to the next generation in the wake of Reconstruction.

We find that Black families with more economic resources transmitted substantial advantages to their children in the form of both property ownership and human capital accumulation. Moreover, we show that local fixed effects do not greatly weaken these relationships. Therefore, we conclude that the advantages were likely due primarily to “within family” mechanisms rather than differences across localities in Black Americans' opportunities.

Despite these advantages, the limits of landownership as a springboard for the next generation's prosperity are also clearly evident. Even for Black sons of landowning farmers, average rates of literacy and homeownership in 1900 were far lower than for White sons. In fact, sons from the top quintiles of Black farm-owning families (by value or acres) had much lower literacy rates and slightly lower homeownership rates than sons of White farmers who did not own farmland. Moreover, in terms of the sons' occupational status in 1900, we find that the advantages associated with Black fathers' land ownership were small compared to the magnitude of the Black-White gap. We interpret this as a reflection of the era's severe limits on Black workers' educational and labor market opportunities.

Our work contributes to several strands of the literature on American economic development, especially regarding the economic status of Black Americans since emancipation. First, our work complements that of Miller (2020), which compares freedmen's outcomes in the Cherokee Nation (in Northeast Oklahoma), where they were granted land after the war, to outcomes elsewhere in the South. Miller (2020) finds that Black farm acreage, ownership, livestock value, and crop production were higher in the Cherokee Nation than elsewhere in the South, and some of these advantages were

⁴ If selection into farm ownership was positive, then the observed associations between fathers' and sons' outcomes may be an upwardly biased measure of the effect.

likely transmitted to the next generation (e.g., higher school attendance rates). While similar in motivation, this paper provides a different and geographically broader empirical perspective on the experiences of freedmen and their children in comparison with the White population.⁵

Second, the paper complements a long-standing literature on wealth inequality in the post-Reconstruction period. Much of this research is based on geographically aggregated tax data and, therefore, does not observe intra-household transmission dynamics (Du Bois 1901, Higgs 1982, Margo 1984, Spriggs 1984, Derenoncourt et al. 2022). The paper also contributes to the closely related literature on the long-run persistence of racial inequality (Myrdal 1944, Higgs 1977, Ransom and Sutch 1977, DeCanio 1979, Oliver and Shapiro 1995, Margo 2016). Farming and land ownership (or lack thereof) are prominent themes in this research, especially for the nineteenth and early twentieth centuries. In this regard, our data collection efforts—specifically the links made between the census of agriculture and the census of population manuscripts—are akin to those undertaken by Parker and Gallman (1992), Bateman and Foust (1992), and especially Ransom and Sutch (2007).⁶ Our sample construction differs from theirs in important ways, most notably in the provision of forward linkages to 1900 for intergenerational outcomes. But the extensive research based on these datasets, like our paper, highlights the value of the agricultural census for understanding American economic development and inequality.

Finally, the paper contributes to the broad literature on intergenerational mobility in American history (*inter alia* Aaronson and Mazumder 2008, Long and Ferrie 2013, Olivetti and Paserman 2015, Bleakley and Ferrie 2016, Ager et al. 2019, Tan 2023), including work that specifically addresses racial differences (Hertz 2005, Mazumder 2014, Collins and Wanamaker 2022, Derenoncourt 2022, Jácome, et al. 2022, Ward 2023). It deepens these literatures by providing new insights about the economic outcomes of formerly enslaved men and women and their children, with unprecedented detail on variation in economic status *within* the large population of farmer-headed

⁵ Specifically, we construct a dataset with national coverage for perspective on overall Black-White gaps, we examine a wide range of intergenerational outcomes, we compare sons of farmers of all tenure statuses and sons of men in other occupational categories, and we provide insight on whether status transmission was centered within households as opposed to variation in local characteristics. We also illustrate how small the realized intergenerational benefits of Black farm ownership were relative to the size of racial disparities.

⁶ The Parker-Gallman sample is comprised of information from the manuscripts of the 1860 census, covering the cotton-producing South. The Ransom-Sutch sample is comprised of information from the manuscripts of the 1880 census, again with a focus on the South. The Bateman-Foust sample is drawn from the 1860 census manuscripts for the North. Our sample is different in that it started with an intergenerational link from 1880 to 1900 using census of population manuscripts, and then we searched for fathers who were farmers in the 1880 census of agriculture manuscripts. Our sample also has national coverage. Details are provided below.

households. It also expands beyond the literature’s traditional emphasis on occupational status transmission to bring other important variables into view, such as literacy and property ownership.

CONTEXT, DATA, AND ANALYTICAL FRAMEWORK

Historical Context

After the Civil War, formerly enslaved men and women sought land ownership as a bulwark to protect their autonomy, whereas southern planters sought to re-establish their control of Black labor and resume large-scale production of staple crops. Foner points out that southern Whites were influenced by the earlier experiences of Haiti and the British Caribbean: “Planters quickly concluded that their ability to control black labor rested upon maintaining their own privileged access to the productive land of the plantation belt” (1988, pp. 134). Approximately 90 percent of the Black population resided in the South, where the economy was predominantly rural and agricultural: 77 percent of southern men worked in agriculture in 1870, and 68 percent did 30 years later.⁷ The importance of land in such a setting—acquiring it, holding it, expanding production upon it—was clear. Reviewing the first decades after Emancipation, Du Bois emphasized, “Perhaps there could be found no other single index of the results of the struggle of the freedman upward so significant as the ownership of land” (1901, p. 648).

In March 1865, Congress created the Freedmen’s Bureau and authorized it to divide abandoned and confiscated Confederate lands into 40-acre plots for rent and eventual sale to those formerly enslaved. No sooner had the Freedmen’s Bureau begun its work than President Andrew Johnson started to unwind its efforts. Johnson issued thousands of presidential pardons to wealthy Confederate supporters, thus restoring their sizable landholdings and dispossessing Black farmers. Foner concludes, “Johnson had in effect abrogated the Confiscation Act and unilaterally amended the law creating the Bureau. The idea of a Freedmen’s Bureau actively promoting Black landownership had come to an abrupt end” (1988, p. 161).

The following year, Congress passed the Southern Homestead Act, which opened public lands in the South to settlement. The formerly enslaved population, and other residents who had remained loyal to the Union, were given preferential access until 1867. This initiative did not greatly increase Black landownership for multiple reasons: the land available from public holdings was of low quality

⁷ Tabulated with 1-percent samples from IPUMS (Ruggles et al. 2015), based on the *ind1950* variable, excluding those without valid industry codes.

for farming; most Black men had already agreed to labor contracts that required them to work until the end of 1866; land offices were poorly staffed and operated; and most Black households had little or no capital to support themselves while starting a farm (Oubre 1978, pp. 183-188). Once they were recognized as citizens under the Fourteenth Amendment, homesteading elsewhere in the US under the 1862 Homestead Act was possible, but relatively few Black households pursued opportunities far from the South (Edwards et al. 2019).⁸

Without land of their own, the overwhelming majority of Black Americans began the post-emancipation period with no resources other than their ability to labor.⁹ White households, on the other hand, continued to control the most productive agricultural land, and those in the South continued to benefit from employing a large pool of landless Black workers. In the 1870 census of population, the last census to record real estate asset values, approximately 71 percent of all southern Black men between the ages of 18 and 60 were laborers (agricultural or otherwise). Although 17 percent were recorded as “farmers,” approximately 90 percent of these farmers apparently did not own land (real estate assets are recorded as zero), and most likely worked as sharecroppers.

From this starting point, the formerly enslaved population worked toward acquiring land, typically by ascending the “agricultural ladder” from laborer to cropper, tenant, and finally owner. To advance these efforts, Logan (2020) documents a push by Black politicians elected during Reconstruction to raise property taxes, a policy favored by Black constituents to pressure White landowners to sell off unimproved land. The Black population’s gains in property ownership between 1870 and 1900, as documented by Du Bois (1901), Higgs (1982) and Margo (1984), are remarkable when viewed against the backdrop of discrimination and violence that characterized the era. At the national level, Collins and Margo (2011) show that Black homeownership and farm ownership rates increased from 1870 to 1900 even as the White homeownership rate declined due to ongoing urbanization.

Opportunities for economic advancement outside the agricultural sector were limited for Black workers in the decades after Reconstruction. A nascent southern manufacturing sector often excluded Black workers (Greene and Woodson 1930; Myrdal 1944, Wright 1986), as did northern manufacturers as long as White workers, including immigrants, were readily available. Possibilities

⁸ Edwards et al. (2019) estimate that approximately 3,400 black families homesteaded in the Great Plains (including Oklahoma), acquiring approximately 650,000 acres. Their search of records focuses mostly on the early twentieth century when homesteading in the Plains was at its peak.

⁹ The postwar censuses never inquired about formerly enslaved status, but the enslaved comprised about 96 percent of the southern Black population in 1860 (Ransom 2006).

for advancing upward in any industry, for instance into supervisory positions, were also limited for Black workers (Johnson 1943; Sundstrom 1994; Mohammed and Mohnen 2021). Moreover, Black men lost ground in some lines of skilled crafts work in the late nineteenth century (Myrdal 1944, ch. 13). Although some acquired literacy, few of the formerly enslaved had the opportunity to attain much formal education (Williams 2006), and their children attended racially segregated and poorly funded schools (Margo 1990). Professional positions were generally limited to those serving black clientele (e.g., teachers and clergy).

Post-Civil War disparities in landholding are salient in the overarching economic history of Black-White disparities in income and wealth. Our paper’s goal is to explore these disparities in more depth than previously possible, with an eye toward intergenerational transmission and, thus, the perpetuation of racial inequality. Although the Black population was geographically concentrated in the South in this period, our dataset and presentation of results emphasize a national perspective. This provides a clearer view of overall Black-White disparities in the late nineteenth century, a view that includes the vast majority of the White population, which lived outside the South and accumulated land and wealth there. It is also in keeping with much of the literature on intergenerational mobility which takes a national perspective. We will also provide some “within-South” perspectives. The South was a relatively poor and isolated region in this period (Wright 1986), and the within-South comparisons highlight disparities in landholdings and mobility even among families from the same region.

Dataset Construction

We began with a full count dataset of the 1880 census of population (Minnesota Population Center 2017).¹⁰ We then linked all sons aged 0 to 17 who were living with their father or step-father in 1880 to their records in the 1900 census of population, made available by Ancestry.com through IPUMS (Ruggles et al. 2015). We followed recommendations from Bailey et al. (2020) by using the intersection of two samples that we linked using different methods.¹¹ Based on their ages and places of birth, the vast majority of the sample’s Black sons were born free to previously enslaved parents—this is essentially the first generation of post-emancipation young Black men. Some of the data

¹⁰ Unfortunately, there is no 1:1 crosswalk between the original NAPP 1880 files we used for our analysis and the 1880 100% count sample currently available through IPUMS. Recreating our results using the provided replication files requires obtaining a vintage copy of the NAPP sample.

¹¹ See the Data Appendix for details. One sample is based on an Abramitzky et al. (2014) methodology and another is based on Ferrie (1996). We matched 9.5 percent of White sons and 3.4 percent of Black sons.

described here are derived from Collins and Wanamaker (2022), but with additional transcription from the agricultural census manuscripts and much more analysis of farm-level data in 1880 to glean insights into this critical period. In 1880, we can observe parents' occupation, race, age, and location; we cannot observe homeownership or literacy in this sample.¹² In 1900, we can observe sons' occupation, location, homeownership, and literacy status; we cannot observe the value of homes or farms.¹³

To sharpen our characterization of parents' socioeconomic status, we linked a random sample of farmer fathers, drawn from the 1880-to-1900 linked sample of census of population records described above, to the 1880 census of agriculture records. We oversampled Black farmers. This linkage to the census of agriculture allows us to discern the farmer's tenure status and provides information on farm acreage (improved and unimproved), farm value, livestock value, and other characteristics. We can then distinguish between farm owners, renters for "fixed money" (cash), and renters for "shares of production," and we can segment farmers by the value and size of their farm ownership. The links to the 1880 agricultural census must be done manually. Undergraduate researchers established the links based on name and detailed locations, using digitized and searchable manuscripts available on the Ancestry.com website.¹⁴ The final working sample includes 4,976 matched White farmer fathers and 3,276 matched Black farmer fathers, plus 299,847 Black and White non-farmer fathers. All analysis samples are weighted to be representative of fathers in 1880.¹⁵ Fathers who reported being a farmer in the 1880 population census but who were not found in the agriculture census are not included in the analyses.¹⁶

¹² Homeownership was not recorded in 1880, and literacy was not transcribed in the NAPP dataset. The post-bellum censuses did not ascertain which individuals had formerly been enslaved.

¹³ We drop all matches where the son is not a household head in 1900. We make no restrictions on whether the father was a household head in 1880. Farming fathers who were not household heads are unlikely to appear in the census of agriculture as the farm operator and, therefore, are frequently dropped.

¹⁴ Roughly half of all farmers lived in states with searchable records on Ancestry.com: Alabama, California, Connecticut, Georgia, Illinois, Iowa, Kansas, Maine, Massachusetts, Michigan, Nebraska, New York, Ohio, South Carolina, Tennessee, Texas, Virginia, and Washington. In aggregate, states with searchable records are not remarkably different from national averages in terms of farmers' tenure distribution.

¹⁵ We reweight to match the distribution of fathers of co-resident sons aged 0 to 17 in 1880 using inverse probability weights based on a probit for being in the matched sample. Observables include region, urban dummy, city population, and father's age. For farmers' sons, the final analysis weights are the product of these probability weights multiplied by the number of farmers in the full linked sample divided by the number of farmers successfully matched to the agricultural census, separately by race.

¹⁶ There are several reasons one might not find a farmer. Names might be transcribed differently; the farmer might not have been the sole operator (the agricultural census lists only one); enumerators might not have

Measures of Sons' Outcomes in 1900

Homeownership: Homeownership in 1900 is a binary indicator for whether the son is a household head *and* living in owner-occupied housing. For those who were farmers in 1900, it is likely that a homeowner also owned at least some farmland. For both farmers and non-farmers, homeownership may reflect labor market success, the accumulation of savings, and perhaps inheritance or *inter vivos* transfers. This variable must be interpreted with some care because homeownership was higher in rural than urban areas, but urban migration sometimes led to higher paying jobs. Sons who are not household heads in 1900 are omitted from the analysis.¹⁷

Human Capital: We use literacy as a proxy for human capital accumulation. The census did not record highest grade of attainment before 1940, leaving us with a basic but still informative measure of educational attainment. Approximately 58 percent of the Black population, age 20 to 40, could read and write in 1900.

Occupation: In the absence of individual income measures in the 1900 census, we rely on occupations to characterize labor market outcomes. An indicator for *laborer status* is a measure of whether the son worked on the lowest rung of the occupational distribution. We group farm and non-farm laborers together in this category because both groups had low compensation and because it was not uncommon for laborers to move between sectors. For some analyses, we also include indicators for “blue collar” and “white collar” status, where “blue collar” refers to semi-skilled or skilled craft workers.

Income Rank: A supplementary measure of labor market outcomes is the son’s occupational income rank. This is based on a methodology described in full in Collins and Wanamaker (2022), which takes account of detailed occupations, race, and region.¹⁸ For farming sons, our income assignments differentiate based on homeownership status in 1900. Based on these scores, we then

completed a schedule for the farm or it might not have been preserved; or we might have missed a farmer who is in the manuscripts somewhere. When we link farming fathers to the census of agriculture, those who are not found are assumed to be missing at random.

¹⁷ The homeownership variable pertains to all occupants of a residential unit. In households headed by adult sons and coded as owner-occupied, we assume it is the son’s property; in households where sons are not the head, it is not clear how to interpret the ownership variable.

¹⁸ We rely on mean values of race/region/occupation-specific income data from the 1940 census, with adjustments for in-kind income for farm workers and imputations for self-employed workers. See Collins and Wanamaker (2022) and the Data Appendix.

rank the sons in the national distribution of scores (i.e., we rank all linked sons against the complete count sample for 1900). Although these ranks go a step beyond “laborer status” in characterizing labor market outcomes, they do require strong assumptions, and a clear shortcoming is that they cannot register individual-level income variation *within* occupation/race/region cells.

Analytical Framework

We use the new dataset to answer fundamental questions about whether and how Black households’ economic status in 1880 was transmitted to their sons’ outcomes in 1900. *We begin with a sample of farmers’ sons.* We use detailed information on farm size, farm value, and livestock value to categorize farming fathers into one of six groups. When we use farm acreage, a “zero acreage” farmer is one who rents for cash or rents for shares of production, and the five remaining categories reflect quintiles of the acreage distribution among farm owners (separately by race). When we use farm value to categorize farmers, we assume those who “rent for cash” own the value of their livestock but not the land, and that those who “rent for shares” do not own the farm’s livestock or land.¹⁹ Our assumption, given our focus on Black men, is that most farmers who did not own their farm and did not rent for cash were sharecroppers or approximately as well off as sharecroppers. This distinction is coarse, but it reflects a real difference in their average economic status. The farm value variable may capture differences in economics status and resources that are missed by the acreage count. A “zero value” farmer in this cut of the data is one who rents for share or rents for cash on a farm with no livestock; the five remaining categories reflect quintiles of the farm value distribution, including the value of livestock.

We then widen the scope of comparison by *including sons of non-farming fathers.* In this framework, the fathers’ categories correspond to broad occupational groups. We still differentiate between sons of farm owners and renters, and then the other fathers’ categories include unskilled laborers, white-collar occupations, and blue-collar occupations.

We age-adjust the data to avoid differences in average outcomes that are due solely to differences across groups in the ages at which we observe the household head’s status in 1880. Following Alsan

¹⁹ Alston and Kauffman explain, “Although a cropper farmed a certain plot of land ... he differed from other tenants in important respects, especially when he worked on a plantation. ... he generally supplied no input besides labor services ... He resembled a wage laborer more than a true tenant ...” (1998, 264-65). The 1880 data do not allow a clear distinction between *share tenants* and *sharecroppers*.

and Wanamaker (2018), we separately standardize the sample of *farming fathers* and *all fathers* by reweighting the observations within each status category to mimic the age distribution of all fathers in the universe in question.²⁰ So, for example, if fathers who rent for shares are younger than fathers in the top quintile of farm acreage, the age adjustment will result in comparisons of sons' outcomes that are pre-adjusted for these differences. Later, we refer to regression analyses that account for age differences and other potential confounders using fixed effects.

Most of the recent research on race and intergenerational mobility focuses on the twentieth century and attempts to estimate intergenerational income elasticities or father-son “rank-rank” correlations. In work based on historical samples, in which individual-level income is not observable, intergenerational persistence estimates usually entail assigning fathers and sons average or median income scores by occupation (Collins and Wanamaker 2022, Jácome et al. 2022, Ward 2023). These score-based correlations are not directly comparable to those derived from late twentieth-century datasets, in which individual-level income is observable. But they are provided in much the same spirit of quantifying nationwide intergenerational persistence with a single parameter.

This paper is novel in that it is centered on the late nineteenth century, and it aims to provide the first intergenerational perspective that incorporates detailed information about farms. We emphasize a non-parametric view that is centered on categories defined by fathers' landholdings (for children of farmers) or a combination of categories based on fathers' farm tenure and a broad set of non-farm occupations (for all children). We do not estimate linear correlations of father-son occupational status, which requires strong assumptions in the assignment of scores and the functional form of status transmission. Therefore, there is not a single elasticity of income persistence that connects this paper's results to those in the modern literature or in recent occupation score-based analyses.²¹ Instead, we summarize sons' outcomes within categories of fathers' status, and we examine a broader set of outcomes, ranging beyond occupational status (e.g., literacy, homeownership, and more).

In sum, our approach complements the existing intergenerational literature by focusing on the

²⁰ We divided the sample into four bins of fathers' age (18 to 24, 25 to 29, 30 to 34, 35 and older) and then reweighted each status category to match the distribution among the full universe in question (farming fathers or all fathers).

²¹ Collins and Wanamaker (2022) goes some distance down this road with multiple cohorts stretching from the late nineteenth to the late twentieth century. It assigns both fathers and sons income ranks. Then, it estimates linear rank-rank regressions, allowing different intercepts and slopes for Black and White households. We discuss some similarities in results and interpretations later in the paper.

decades immediately after Reconstruction, getting inside the heterogeneous category of farmers, , analyzing a range of relevant outcomes beyond occupation scores. Where they overlap, our results are broadly consistent with those from other studies, which we discuss after presenting our main results. But our aim in this paper is to extend intergenerational analyses into areas that have been relatively unexplored.

Caveats

Our data have limitations. First, our characterization of farm ownership in 1880 is based on information from the census of agriculture manuscripts. We do not observe households' non-agricultural property ownership, though we do observe the sons' homeownership status in 1900 regardless of their farm or non-farm residence. Given the concentration of Black households in rural areas and the long-standing focus on agricultural land distribution policies, we believe our dataset speaks to a crucially important issue in the history of American racial disparities. Yet we want to highlight that non-agricultural property also merits attention in future research, especially as urbanization increased in the twentieth century.²² In addition, it is important to note that if a farm was rented, the census recorded the operator's name, but not the owner's name. Given that White households disproportionately owned the stock of rented land, tallies of owned-*and*-operated farm acreage and value will understate the Black-White gap in total farmland owned.

Second, as in all linked datasets, we must address selection into linkage relative to the base population of fathers with co-resident sons. As mentioned above, we accomplish this through reweighting, as recommended in Bailey et al. (2020). But differences in unobservables, such as sons' educational attainment, health, or other aspects of human capital, may also influence linkage probabilities and positively bias the sample. There may also be positive bias in our ability to link farmers to their farms in the 1880 agricultural census manuscripts.²³

Third, it is important to keep in mind that the linked sample consists of sons who resided in households headed by their fathers (or step fathers) in 1880, which makes the characterization of

²² In 1870, 13 percent of urban Black male household heads reported owning property, compared to 6 percent of rural households (based on the 1870 1-percent IPUMS sample). But 87 percent of Black male household heads were in rural areas.

²³ We cannot re-weight the sample to reflect this potential source of bias because there is no underlying "true" distribution of farm value by race on which to base the weights.

intergenerational mobility more straightforward than otherwise. Although the vast majority of children resided in households headed by their father, it is notable that Black children were more likely than White children to reside in households that were not headed by their father. Moreover, this selection issue might cut in different ways for different groups. For instance, Black children in non-father headed households tended to reside with heads that were more literate than those of other Black children, whereas White children did not.²⁴ Additional research into these aspects of household formation and their implications for children's resources and outcomes would be valuable.

Fourth, it is plausible that staying in one place may be correlated with a higher probability of selection into linked samples (e.g., if recent migrants are more likely to be missed by enumerators). We do not have direct evidence on this, but it is useful to consider the issue because a father's land holdings might lead to stronger local attachments for sons. If so, this may distort the distribution of households across categories of fathers' status and, thus, overall mobility rates. However, we would expect this to have limited implications for sons' average outcomes *within* categories of fathers' status, which is what our analysis of mobility emphasizes. Alternatively, if men with higher skill levels, conditional on fathers' status, are more likely to be matched over time, then it is possible that the linked sample's average outcomes for sons from each category of fathers overstate the true outcomes. If this selection bias is stronger for sons from lower status households, it could differentially tilt the relationships depicted below and lower estimated returns to fathers' status.

Finally, despite our effort to limit false matches by adopting a conservative linkage procedure, remaining mismatches might matter. For instance, an 1880 son who is matched to the wrong adult in 1900 might have his occupation, homeownership, and literacy mistaken. This may flatten the observed relationship between father and son's status. Similarly, Ward (2023) emphasizes that fathers' occupations are sometimes recorded inconsistently. Our emphasis on fathers' broad occupational categories might avoid placing too much weight on detailed occupational codes. But there is scope for error, which again, may flatten the observed relationship between fathers' and sons' outcomes.²⁵

²⁴ This is based on an analysis of those 0 to 17 years old in the 1880 IPUMS 1 percent sample (Ruggles et al. 2023).

²⁵ In principle, one could make multiple census links for the fathers. In our setting, this is difficult because the 1890 manuscripts were destroyed, the 1870 census under-enumerated the Black population, and adding another dimension of linkage (fathers forward or backward) would reduce sample size sharply.

Results

Racial Differences in Landholding

We begin with a tabulation of occupations and landholding data, shown in Table 1. Few Black fathers in our linked sample owned farms in 1880—approximately 12 percent compared to 44 percent of White fathers. This means that only about 25 percent of the sample’s Black *farmers* owned land compared to nearly 80 percent of White farmers. This reflects both the legacy of slavery and the failure of plans for land distribution to those formerly enslaved, yet it is also evidence of the determination of many Black households to ascend the “agricultural ladder” and achieve a measure of economic independence. If not farmers, Black fathers were concentrated in the “laborer” category (43 percent), whereas White men were more concentrated in white-collar and skilled or semi-skilled blue-collar jobs.

It is reasonable to suppose that among farmers, those who owned farms were positively selected in terms of their underlying skill or productivity. We have little direct evidence on this issue in our linked dataset. For some insight, we have undertaken a supplementary analysis of the 1870 census of population data (Ruggles et al. 2021), which reports the value of real estate assets. We restricted the sample to Black farmers who were household heads and had children, and we assumed that positive values of real estate wealth corresponded to farm ownership. In this sample, there is some evidence of positive selection in that Black farmers who owned property had higher literacy rates than those who did not, even when controlling for age and region of residence (by about 12 percentage points). This finding reflects ownership patterns only five years after the end of the Civil War, and we caution that much may have changed between 1870 and 1880.

Further evidence on farm size and value in 1880 is contained in Figure 1. The upper panels focus on each farm’s total *acreage*, including improved and unimproved acreage. Here, we assign farmers who rent land a value of zero acres in the histograms. Only 17 percent of Black farmers owned and operated farms with 40 acres or more, and only 11 percent owned 80 acres or more. Conditional on owning land, the average total acreage for Black farmers was 101 acres (median 66). In contrast, the majority of White farmers in our sample owned land, and 73 percent nationwide (70 percent in the South) operated farms with 40 acres of land or more.²⁶ Approximately 58 percent of White farming

²⁶ The White ownership rate among farmers in our 1880 sample is higher than the 71.7 percent rate for 1890 reported in Holmes and Lord (1896, p. 175, cited in Collins and Margo 2011). This may reflect positive selection into our sample.

fathers owned and operated 80 or more acres of land nationally (56 percent in the South), five times the rate among Black farmers. Conditional on owning land, White farmers operated farms with an average of 180 total acres (median 120).

Summary statistics for farm *values* (expressed in 1880 dollars, as reported in the census manuscripts) reveal similar racial inequalities, as evidenced in the lower panels of Figure 1. The vast majority of Black farmers—89 percent—owned properties valued at \$500 or less, compared to only 27 percent of White farmers. This reflects, in part, the large number of Black farmers who owned no land at all (hence a spike at \$0). At the upper end of the distribution, only 2 percent of Black farm owners operated farms valued above \$2,000, compared to 43 percent of White owners nationally and 19 percent of White owners in the South. Even among the farm owners, the average value of Black farms was low compared to White farms.

Large disparities in farm ownership rates, acreage, and values in 1880 are not a great surprise.²⁷ And yet the histograms show in sharp relief the strikingly wide Black-White gaps in landholding patterns at the end of Reconstruction. In turn, this highlights what was at stake in the debates surrounding land policy at the end of the Civil War and early years of Reconstruction (Cox 1958, Oubre 1978, Foner 1988), when recently emancipated people held out hope for, in Foner’s words, “a modicum of economic independence” and “land of their own.”

Looking forward to the next generation and beyond, it is impossible to know what course the political economy of the South and the fortunes of Black Americans’ might have taken if there had been large-scale land re-allocations after the Civil War (Du Bois 1935, p. 602; Ransom 2005). Such a counterfactual extends far beyond the bounds of what comparisons within our sample can reveal and would require, at a minimum, careful modeling of economic and political spillover effects. But

²⁷ Ransom and Sutch (1977, henceforth RS), built a cross-sectional sample that linked southern farmers from the census of agriculture to the census of population manuscripts for 1880. These data are available at Sutch and Ransom (2007). Our sample construction differs from theirs in important ways. First, we started by linking children over time from 1880 to 1900 in the census of population, and then we searched for farmer fathers in the census of agriculture. Thus, our sample is conditional on having a linked son. Second, our dataset is not confined to the South. Third, within the South, the RS sample was drawn from a set of 73 counties (see RS 1977 Appendix G for discussion). Despite these differences, when we restrict our sample to the South, we get a roughly similar view. For instance, in our sample, 80 percent of White farmers owned land and 25 percent of Black farmers did; in RS’s sample, 73 percent of White and 29 percent of Black farmers owned land. In both our sample and RS’s, approximately 48 percent of Black farmers rented for shares. For Black farm owners, average total acreage is 101 in our sample and 103 in RS; for White owners, average total acreage is 180 in our sample and 239 in RS. Our median Black (White) owned farm is 66 (120) total acres compared to RS’s 55 (148).

it *is* possible to see in our sample how the children of Black farmers fared later in life as a function of their parents' landholding in the economic environment that actually did prevail in the late nineteenth century. In this setting, if selection of fathers into landownership was positive, as suggested above, then evidence of positive status transmission may be considered an upper bound relative to an experiment with good-as-random assignments of land, all else the same.

Sons of Farmers: Intergenerational Results

The panels on the left side of Figure 2 report the outcomes of farmers' sons, observed in 1900. On the *x*-axis, we classify 1880 households into six groups based on total owned acreage or (separately) farm value: those with "zero" and then five quintiles for those with at least some owned acreage or value. Then, we plot the average value of sons' outcomes for each group, with separate lines corresponding to the acreage- or value-based quintiles.²⁸

It is clear that some advantages accrued to Black sons of fathers who owned larger or more valuable farms. They tended to have higher literacy and homeownership rates, and were (for the most part) less likely to be laborers (top three panels).²⁹ These patterns were not monotonic across categories on the *x*-axis, but there are usually clear differences between sons from the top quintiles and those from the lowest ranking category. For instance, Black sons from the top quintile of Black farming families (measured as either value or acreage) had a 75 percent chance of being literate in 1900 and a 15 to 20 percent chance of being homeowners. For comparison, Black sons of farmers with no owned acreage or farm value were about 60 percent literate and only 8 percent owned homes in 1900. In terms of the income score rank variable, the intergenerational returns associated with landholdings were less pronounced (bottom panel).

Despite some advantages for Black sons whose fathers owned larger or more valuable farms, these were small compared to the magnitude of the Black-White gaps. For reference, we have plotted two horizontal lines in each panel showing the average outcome for White sons whose fathers owned no land, both nationwide (dashed line) and within the South only (solid line). For additional

²⁸ We also explored the idea of using the ratio of the farm's reported production value divided by improved acreage as a proxy for father's productivity. We found no meaningful correlation between this variable and sons' 1900 literacy or homeownership, perhaps reflecting the noisiness of the proxy.

²⁹ Such sons were more likely to achieve white-collar status, too, but this was still a rare outcome (see Online Appendix Figure A1).

detail, results for White sons by fathers' quintiles of farm value and acreage are contained in Online Appendix Figures A2 and A3.

It is striking that Black sons from the top quintiles of farming families (by either acreage or value) were far less likely to be literate than White sons from the bottom—by about 20 percentage points—and were substantially more likely to work as a laborer in 1900. Of course, these gaps are even larger when comparing sons of landless Black farmers to those of landless White farmers. Only in terms of homeownership did Black sons from the best-off farming families approach parity with sons of landless White farmers. Overall, on each of the four metrics, Black farmers' sons from every quintile fared worse than sons of White farmers who did not own land. To see this disparity another way, we pooled the Black and White samples and limited the analysis to sons of farmers holding no more than the 99th percentile of Black landholdings in 1880 (320 acres). Linear regressions of sons' outcomes on fathers' landholdings, an indicator for race, and the interaction of race and landholdings confirm large differences in the intercepts for Black and White sons, whereas the slopes are rarely statistically different.³⁰

For reference and robustness, we summarize the baseline results using regressions with additional control variables in Online Appendix Table A1. The regressions include fixed effects for the age of the father (1880) and son, state of residence in 1880, and residence in an urban location in 1880. The results are consistent with those graphed in Figure 2. Although differences between adjacent quintiles are often small, the general pattern of children from households in the top quintiles faring better than those from the bottom is robust, particularly for measures of homeownership, literacy, and laborer status. We report regression estimates for several additional outcomes, including migration, marital status, professional status, and family size, in Online Appendix Table A2.

All Sons: Intergenerational Results

For a wider scope on intergenerational mobility patterns, we can add the sons of *non-farmers* to the sample and then measure differences in sons' outcomes depending on their fathers' occupational group. The fathers' occupation categories correspond to those in Table 1, but for concise

³⁰ In regressions of literacy, the positive slope for Black sons is greater than the slope for White sons, who are highly literate across all categories. In regressions of ownership, laborer status, and occupational rank, the coefficient on the interaction term is statistically insignificant.

presentation, we combine skilled and semi-skilled blue-collar fathers into a single “blue collar” group. The panels on the right side of Figure 2 plot age-adjusted average outcomes for sons from each category of fathers’ occupations; for reference, the dashed line represents the average outcome for sons of White laborers.

Black sons of land-owning farmers were much more likely to own homes than were Black sons of laborers or any other occupational group. This is important in light of the idea that facilitating more access to landownership for the formerly enslaved population might have translated into economic advantages for the next generation. Moreover, Black sons of white-collar workers, blue-collar workers, and farm owners were all much more likely to be literate than sons of laborers, by at least 10 percentage points and by more than 20 percentage points for sons of white-collar workers.³¹ Sons of laborers, share renters, and cash renters had roughly similar, and relatively low, literacy rates. This is consistent with the results for farm families discussed above, where farm owners’ sons were more literate than renters’ sons. It also confirms the sense that children from better off Black families had substantial advantages relative to other Black children in the acquisition of human capital.

Sons of unskilled laborers were substantially more likely to be unskilled laborers themselves than were the sons from all other groups, which were roughly similar to one another in their likelihood of being laborers (around 50 percent). In the bottom right panel of Figure 2, the sons of white-collar and blue-collar Black fathers achieved somewhat higher average occupational ranks than other groups, even though their probability of being a laborer was similar.

The striking size of the Black-White gap in sons’ outcomes is again apparent in the right-side panels of Figure 2. In terms of homeownership, Black sons of land-owning farmers were the only group that fared better than White sons of laborers nationally (dashed horizontal line), and they still fell below the “South only” line for White sons of laborers (solid horizontal line). In terms of literacy, even sons of white-collar Black workers were less literate than sons of White laborers nationally, though they fared better than the sons of southern White laborers. In terms of laborer status and occupational income rank in 1900, Black sons from across the fathers’ occupational

³¹ Literacy differences across groups are reduced but still large when controlling flexibly for sons and fathers ages, urban residence (in 1880), and 1880 state fixed effects (Online Appendix Table A3). In these regressions, a gap of about 3 to 4 percentage points appears in favor of cash and share renters relative to laborers.

distribution fared worse than White sons of laborers, even when limiting the comparison to sons of southern White men.

Figure 3 reports several additional outcomes for Black sons according to their fathers' occupational category. Black sons of white-collar workers were far more likely than others to hold a white-collar occupation in 1900 (top panel), consistent with both their relatively high literacy rate and a tendency for intergenerational persistence in occupations. Black sons of farmers, whether farm owners or renters, had relatively high marriage rates and more children by 1900 (middle panels). Sons of farmers also had relatively low rates of inter-state and inter-regional migration (bottom panels), whereas sons of white- or blue-collar workers had substantially higher rates of migration.

Results in Light of Other Research on Race and Mobility in US History

Our findings regarding sons' literacy and its positive relationship with fathers' landownership or occupational status are broadly consistent with evidence from Miller (2020, table 8). That paper shows that Black children in the Cherokee Nation in Oklahoma—whose parents were entitled to claim land after emancipation—were more likely to attend school than Black children elsewhere. This dimension of outcomes is important because racial gaps in literacy and schooling were enormous in the immediate wake of emancipation. The gap in literacy closed over time, as each new generation of Black students improved upon the previous generation's attainment. Yet this might not have been sufficient to narrow the Black-White gap in “years of education” for late nineteenth-century birth cohorts, due to segregated schooling and differences in school quality and access to higher levels of education (Collins and Margo 2006, Carruthers and Wanamaker 2017). Building on Margo (1990, 2016) and new data resources, we would encourage more micro-level research on this era to better understand the opportunities for (and barriers to) Black families' acquisition and transmission of human capital following emancipation.

The results in this paper are also broadly consistent with those in Collins and Wanamaker (2022). In both this paper and Collins and Wanamaker (2022), White sons fared much better than Black sons conditional on fathers' initial status. In this sense, there was a large and empirically important “mobility gap” between the Black and White populations that propagated large “initial differences” in economic status. Moreover, White sons from low-ranked households fared better on average than Black sons from high-ranked households, underscoring the magnitude of the differences in lifetime

opportunities for Black and White children. After assigning occupational income scores and ranking fathers and sons in 1880 and 1900, Collins and Wanamaker (2022) show that if relatively poor Black children had been able to move up the occupational income distribution to the same extent that poor White children did, the resulting overall Black-White gap in labor outcomes in 1900 would have been far smaller.

This paper's results are also broadly consistent with those reported in Jácome et al. (2022, figure 3), which begins with a birth cohort from the 1910s and assigns income scores to fathers and children. That paper also finds large disparities between Black and White children's occupational scores as adults conditional on their fathers' estimated occupational status.³² This is reassuring since their paper is based on a different kind of dataset than ours—retrospective surveys rather than linked census data.

EVIDENCE ON CHANNELS AND HETEROGENEITY

As pointed out earlier, intergenerational patterns of labor market outcomes may reflect investments in human capital, social connections, local resources and environments, and more (Loury 1977, Becker and Tomes 1986, Solon 1999, Margo 2016). In the context we study, how were landowning Black families able to endow their sons with higher homeownership and literacy rates in this first post-Civil War generation? A deep assessment of this question is beyond the scope of this paper, but we can shed some light on broad, proximate channels.

It is possible, in theory, that location-specific differences in economic opportunity explain both land ownership rates among Black fathers and the subsequent achievements of sons. For a simple test of whether the father-son gradients in outcomes described in the previous section are largely a reflection of differences in local environments, we can regress sons' outcomes on fathers' status conditional on location fixed effects. We implement this test using indicators for “state economic areas” (SEAs), groups of contiguous counties that had similar economic characteristics in the twentieth century (Bogue 1951).³³ If cross-place differences were driving the baseline results described above, we would expect the relationship between fathers' and sons' outcomes to be much

³² An attractive feature of Jácome et al. (2022) is that it includes women. This is possible because they rely on retrospective surveys rather than linked census data.

³³ We use SEAs because our sample of farmers is stretched thin when using county fixed effects, though results are qualitatively similar.

weaker when based solely on *within* locality variation.

The results are reported in column 2 of Table 2 (sons of farmers) and Table 3 (all sons). In sum, we find that sons' homeownership and literacy advantages associated with fathers' farm ownership are *not* much weaker with the addition of location fixed effects. Therefore, we infer that the mechanisms linking fathers' and sons' outcomes were likely to have been primarily "within family" in nature.

Further analysis of heterogeneity within the linked sample provides more nuance. Across columns 4 and 5 in Tables 2 and 3, we split the sample by sons' ages (less than 30 versus 30 and over). We see that fathers' landholdings are similarly correlated with sons' *literacy* in both subsamples, but the father-son *property ownership* gradient is stronger among sons observed at older ages. Thus, observable advantages in homeownership, a proxy for household wealth, tended to materialize later in the sons' lifecycle. It is tempting to infer that this simply reflects within-family transfers or inheritances of land (e.g., sons taking over the family farm). Surely there was some of this, but the story is more complex. We see a positive, albeit muted, father-son gradient in ownership even among sons who left agriculture (column 6), consistent with improved lifecycle wealth accumulation for Black sons of landowning farmers even if they left the family farm.³⁴ In addition, we find no consistent evidence of a stronger gradient in home ownership for oldest sons in each household (column 3).

Why were Black sons of landholding fathers unable to translate their advantages in terms of family background and literacy into much better labor market outcomes, at least by the metrics we observe? We offer three interconnected explanations. First, it is important to keep in mind that most landowning Black households were still relatively poor—they were higher on the "agricultural ladder" than many others and, therefore, had a higher degree of autonomy in their work and higher average income, but their economic resources were still modest. Second, pervasive discrimination impeded Black advancement in education and up the occupational ladder and into high paying positions. This does not imply that labor market returns to literacy or family background were near zero circa 1900, but there were limited possibilities for earning high incomes through upward occupational mobility. Third, fathers' property ownership and place-specific human capital may

³⁴ We have also undertaken some analyses that split the sample of sons according to above-or-below median values of the Black population share, the Black school attendance rate, farm value per acre, and high cotton acreage share. The results were mixed and noisy. We concluded that larger samples of farmers may be required to reveal clear geographic heterogeneity in mobility, and we encourage future research in this direction.

have entailed substantial returns for sons *within farming*—perhaps in ways that our measures cannot detect—but not elsewhere. If so, sons of landowning fathers may have been strongly attached to local agriculture and less inclined to seek opportunity in other lines of work. This is consistent with evidence of their low rates of inter-state and inter-regional migration compared to sons of non-farming fathers.³⁵

CONCLUSIONS

In 1880, fifteen years after the Civil War’s last battle, there was substantial heterogeneity in the economic situation of Black households. Some had succeeded in acquiring land of their own, but most had not; some held skilled-craft or white-collar occupations, but most toiled as laborers or sharecroppers. By combining information from the agricultural and population census records, we provide a fuller picture of this heterogeneity than previously available, as well as a clear view of the wide gap between the Black and White distributions.

We then show that Black households with more economic resources were able to transmit substantial advantages to the next generation, particularly in terms of literacy and property ownership. We also find that this positive transmission did not merely reflect better local conditions; rather, the relationship appears to have held across families within the same 1880 locality. This suggests that within-family mechanisms were largely responsible for the transmission of status, though we would also argue that more research along these lines is merited to better understand both within-family and across-place factors.

These advantages, however, were quite limited when seen in the overall landscape of racial disparities. When we look specifically at the *labor market* outcomes of young men in our linked dataset, we see only traces of advantages transmitted over generations within the Black population, and we see large Black-White gaps in 1900 regardless of the sons’ background. It is striking that the children of White farmers who did not own land or of unskilled laborers typically had better adult outcomes than did the children of Black workers in any occupational category. These patterns underpin a fact emphasized in Margo (2016): Black-White income convergence after 1870 was far slower than standard estimates of intergenerational status persistence would predict.

³⁵ Migration status is shown in Figure 3 and in Appendix Table A4.

Vast differences in Black and White landholding, wealth, and opportunities for economic advancement were well entrenched aspects of American society circa 1880. Ransom points out that by this time, “most Northerners were unwilling to pay for the effort that would be required to guarantee freed slaves their rights in a society of hostile white Southerners” (2005, p. 367). Without these protections, even the children of landholding Black households had difficulty advancing and narrowing gaps in human capital and economic outcomes relative to White children, ensuring the perpetuation of large disparities into the twentieth century and beyond.

REFERENCES

- Aaronson, Daniel and Bhashkar Mazumder. 2008. "Intergenerational Economic Mobility in the United States, 1940 to 2000." *Journal of Human Resources* 43, 1: 139-72
- Abramitzky, Ran, Leah Platt Boustan, and Katherine Eriksson. 2014. "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration." *Journal of Political Economy* 122, 3: 467-506.
- Ager, Philipp, Leah Platt Boustan, and Katherine Eriksson. 2019. "The Intergenerational Effects of a Large Wealth Shock: White Southerners after the Civil War." *American Economic Review* 111, 11: 3767-3794.
- Alsan, Marcella and Marianne Wanamaker. 2018. "Tuskegee and the Health of Black Men." *Quarterly Journal of Economics* 133, 1: 407-455.
- Alston, Lee J. and Kyle D. Kauffman. 1998. "Up, Down, and Off the Agricultural Ladder: New Evidence and Implications of Agricultural Mobility for Blacks in the Postbellum South." *Agricultural History* 72, 2: 263-279.
- Bailey, Martha, Connor Cole, Morgan Henderson, and Catherine Massey. 2020. "How Well Do Automated Linking Methods Perform in Historical Samples? Evidence from US Historical Data." *Journal of Economic Literature* 58, 4: 997-1044.
- Bateman, Fred, and Foust, James D. Agricultural and Demographic Records of 21,118 Rural Households Selected from the 1860 Manuscript Censuses. Inter-university Consortium for Political and Social Research [distributor], 1992-02-16. <https://doi.org/10.3886/ICPSR09117.v1>
- Becker, Gary S. and Nigel Tomes. 1986. "Human Capital and the Rise and Fall of Families." *Journal of Labor Economics* 4, 3: S1-S39.
- Bleakley, Hoyt and Joseph P. Ferrie. 2016. "Shocking Behavior: Random Wealth in Antebellum Georgia and Human Capital Across Generations." *Quarterly Journal of Economics* 131, 3:1455-1495.
- Carruthers, Celeste K. and Marianne H. Wanamaker. 2017. "Separate and Unequal in the Labor Market: Human Capital and the Jim Crow Wage Gap." *Journal of Labor Economics* 35, 3: 655-696.
- Collins, William J., Nicholas Holtkamp, and Marianne H. Wanamaker. 2023. Collins Holtkamp and Wanamaker Black Americans' Landholdings and Economic Mobility after Emancipation. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2023-04-22. <https://doi.org/10.3886/E187441V2>
- Collins, William J. and Robert A. Margo. 2006. "Historical Perspectives on Racial Differences in Schooling in the United States." In E. Hanushek and F. Welch (eds.), *Handbook of the Economics of Education*. New York: North-Holland, pp. 107-154.
- Collins, William J. and Robert A. Margo. 2011. "Race and Home Ownership from the End of the Civil War to the Present." *American Economic Review, Papers and Proceedings* 101, 3: 355-359.
- Collins, William J. and Marianne H. Wanamaker. 2022. "African American Intergenerational Mobility since 1880." *American Economic Journal: Applied* 14, 3: 84-117.
- Cox, LaWanda. 1958. "The Promise of Land for the Freedmen." *Mississippi Valley Historical Review* 45, 3: 413-440.

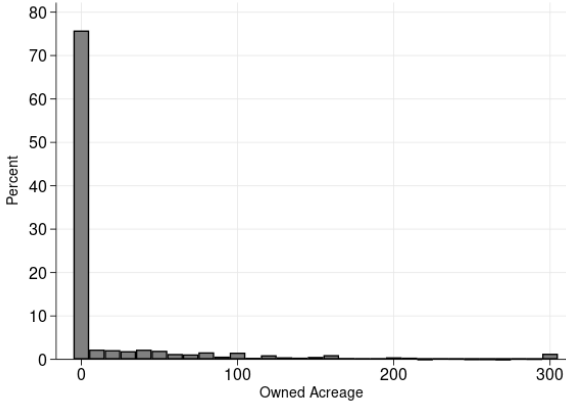
- DeCanio, Stephen J., 1979. "Accumulation and Discrimination in the Postbellum South." *Explorations in Economic History* 16, 2: 182-206.
- Derenoncourt, Ellora. 2022. "Can you Move to Opportunity? Evidence from the Great Migration." *American Economic Review* 112(2): 369-408.
- Derenoncourt, Ellora, Chi Hyun Kim, Moritz Kuhn, and Moritz Schularick. 2022. "Wealth of Two Nations: The US Racial Wealth Gap, 1860-2020." Working paper.
- Du Bois, W.E.B. 1901. "The Negro Landholder in Georgia." US Department of Labor Bulletin No. 35. Washington DC: GPO.
- Du Bois, W.E.B. 1935 [1998 edition]. *Black Reconstruction in America, 1860-1880*. New York: Free Press.
- Edwards, Richard, Jacob K. Friefeld, and Mikal Brotnov Eckstrom. 2019. "Canaan on the Prairie: New Evidence on the Number of African American Homesteaders in the Great Plains." *Great Plains Quarterly* 39, 3: 223-241.
- Ferrie, Joseph P. 1996. "A New Sample of Males Linked from the Public Use Microdata Sample of the 1850 US Federal Census of Population to the 1860 US Federal Census Manuscript Schedules." *Historical Methods* 29, 4: 141-156.
- Foner, Eric. 1988 [2014 edition]. *Reconstruction: America's Unfinished Revolution, 1863-1877*. New York: HarperCollins, Perennial Classics.
- Greene, Lorenzo J. and Carter G. Woodson. 1930. *The Negro Wage Earner*. Washington, DC: The Association for the Study of Negro Life and History.
- Hacker, J. David. 2013. "New Estimates of Census Coverage in the United States, 1850-1930." *Social Science History* 37, 1: 71-101.
- Hertz, Tom. 2005. "Rags, Riches, and Race: The Intergenerational Economic Mobility of Black and White Families in the United States." In S. Bowles, H. Gintis, and M. Osborne (eds.), *Unequal Chances: Family Background and Economic Success*. New York: Russell Sage and Princeton University Press, pp. 165-191.
- Higgs, Robert. 1977. *Competition and Coercion: Blacks in the American Economy, 1865-1914*. New York, NY: Cambridge University Press.
- Higgs, Robert. 1982. "Accumulation of Property by Southern Blacks before World War I." *American Economic Review* 72, 4: 725-737.
- Holmes, George K. and John S. Lord. 1896. *Report on Farms and Homes: Proprietorship and Indebtedness in the United States at the Eleventh Census: 1890*. Washington, DC: Government Printing Office.
- Jácome, Elisa, Ilyana Kuziemko, and Suresh Naidu. 2022. "Mobility for All: Representative Intergenerational Mobility Estimates over the 20th Century." NBER Working Paper 29289.
- Jaynes, Gerald David. 1986. *Branches without Roots: Genesis of the Black Working Class in the American South, 1862-1882*. New York: Oxford University Press.
- Johnson, Charles S. 1943. *Patterns of Negro Segregation*. New York: Harper and Brothers.
- Logan, Trevon. 2020. "Do Black Politicians Matter? Evidence from Reconstruction." *Journal of Economic History* 80, 1: 1-37.

- Long, Jason and Joseph Ferrie. 2013. "Intergenerational Occupational Mobility in Britain and the U.S. Since 1850." *American Economic Review* 103, 4: 1109-1137.
- Loury, Glenn. 1977. "A Dynamic Theory of Racial Income Differences" in P.A. Wallace and A. LaMond (editors) *Women, Minorities, and Employment Discrimination*. Lexington, MA: Lexington Books.
- Margo, Robert A. 1984. "Accumulation of Property by Southern Blacks before World War I: Comment and Further Evidence." *American Economic Review* 74, 4: 768-776.
- Margo, Robert A. 1990. *Race and Schooling in the South, 1880-1950: An Economic History*. Chicago, IL: University of Chicago Press.
- Margo, Robert A. 2016. "Obama, Katrina, and the Persistence of Racial Inequality." *Journal of Economic History* 76, 2: 301-341.
- Mazumder, Bhashkar. 2014. "Black-White Differences in Intergenerational Economic Mobility in the US." *Economic Perspectives* 38, 1: 1-18.
- Miller, Melinda C. 2020. "The Righteous and Reasonable Ambition to Become a Landholder: Land and Racial Inequality in the Postbellum South." *Review of Economics and Statistics* 102, 2: 381-394.
- Minnesota Population Center. 2017. *North Atlantic Population Project: Complete Count Microdata, Version 2.3* [dataset]. Minneapolis: Minnesota Population Center.
<http://doi.org/10.18128/D040.V2.3>.
- Mohammed, Shariq and Paul Mohnen. 2021. "Black Economic Progress in the Jim Crow South: Evidence from Rosenwald Schools." Working Paper.
- Myrdal, Gunnar. 1944. *An American Dilemma: The Negro Problem and Modern Democracy*. New York, NY: Harper & Row.
- Oliver, Melvin and Thomas M. Shapiro. 1995. *Black Wealth/White Wealth: A New Perspective on Racial Inequality*. New York, NY: Routledge.
- Olivetti, Claudia and M. Daniele Paserman. 2015. "In the Name of the Son (and the Daughter): Intergenerational Mobility in the United States." *American Economic Review* 105, 8: 2695-2724.
- Oubre, Claude F. 1978 [2012 edition]. *Forty Acres and a Mule: The Freedmen's Bureau and Black Land Ownership*. Baton Rouge: Louisiana State University Press.
- Parker, William N., and Gallman, Robert E. Southern Farms Study, 1860. Inter-university Consortium for Political and Social Research [distributor], 1992-02-16.
<https://doi.org/10.3886/ICPSR07419.v1>
- Ransom, Roger L. 2005. "Reconstructing Reconstruction: Options and Limitations to Federal Policies on Land Distribution in 1866-67." *Civil War History* 51, 4: 364-377.
- Ransom, Roger L. 2006. "Table Eh1-7: Population of the Slave States, by State, Race, and Slave Status: 1860-1870." In S. Carter et al. (eds.), *Historical Statistics of the United States, Millennial Edition*. New York: Cambridge University Press, p. 5-783.
- Ransom, Roger L. and Richard Sutch. 1977 [2001 edition]. *One Kind of Freedom: The Economic Consequences of Emancipation*. Cambridge, UK: Cambridge University Press.
- Reid, Richard. 1995. "The 1870 United States Census and Black Underenumeration: A Test Case from North Carolina." *Social History* 28, 56: 487-499.

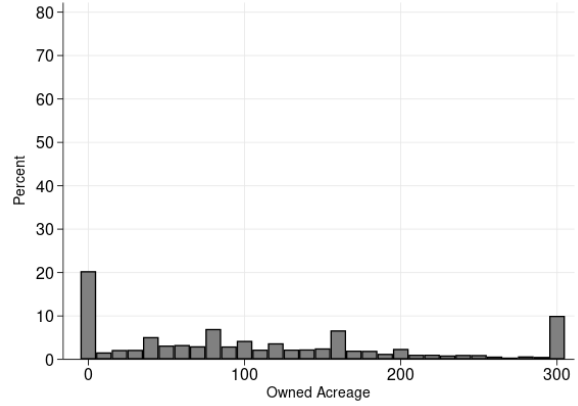
- Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. 2015. *Integrated Public Use Microdata Series: Version 6.0* [database]. Minneapolis: University of Minnesota. <http://doi.org/10.18128/D010.V6.0>.
- Ruggles, Steven, Catherine A. Fitch, Ronald Goeken, J. David Hacker, Matt A. Nelson, Evan Roberts, Megan Schouweiler, and Matthew Sobek. 2021. *IPUMS Ancestry Full Count Data: Version 3.0* [dataset]. Minneapolis, MN: IPUMS. <https://doi.org/10.18128/D014.V3.0>
- Steven Ruggles, Sarah Flood, Matthew Sobek, Danika Brockman, Grace Cooper, Stephanie Richards, and Megan Schouweiler. *IPUMS USA: Version 13.0* [dataset]. Minneapolis, MN: IPUMS, 2023. <https://doi.org/10.18128/D010.V13.0>.
- Solon, Gary. 1999. "Intergenerational Mobility in the Labor Market." In O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics, Volume 3A*. Amsterdam: Elsevier, 1761-1800.
- Spriggs, William Edward. 1984. *Afro-American Wealth Accumulation: Virginia 1900-1914*. Dissertation, University of Wisconsin-Madison. Accessed via HathiTrust March 2, 2022.
- Sundstrom, William A. 1994. "The Color Line: Racial and Discrimination in Northern Labor Markets, 1910-1950." *Journal of Economic History* 54, 2: 382-396.
- Sutch, Richard, and Roger Ransom. *Southern Agricultural Households in the United States, 1880*. Inter-university Consortium for Political and Social Research [distributor], 2007-09-19. <https://doi.org/10.3886/ICPSR09430.v1>
- Tan, Hui Ren. 2023. "A Different Land of Opportunity: The Geography of Intergenerational Mobility in the Early 20th Century." *Journal of Labor Economics* 41, 1: 77-102.
- Ward, Zach. 2023. "Intergenerational Mobility in American History: Accounting for Race and Measurement Error." NBER Working Paper 29256.
- Williams, Heather Andrea. *Self-Taught: African American Education in Slavery and Freedom*. Chapel Hill: University of North Carolina Press.
- Wright, Gavin. 1986. *Old South, New South: Revolutions in the Southern Economy since the Civil War*. New York: Basic Books.

FIGURE 1 – 1880 DISTRIBUTION OF OWNED FARM ACREAGE AND FARM VALUE AMONG BLACK AND WHITE FARMERS, ALL U.S. STATES

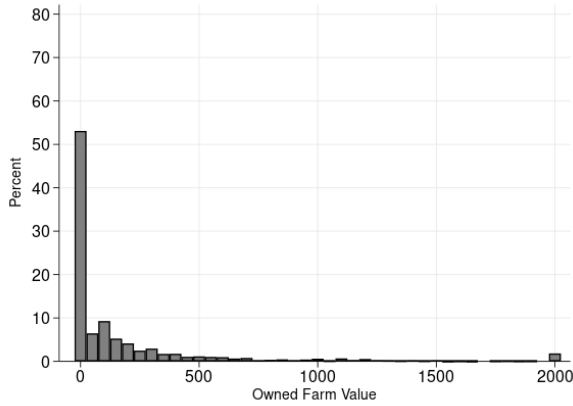
BLACK FARM ACREAGE



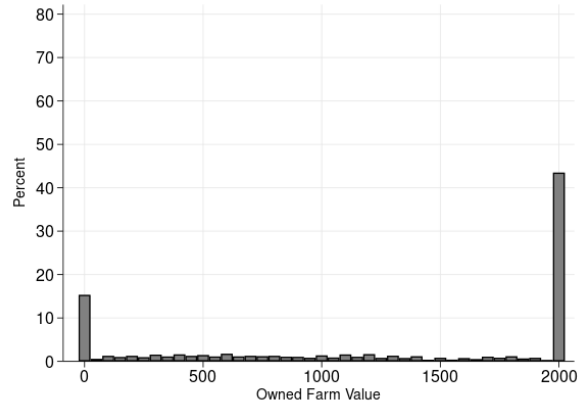
WHITE FARM ACREAGE



BLACK FARM VALUE



WHITE FARM VALUE

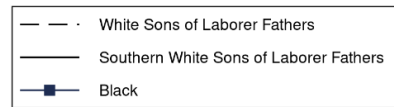
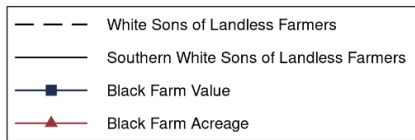
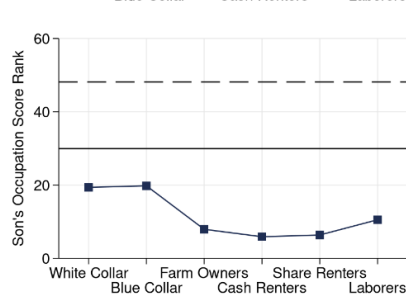
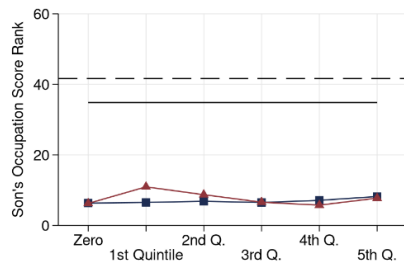
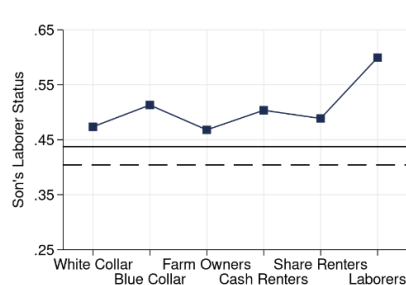
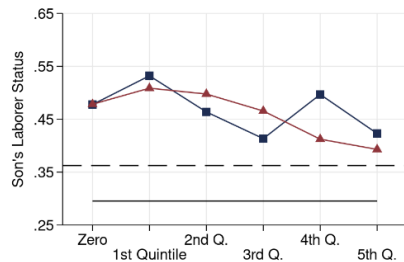
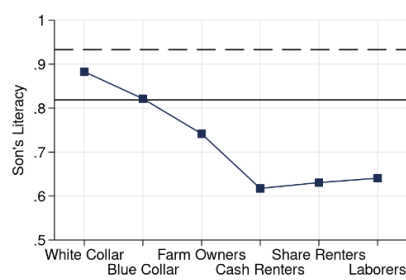
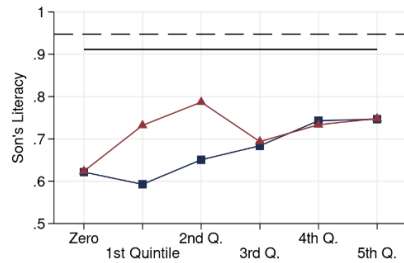
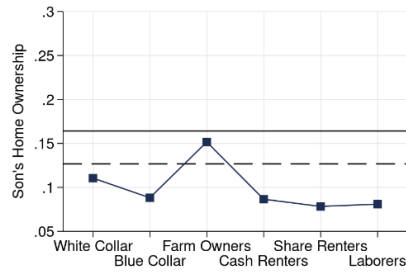
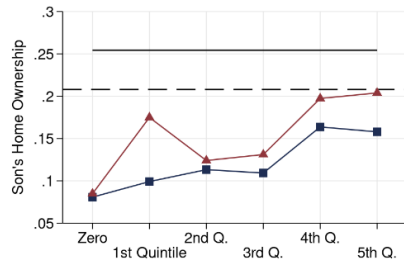


Notes: Includes non-owning farmers, but not farm laborers. For presentation, farm acreage capped at 300 acres and farm values are capped at \$2,000. All renters for share are assumed to have a farm value of \$0. Renters for cash are assumed to have a farm value equal to their livestock value only. Histograms are weighted plots of 4,934 white farmers and 3,182 black farmers.

**FIGURE 2 – SONS’ 1900 OUTCOMES BY FATHERS’ 1880
LANDOWNING OR OCCUPATION STATUS**

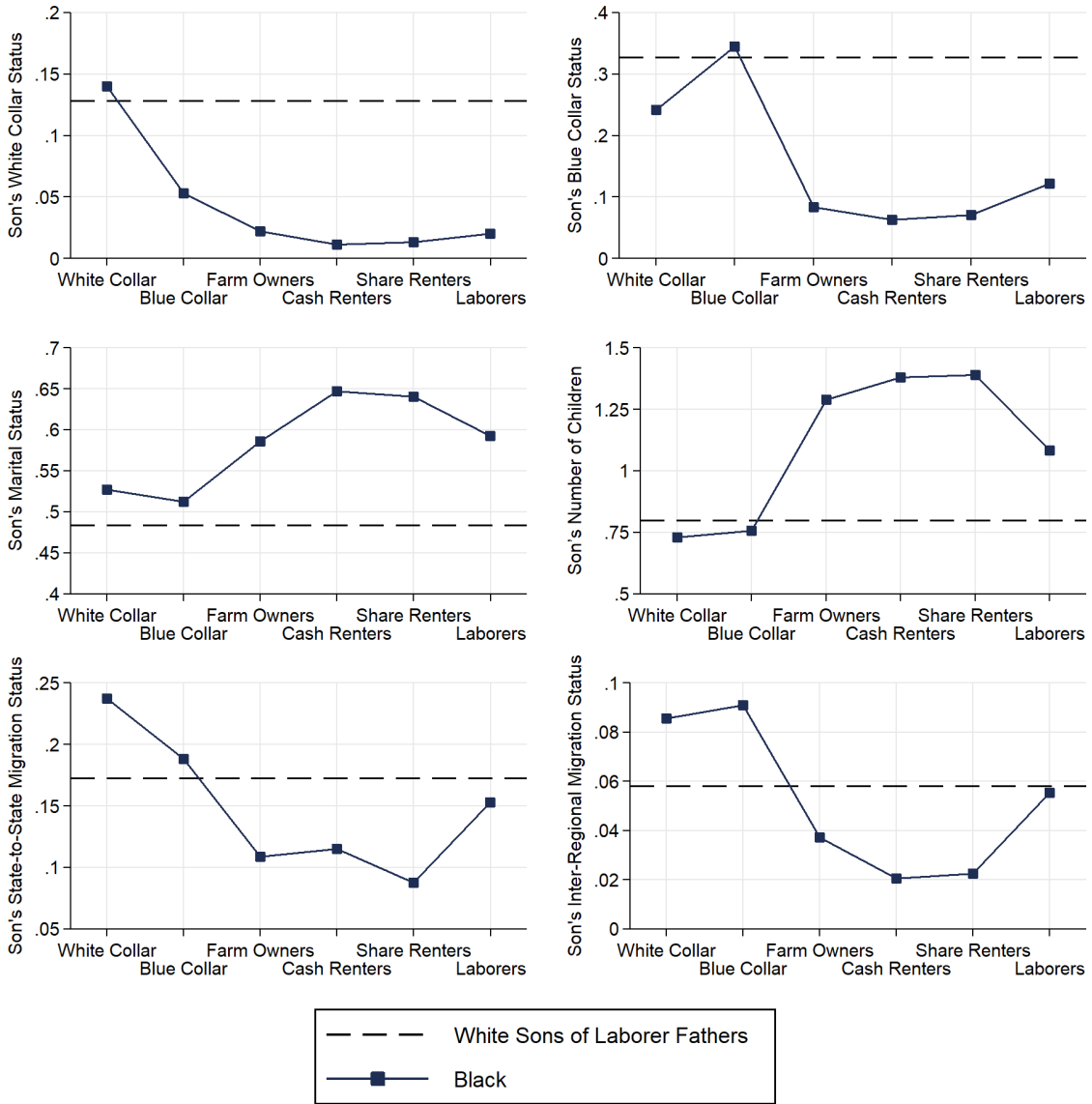
QUINTILES OF FARM OWNERSHIP

OCCUPATION CATEGORIES



Notes: Figures display the average value for each outcome within each quintile or occupation category after age adjusting. The horizontal reference lines are average outcomes for White sons, as described in the legends. For the *Quintiles of Farm Ownership* panel, the reference sample for age adjustment is all farmers (owners, cash renters, and share renters). For the *Occupation Categories* panel, the reference sample for age adjustment is all fathers. Reference samples are divided into age bins of 18-24; 25-29; 30-34; 35-39. Quintile-by-race and occupation-by-race subsamples are then reweighted to reflect the age distribution of the reference sample. Distributions in left panel (by value and acreage) reflect 4,934 white farmers and 3,182 black farmers. Distributions in right panel (by occupation) reflect 282,938 white father/son pairs and 25,025 black father/son pairs. See the text for additional description of the samples.

FIGURE 3 – SONS' 1900 ADDITIONAL OUTCOMES BY FATHERS' 1880 OCCUPATION CATEGORIES



Notes: See notes to Figure 2. The horizontal dashed line represents the average outcome level for White sons of laborers.

**TABLE 1: OCCUPATION AND LAND OWNERSHIP
DISTRIBUTION AMONG 1880 FATHERS IN LINKED SAMPLE**

	LINKED SAMPLE	
	White	Black
Farmer, Owns	43.8	12.3
Owns >=40 Acres	39.6	8.7
Farmer, Rents for Cash	3.0	13.8
Farmer, Rents for Share	8.0	23.8
White Collar	13.9	1.1
Blue Collar, Skilled	12.5	2.5
Blue Collar, Semi-skilled	9.4	3.9
Laborer	9.6	42.6
<hr/>		
Among Farm Owners and Renters		
Average value (\$)	3005.5	262.5
Median value (\$)	1529	0
Average acreage	144.2	24.9
Median acreage	90	0
<hr/>		
Among Farm Owners		
Average value (\$)	3720.4	843.4
Median value (\$)	2200	425
Average acreage	179.6	100.9
Median acreage	120	66

Notes and Sources: Farm ownership and rental status is ascertained from the 1880 census of agriculture manuscripts. Other occupational categories follow the 1880 census of population information, as coded in the IPUMS variable *occ1950*. “White collar” includes professional, clerical, and sales occupations. “Blue collar skilled” includes craftsmen primarily and certain service occupations (e.g., policemen and detectives). “Blue collar semi-skilled” includes operatives primarily and certain service occupations (e.g., barbers, bartenders). Laborer includes both blue collar laborers and farm laborers. The top panel reflects a weighted summary of a sample containing 282,938 white father/son pairs and 25,025 black father/son pairs. The second panel reflects 4,934 white observations and 3,182 black observations. The third panel reflects 3,963 white observations and 787 black observations.

TABLE 2: RETURNS TO BLACK FATHERS' FARM VALUE

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	With SEA Fixed Effects	Oldest Sons Only	Sons Younger than 30	Sons 30 and Older	Sons Who Left Agriculture
SONS' HOME OWNERSHIP (BINARY)						
1st Quintile	0.0173 (0.0177)	0.0122 (0.0183)	-0.0222 (0.0243)	0.0196 (0.0190)	0.0109 (0.0364)	0.0279 (0.0395)
2nd Quintile	0.0341 (0.0208)	0.0314 (0.0207)	0.0069 (0.0312)	0.0082 (0.0203)	0.0764* (0.0424)	-0.0032 (0.0374)
3rd Quintile	0.0257 (0.0199)	0.0158 (0.0205)	0.0395 (0.0349)	0.0422* (0.0238)	0.0131 (0.0342)	-0.0786** (0.0310)
4th Quintile	0.0827*** (0.0229)	0.0633*** (0.0241)	0.0393 (0.0319)	0.0315 (0.0222)	0.1567*** (0.0458)	0.0598 (0.0412)
5th Quintile	0.0925*** (0.0232)	0.0799*** (0.0245)	0.1092** (0.0431)	0.0375 (0.0256)	0.1560*** (0.0403)	0.0547 (0.0424)
SONS' LITERACY (BINARY)						
1st Quintile	-0.0313 (0.0287)	-0.0127 (0.0295)	-0.0866** (0.0433)	-0.0440 (0.0345)	-0.0076 (0.0510)	-0.0655 (0.0502)
2nd Quintile	0.0326 (0.0320)	0.0584* (0.0327)	0.0531 (0.0483)	-0.0076 (0.0406)	0.0979* (0.0514)	0.0068 (0.0560)
3rd Quintile	0.0578* (0.0297)	0.0758** (0.0304)	0.1281*** (0.0457)	0.0562 (0.0373)	0.0675 (0.0472)	-0.0353 (0.0525)
4th Quintile	0.1130*** (0.0285)	0.0902*** (0.0291)	0.0510 (0.0472)	0.1142*** (0.0353)	0.1116** (0.0472)	0.0238 (0.0473)
5th Quintile	0.1255*** (0.0284)	0.0740** (0.0307)	0.0808 (0.0491)	0.1145*** (0.0379)	0.1392*** (0.0430)	0.0879* (0.0459)
SONS' LABORER STATUS (BINARY)						
1st Quintile	0.0531* (0.0288)	0.0693** (0.0304)	0.0654 (0.0422)	0.0224 (0.0344)	0.1085** (0.0514)	
2nd Quintile	-0.0142 (0.0308)	0.0048 (0.0312)	-0.0465 (0.0453)	0.0085 (0.0391)	-0.0462 (0.0492)	
3rd Quintile	-0.0564* (0.0298)	-0.0445 (0.0310)	-0.0805 (0.0497)	-0.1058*** (0.0381)	0.0055 (0.0461)	
4th Quintile	0.0171 (0.0295)	0.0171 (0.0300)	0.0494 (0.0455)	0.0306 (0.0376)	0.0003 (0.0469)	
5th Quintile	-0.0388 (0.0299)	-0.0594* (0.0306)	-0.0463 (0.0503)	-0.0628 (0.0414)	-0.0084 (0.0429)	
SONS' OCCUPATION INCOME SCORE RANK						
1st Quintile	0.1080 (0.4764)	0.1051 (0.4755)	0.8559 (0.8223)	0.6191 (0.6055)	-0.8233 (0.7581)	
2nd Quintile	0.3927 (0.6009)	0.2267 (0.6125)	0.1623 (0.9202)	0.8865 (0.7505)	-0.3900 (0.9947)	
3rd Quintile	0.1194 (0.5295)	-0.5554 (0.4581)	-0.6107 (0.9590)	0.3640 (0.7115)	-0.2777 (0.7938)	
4th Quintile	0.6423 (0.5064)	-0.0082 (0.5052)	0.4091 (0.8533)	1.0739* (0.5919)	-0.0257 (0.8917)	
5th Quintile	1.7188*** (0.6246)	0.4799 (0.5838)	1.7512* (1.0523)	2.2083** (0.8968)	1.0834 (0.8698)	
N	3,182	3,182	1,310	2,035	1,147	894

Notes: The sample includes sons of farmers only, as described in the text. The table contains regression coefficients on quintile dummies, representing the quintile of the value of fathers' 1880 farm holdings. Coefficients are interpreted relative to a farm

value of \$0. Fathers who owned farms are assigned the combined value of the property and livestock. Fathers who rented for cash are assigned a value equal to the value of farm livestock. Fathers who rented for a share are assigned a value of \$0. Baseline regressions include fixed effects for sons' age in 1900, fathers' age in 1880, fathers' urban status, and fathers' 1880 state of residence. Column 2 includes fixed effects for State Economic Area (SEA) of residence in lieu of state of residence fixed effects. Column 3 includes only the oldest sons in the 1880 household. Columns 4 and 5 bifurcate the sample by age. Column 6 excludes Black sons who were farmers or farm laborers in 1900.

TABLE 3: RETURNS TO BLACK FATHERS' OCCUPATION

	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline	With SEA Fixed Effects	Oldest Sons Only	Sons Younger than 30	Sons 30 and Older	Sons Who Left Agriculture
SONS' HOME OWNERSHIP (BINARY)						
Return to White Collar Status	0.0363** (0.0158)	0.0296* (0.0161)	0.0272 (0.0198)	0.0337** (0.0170)	0.0430 (0.0352)	0.0169 (0.0169)
Return to Blue Collar Status	0.0173*** (0.0065)	0.0158** (0.0068)	0.0204** (0.0090)	0.0161** (0.0065)	0.0203 (0.0150)	0.0143* (0.0074)
Return to Farm Ownership	0.0782*** (0.0137)	0.0704*** (0.0142)	0.0776*** (0.0215)	0.0322** (0.0140)	0.1418*** (0.0267)	0.0353* (0.0212)
Return to Cash Renting	-0.0028 (0.0102)	0.0091 (0.0110)	-0.0141 (0.0151)	0.0094 (0.0112)	-0.0178 (0.0196)	0.0099 (0.0214)
Return to Share Renting	-0.0093 (0.0074)	0.0020 (0.0084)	0.0006 (0.0114)	-0.0040 (0.0075)	-0.0168 (0.0161)	0.0073 (0.0160)
SONS' LITERACY (BINARY)						
Return to White Collar Status	0.1837*** (0.0167)	0.1602*** (0.0173)	0.1692*** (0.0235)	0.1823*** (0.0193)	0.1825*** (0.0327)	0.1228*** (0.0169)
Return to Blue Collar Status	0.1098*** (0.0090)	0.0787*** (0.0093)	0.1125*** (0.0120)	0.1050*** (0.0104)	0.1189*** (0.0169)	0.0814*** (0.0092)
Return to Farm Ownership	0.1211*** (0.0166)	0.1183*** (0.0174)	0.0987*** (0.0272)	0.1243*** (0.0211)	0.1167*** (0.0268)	0.0629** (0.0261)
Return to Cash Renting	0.0002 (0.0171)	0.0557*** (0.0177)	0.0088 (0.0261)	-0.0124 (0.0214)	0.0198 (0.0279)	-0.0268 (0.0305)
Return to Share Renting	0.0118 (0.0132)	0.0378*** (0.0141)	0.0211 (0.0197)	0.0185 (0.0159)	0.0002 (0.0233)	0.0240 (0.0226)
SONS' LABORER STATUS (BINARY)						
Return to White Collar Status	-0.1122*** (0.0241)	-0.1211*** (0.0244)	-0.0906*** (0.0335)	-0.1169*** (0.0287)	-0.1071** (0.0452)	-0.1817*** (0.0286)
Return to Blue Collar Status	-0.0738*** (0.0111)	-0.0865*** (0.0113)	-0.0773*** (0.0152)	-0.0870*** (0.0130)	-0.0479** (0.0204)	-0.1590*** (0.0127)
Return to Farm Ownership	-0.1282*** (0.0177)	-0.1108*** (0.0183)	-0.1098*** (0.0277)	-0.1091*** (0.0230)	-0.1618*** (0.0271)	-0.0354 (0.0296)
Return to Cash Renting	-0.0973*** (0.0166)	-0.0491*** (0.0177)	-0.0783*** (0.0250)	-0.0744*** (0.0208)	-0.1381*** (0.0276)	0.0182 (0.0308)
Return to Share Renting	-0.1113*** (0.0129)	-0.0795*** (0.0140)	-0.0877*** (0.0194)	-0.0878*** (0.0157)	-0.1567*** (0.0222)	-0.0286 (0.0242)
SONS' OCCUPATION INCOME SCORE RANK						
Return to White Collar Status	5.2286*** (0.7766)	4.1090*** (0.6425)	6.0843*** (1.0412)	4.9485*** (0.8676)	5.8165*** (1.6060)	3.9252*** (0.9151)
Return to Blue Collar Status	5.0872*** (0.3206)	3.0566*** (0.2731)	5.2284*** (0.4259)	4.7477*** (0.3640)	5.7730*** (0.6104)	2.4906*** (0.3556)
Return to Farm Ownership	-1.3344*** (0.3424)	-0.3478 (0.3292)	-1.3557** (0.5796)	-0.9855** (0.4408)	-1.8182*** (0.5365)	-1.2350* (0.6419)
Return to Cash Renting	-3.3347*** (0.2778)	-0.6113** (0.2886)	-3.4423*** (0.4466)	-3.1261*** (0.3602)	-3.6487*** (0.4371)	-2.7868*** (0.6884)
Return to Share Renting	-2.7524*** (0.2526)	-0.3583 (0.2830)	-2.7525*** (0.3548)	-2.9115*** (0.2848)	-2.4905*** (0.4855)	-1.3013** (0.6197)
N	25,025	25,025	12,074	18,276	6,749	12,137

Notes: See notes to Table 2.

APPENDIX TO

**Black Americans' Landholdings and Economic Mobility after Emancipation:
Evidence from the Census of Agriculture and Linked Records**

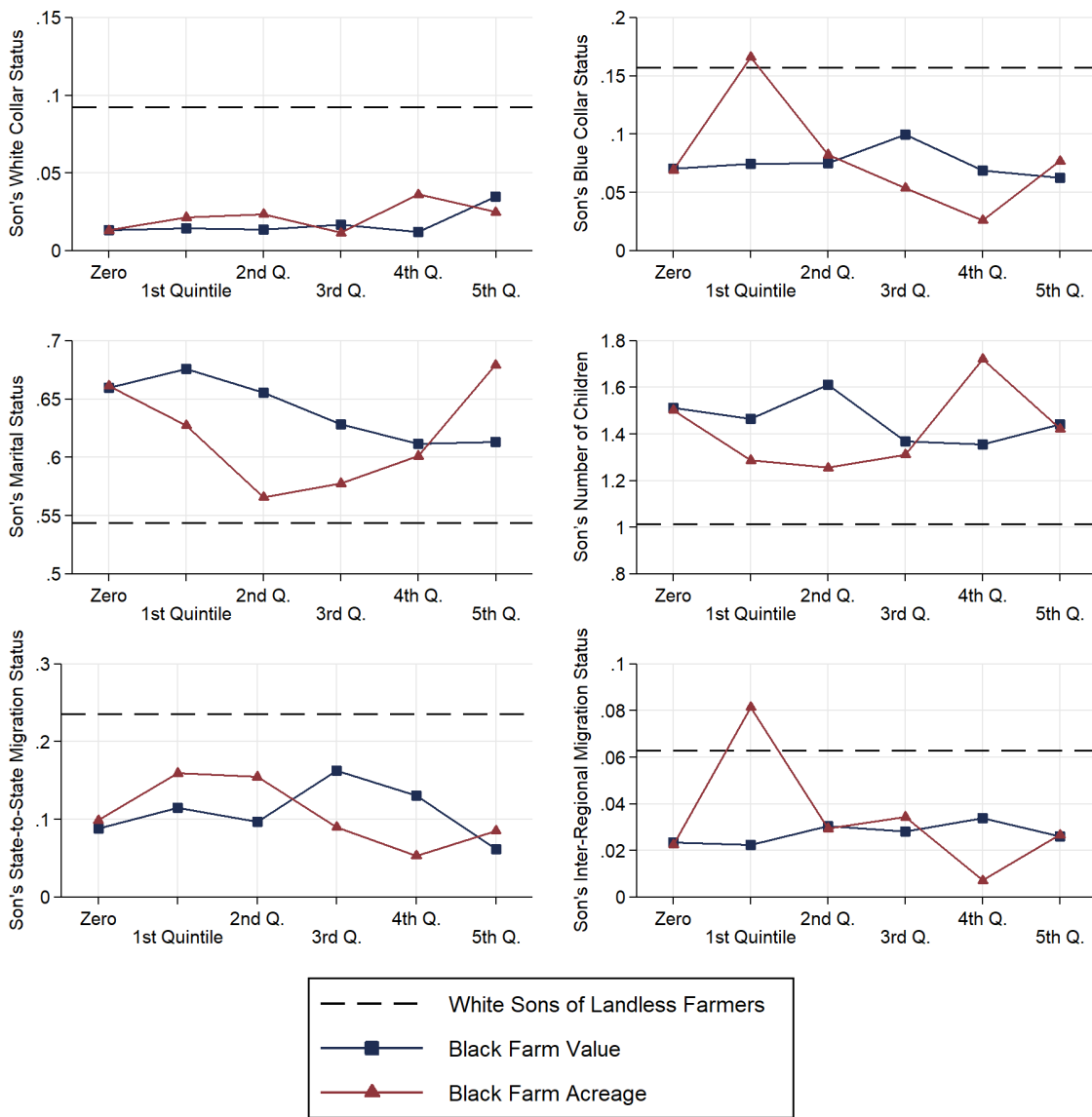
APPENDIX I. APPENDIX TABLES AND FIGURES

APPENDIX II. DATA APPENDIX

- a. LINKED SAMPLE
- b. IMPUTING MISSING OCCUPATIONS FOR SONS OBSERVED IN 1900
- c. 1880 AGRICULTURE CENSUS LINK
- d. ASSIGNMENT OF INCOME SCORES AND INCOME SCORE RANKS

APPENDIX I. TABLES AND FIGURES

**FIGURE A1 – SONS’ 1900 ADDITIONAL OUTCOMES BY FATHERS’ 1880
LANDOWNING STATUS**

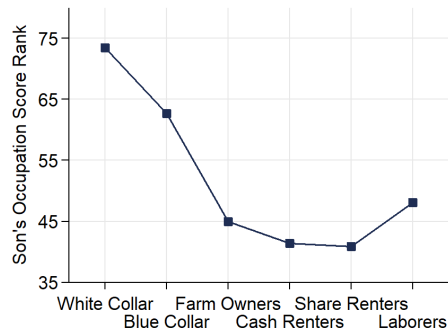
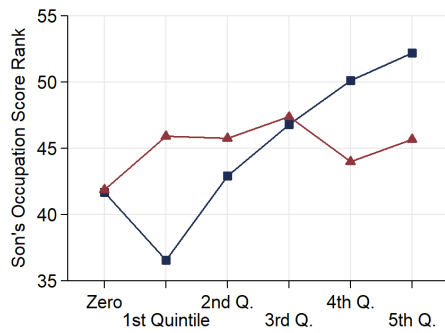
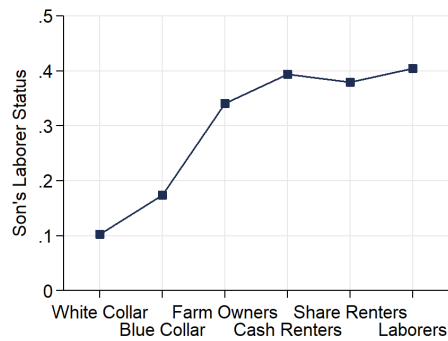
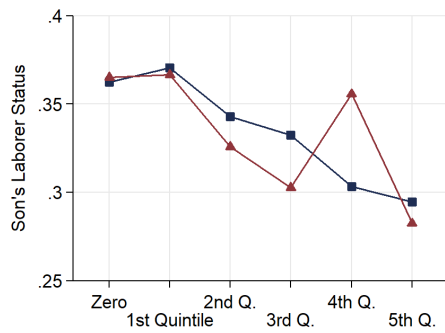
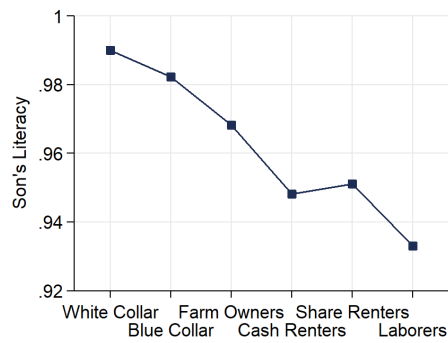
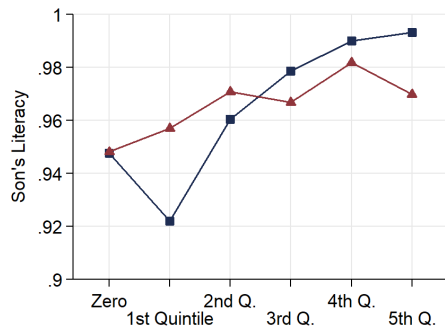
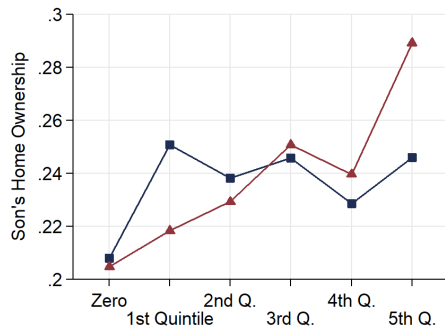


Notes: See notes to Figure 2 in the main text.

**FIGURE A2 – SONS’ 1900 OUTCOMES BY FATHERS’ 1880
LANDOWNING OR OCCUPATION STATUS – WHITE SONS ONLY**

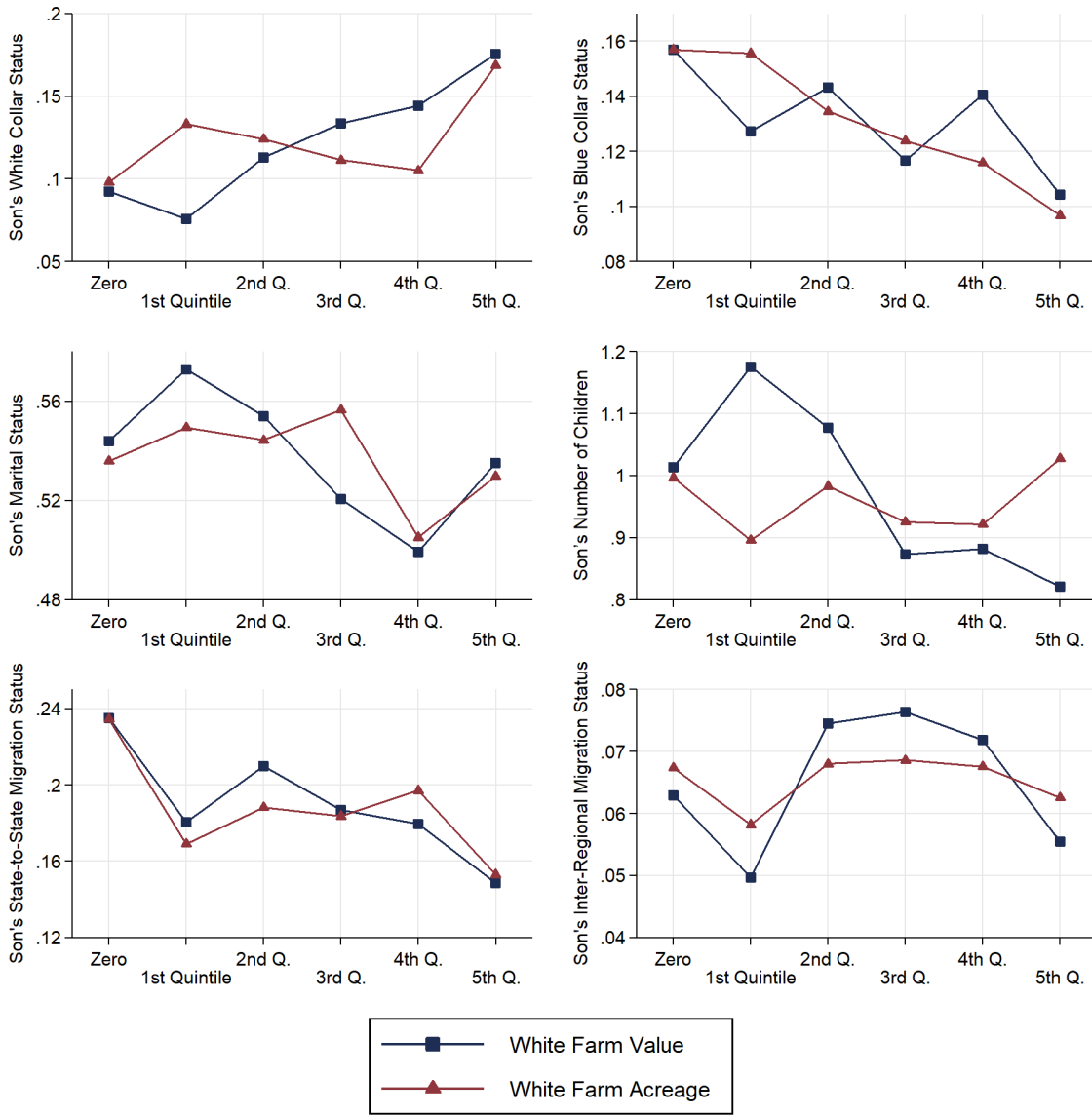
QUINTILES OF FARM OWNERSHIP

OCCUPATION CATEGORIES



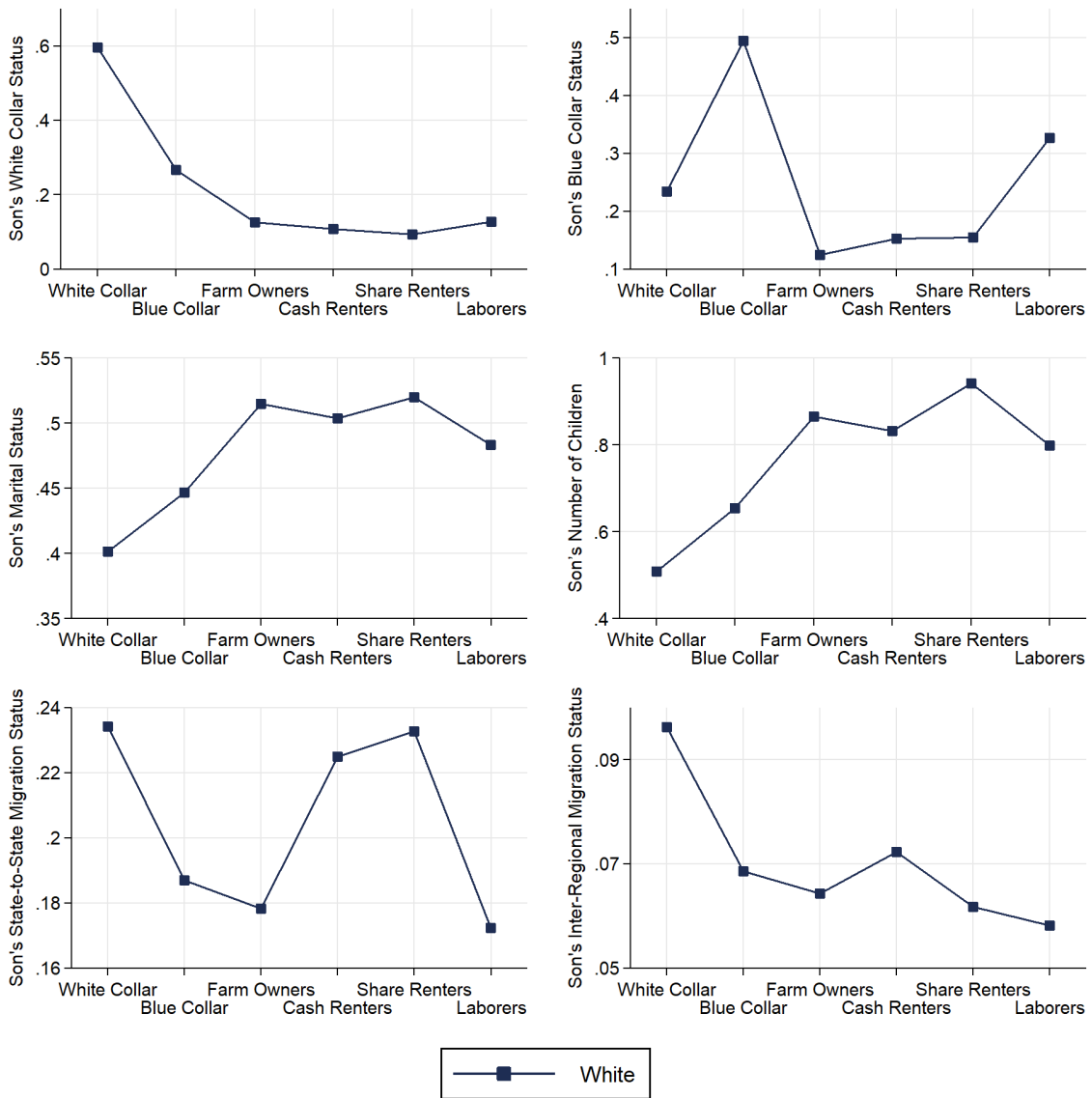
Notes: See notes to Figure 2 in the main text.

**FIGURE A3 – SONS’ 1900 ADDITIONAL OUTCOMES
BY FATHERS’ 1880 LANDOWNING STATUS – WHITE SONS ONLY**



Notes: See notes to Figure 2 in the main text.

FIGURE A4 – SONS’ 1900 ADDITIONAL OUTCOMES BY FATHERS’ 1880 OCCUPATION STATUS – WHITES ONLY



Notes: See notes to Figure 2 in the main text.

**TABLE A1: RETURN TO QUINTILES OF FATHERS' FARM VALUE
(RELATIVE TO NON-OWNERS)**

	BLACK		WHITE	
	U.S.	South Only	U.S.	South Only
SONS' OCCUPATION INCOME SCORE RANK				
1st Quintile	-0.1853 (0.4720)	-0.1028 (0.4705)	-2.6167** (1.2338)	-2.5062 (1.7425)
2nd Quintile	0.1055 (0.5893)	0.1439 (0.5903)	0.5407 (1.2551)	0.8710 (1.9192)
3rd Quintile	-0.0834 (0.4773)	-0.1259 (0.4771)	2.9432** (1.2591)	3.7294* (2.2499)
4th Quintile	0.2496 (0.4940)	0.3807 (0.4940)	4.8980*** (1.2649)	7.3141** (3.0835)
5th Quintile	0.6576 (0.5520)	0.4820 (0.5604)	5.8146*** (1.2915)	8.0435** (3.7938)
SONS' HOME OWNERSHIP (BINARY)				
1st Quintile	0.0201 (0.0180)	0.0206 (0.0180)	0.0225 (0.0194)	0.0410 (0.0280)
2nd Quintile	0.0379* (0.0207)	0.0385* (0.0208)	0.0143 (0.0199)	0.0310 (0.0308)
3rd Quintile	0.0290 (0.0201)	0.0288 (0.0203)	0.0327 (0.0203)	0.0502 (0.0373)
4th Quintile	0.0788*** (0.0232)	0.0836*** (0.0236)	0.0257 (0.0201)	0.0165 (0.0444)
5th Quintile	0.0882*** (0.0241)	0.0849*** (0.0248)	0.0537** (0.0209)	0.0352 (0.0531)
SONS' LITERACY (BINARY)				
1st Quintile	-0.0194 (0.0284)	-0.0195 (0.0285)	-0.0113 (0.0125)	0.0018 (0.0221)
2nd Quintile	0.0512 (0.0317)	0.0516 (0.0318)	0.0148 (0.0109)	0.0459** (0.0213)
3rd Quintile	0.0710** (0.0297)	0.0732** (0.0300)	0.0256*** (0.0098)	0.0744*** (0.0211)
4th Quintile	0.0948*** (0.0280)	0.0963*** (0.0284)	0.0316*** (0.0088)	0.0853*** (0.0221)
5th Quintile	0.0770*** (0.0295)	0.0780** (0.0305)	0.0314*** (0.0086)	0.0769*** (0.0237)
SONS' LABORER STATUS (BINARY)				
1st Quintile	0.0593** (0.0290)	0.0573** (0.0291)	0.0234 (0.0234)	0.0353 (0.0322)
2nd Quintile	-0.0150 (0.0306)	-0.0154 (0.0307)	-0.0139 (0.0230)	0.0075 (0.0338)
3rd Quintile	-0.0548* (0.0299)	-0.0550* (0.0302)	-0.0423* (0.0230)	-0.0206 (0.0373)
4th Quintile	0.0074 (0.0294)	0.0034 (0.0298)	-0.0888*** (0.0225)	-0.0171 (0.0461)
5th Quintile	-0.0677** (0.0302)	-0.0652** (0.0310)	-0.0982*** (0.0230)	-0.0464 (0.0582)
N	3,182	3,109	4,934	1,639

Notes: Table contains regression coefficient for quintile dummies, representing the quintile of fathers' 1880 farm value, and are interpreted relative to a farm value of \$0. Sample includes only farmers; renters for share are assigned a farm value of \$0. Renters for cash are assigned a farm value equal to the value of their livestock. Farm owners are assigned the combined value of the property and livestock. Regressions also include fixed effects for sons' age in 1900, fathers' age in 1880, fathers' urban status, and fathers' 1880 state fixed effects.

**TABLE A2: RETURN TO QUINTILES OF FATHERS' FARM VALUE
(RELATIVE TO NON-OWNERS), OTHER OUTCOMES**

	BLACK		WHITE	
	U.S.	South Only	U.S.	South Only
SONS' STATE-TO-STATE MIGRATION				
1st Quintile	0.0157 (0.0185)	0.0155 (0.0186)	-0.0343* (0.0204)	-0.0684** (0.0274)
2nd Quintile	-0.0097 (0.0188)	-0.0099 (0.0189)	-0.0207 (0.0205)	-0.0567* (0.0292)
3rd Quintile	0.0516** (0.0225)	0.0481** (0.0226)	-0.0494** (0.0204)	-0.0564* (0.0330)
4th Quintile	0.0381* (0.0202)	0.0331 (0.0203)	-0.0490** (0.0208)	0.0133 (0.0435)
5th Quintile	-0.0184 (0.0162)	-0.0175 (0.0162)	-0.0803*** (0.0205)	-0.0282 (0.0502)
SONS' INTER-REGIONAL MIGRATION				
1st Quintile	-0.0074 (0.0091)	-0.0075 (0.0091)	0.0065 (0.0119)	-0.0228* (0.0123)
2nd Quintile	-0.0014 (0.0100)	-0.0017 (0.0100)	0.0101 (0.0126)	-0.0056 (0.0154)
3rd Quintile	-0.0028 (0.0096)	-0.0040 (0.0094)	0.0097 (0.0128)	-0.0033 (0.0182)
4th Quintile	0.0062 (0.0109)	0.0057 (0.0108)	0.0073 (0.0130)	0.0131 (0.0242)
5th Quintile	-0.0039 (0.0098)	-0.0006 (0.0094)	-0.0171 (0.0127)	0.0108 (0.0330)
SONS' WHITE COLLAR STATUS				
1st Quintile	0.0012 (0.0070)	0.0011 (0.0070)	-0.0262* (0.0144)	-0.0119 (0.0192)
2nd Quintile	0.0023 (0.0081)	0.0022 (0.0081)	0.0144 (0.0155)	0.0421* (0.0229)
3rd Quintile	0.0007 (0.0082)	0.0006 (0.0084)	0.0384** (0.0162)	0.0646** (0.0280)
4th Quintile	-0.0017 (0.0069)	-0.0021 (0.0071)	0.0479*** (0.0169)	0.1345*** (0.0412)
5th Quintile	0.0203* (0.0119)	0.0213* (0.0124)	0.0799*** (0.0180)	0.1247** (0.0524)
SONS' BLUE COLLAR STATUS				
1st Quintile	0.0000 (0.0156)	0.0002 (0.0156)	-0.0153 (0.0178)	-0.0294 (0.0233)
2nd Quintile	-0.0029 (0.0169)	-0.0029 (0.0169)	-0.0150 (0.0180)	-0.0352 (0.0245)
3rd Quintile	0.0221 (0.0193)	0.0214 (0.0193)	-0.0511*** (0.0175)	-0.0600** (0.0263)
4th Quintile	-0.0063 (0.0164)	-0.0029 (0.0166)	-0.0341* (0.0186)	-0.0564* (0.0315)
5th Quintile	-0.0115 (0.0155)	-0.0133 (0.0155)	-0.0780*** (0.0182)	-0.0226 (0.0454)

SONS' MARITAL STATUS				
1st Quintile	0.0003 (0.0247)	0.0032 (0.0247)	0.0183 (0.0223)	0.0160 (0.0319)
2nd Quintile	-0.0156 (0.0263)	-0.0200 (0.0263)	0.0024 (0.0225)	-0.0240 (0.0349)
3rd Quintile	-0.0228 (0.0251)	-0.0246 (0.0254)	-0.0207 (0.0228)	-0.1021** (0.0403)
4th Quintile	-0.0493* (0.0261)	-0.0519** (0.0263)	-0.0286 (0.0225)	-0.0726 (0.0490)
5th Quintile	-0.0371 (0.0272)	-0.0324 (0.0278)	0.0045 (0.0228)	-0.1806*** (0.0558)
SONS' NUMBER OF CHILDREN				
1st Quintile	-0.0922 (0.0960)	-0.0822 (0.0962)	0.0657 (0.0620)	0.1149 (0.0907)
2nd Quintile	0.0698 (0.1118)	0.0721 (0.1123)	0.0706 (0.0624)	0.0974 (0.1023)
3rd Quintile	-0.1108 (0.1089)	-0.1045 (0.1100)	-0.0747 (0.0622)	-0.2040* (0.1179)
4th Quintile	-0.1549 (0.1035)	-0.1649 (0.1046)	-0.0217 (0.0623)	-0.0744 (0.1674)
5th Quintile	0.0267 (0.1222)	0.0413 (0.1261)	-0.0634 (0.0625)	-0.2314 (0.1975)
N	3,182	3,109	4,934	1,639

Notes: See notes to Table A1.

**TABLE A3: RETURN TO FATHERS' OCCUPATION CATEGORIES
(RELATIVE TO LABORERS)**

	BLACK		WHITE	
	U.S.	South Only	U.S.	South Only
SONS' OCCUPATION INCOME SCORE RANK				
Return to White Collar Status	4.3883*** (0.6412)	3.9178*** (0.6750)	21.7760*** (0.1558)	29.2695*** (0.4159)
Return to Blue Collar Status	3.3726*** (0.2684)	3.3008*** (0.3200)	9.9445*** (0.1389)	12.7533*** (0.3786)
Return to Farm Ownership	-0.2565 (0.3270)	-0.2972 (0.3317)	2.5032*** (0.4424)	3.3950*** (0.7995)
Return to Cash Renting	-1.2147*** (0.2843)	-1.2246*** (0.2839)	0.2223 (1.5535)	2.9528 (2.3344)
Return to Share Renting	-0.7134** (0.2798)	-0.7609*** (0.2795)	-0.4923 (0.9528)	2.4331 (1.5049)
SONS' HOME OWNERSHIP (BINARY)				
Return to White Collar Status	0.0343** (0.0158)	0.0412** (0.0204)	0.0015 (0.0020)	-0.0047 (0.0050)
Return to Blue Collar Status	0.0182*** (0.0066)	0.0256*** (0.0088)	0.0010 (0.0018)	0.0002 (0.0046)
Return to Farm Ownership	0.0774*** (0.0141)	0.0802*** (0.0146)	0.0745*** (0.0068)	0.0736*** (0.0120)
Return to Cash Renting	0.0063 (0.0108)	0.0085 (0.0108)	0.0286 (0.0216)	0.0014 (0.0337)
Return to Share Renting	-0.0057 (0.0082)	-0.0042 (0.0082)	0.0266* (0.0140)	0.0161 (0.0219)
SONS' LITERACY (BINARY)				
Return to White Collar Status	0.1680*** (0.0168)	0.2113*** (0.0217)	0.0505*** (0.0012)	0.1461*** (0.0041)
Return to Blue Collar Status	0.0872*** (0.0089)	0.1035*** (0.0120)	0.0394*** (0.0011)	0.1131*** (0.0043)
Return to Farm Ownership	0.1178*** (0.0171)	0.1240*** (0.0180)	0.0416*** (0.0030)	0.1221*** (0.0081)
Return to Cash Renting	0.0410** (0.0174)	0.0451*** (0.0175)	0.0272** (0.0132)	0.0641** (0.0319)
Return to Share Renting	0.0346** (0.0138)	0.0390*** (0.0140)	0.0292*** (0.0081)	0.0884*** (0.0179)
SONS' LABORER STATUS (BINARY)				
Return to White Collar Status	-0.1135*** (0.0243)	-0.0864*** (0.0292)	-0.2457*** (0.0026)	-0.2619*** (0.0062)
Return to Blue Collar Status	-0.0886*** (0.0112)	-0.0570*** (0.0137)	-0.1851*** (0.0025)	-0.1729*** (0.0062)
Return to Farm Ownership	-0.1086*** (0.0183)	-0.1148*** (0.0189)	-0.0824*** (0.0080)	-0.0984*** (0.0145)
Return to Cash Renting	-0.0675*** (0.0172)	-0.0655*** (0.0173)	-0.0179 (0.0289)	-0.0698 (0.0444)
Return to Share Renting	-0.0856*** (0.0138)	-0.0831*** (0.0139)	-0.0236 (0.0179)	-0.1101*** (0.0270)
N	25,025	20,128	282,938	44,456

Notes: Table contains regression coefficient for occupation dummies, representing fathers' 1880 occupation category, and are interpreted relative laborer fathers. Sample includes all fathers with a recorded occupation. Regressions also include fixed effects for sons' age in 1900, fathers' age in 1880, fathers' urban status, and fathers' 1880 state fixed effects.

**TABLE A4: RETURN TO FATHERS' OCCUPATION CATEGORIES
(RELATIVE TO LABORERS), OTHER OUTCOMES**

	BLACK		WHITE	
	U.S.	South Only	U.S.	South Only
SONS' STATE-TO-STATE MIGRATION				
Return to White Collar Status	0.0775*** (0.0209)	0.0712*** (0.0254)	0.0672*** (0.0025)	0.0480*** (0.0058)
Return to Blue Collar Status	0.0176** (0.0088)	0.0285*** (0.0110)	0.0262*** (0.0022)	0.0322*** (0.0055)
Return to Farm Ownership	-0.0270** (0.0124)	-0.0228* (0.0127)	-0.0441*** (0.0065)	-0.0398*** (0.0114)
Return to Cash Renting	-0.0210* (0.0118)	-0.0183 (0.0118)	0.0094 (0.0251)	0.0491 (0.0411)
Return to Share Renting	-0.0351*** (0.0090)	-0.0308*** (0.0090)	0.0078 (0.0157)	0.0169 (0.0237)
SONS' INTER-REGIONAL MIGRATION				
Return to White Collar Status	0.0256* (0.0134)	0.0253 (0.0167)	0.0405*** (0.0017)	0.0406*** (0.0039)
Return to Blue Collar Status	0.0197*** (0.0065)	0.0317*** (0.0085)	0.0157*** (0.0014)	0.0265*** (0.0038)
Return to Farm Ownership	-0.0159** (0.0074)	-0.0122 (0.0075)	-0.0087** (0.0042)	-0.0042 (0.0073)
Return to Cash Renting	-0.0188*** (0.0059)	-0.0169*** (0.0059)	0.0094 (0.0156)	0.0225 (0.0218)
Return to Share Renting	-0.0147*** (0.0055)	-0.0125** (0.0055)	-0.0104 (0.0092)	0.0044 (0.0118)
SONS' WHITE COLLAR STATUS				
Return to White Collar Status	0.1026*** (0.0165)	0.0872*** (0.0185)	0.4329*** (0.0026)	0.4518*** (0.0061)
Return to Blue Collar Status	0.0150*** (0.0045)	0.0098** (0.0050)	0.1008*** (0.0022)	0.0958*** (0.0051)
Return to Farm Ownership	0.0061 (0.0056)	0.0072 (0.0059)	0.0287*** (0.0064)	0.0311*** (0.0101)
Return to Cash Renting	-0.0017 (0.0043)	-0.0019 (0.0044)	0.0122 (0.0193)	0.0325 (0.0292)
Return to Share Renting	-0.0009 (0.0035)	-0.0011 (0.0035)	0.0008 (0.0116)	-0.0031 (0.0166)
SONS' BLUE COLLAR STATUS				
Return to White Collar Status	0.0624*** (0.0206)	0.0692*** (0.0239)	-0.1199*** (0.0028)	-0.0257*** (0.0055)
Return to Blue Collar Status	0.1488*** (0.0101)	0.1463*** (0.0123)	0.1332*** (0.0026)	0.1950*** (0.0058)
Return to Farm Ownership	-0.0099 (0.0113)	-0.0029 (0.0116)	-0.1508*** (0.0065)	-0.0486*** (0.0100)
Return to Cash Renting	-0.0272*** (0.0095)	-0.0249*** (0.0095)	-0.1150*** (0.0222)	-0.0162 (0.0316)
Return to Share Renting	-0.0145* (0.0082)	-0.0119 (0.0082)	-0.1122*** (0.0142)	-0.0062 (0.0207)

SONS' MARITAL STATUS				
Return to White Collar Status	-0.0374*	-0.0527**	-0.0692***	-0.1419***
	(0.0213)	(0.0256)	(0.0027)	(0.0065)
Return to Blue Collar Status	-0.0249**	-0.0273**	-0.0190***	-0.0596***
	(0.0101)	(0.0125)	(0.0025)	(0.0061)
Return to Farm Ownership	-0.0308*	-0.0362**	-0.0015	-0.0448***
	(0.0162)	(0.0166)	(0.0078)	(0.0138)
Return to Cash Renting	0.0124	0.0091	-0.0091	-0.0121
	(0.0147)	(0.0148)	(0.0265)	(0.0365)
Return to Share Renting	0.0129	0.0090	-0.0014	-0.0135
	(0.0119)	(0.0120)	(0.0170)	(0.0276)
SONS' NUMBER OF CHILDREN				
Return to White Collar Status	-0.2119***	-0.3182***	-0.2800***	-0.4733***
	(0.0654)	(0.0778)	(0.0070)	(0.0183)
Return to Blue Collar Status	-0.1172***	-0.1629***	-0.0876***	-0.2042***
	(0.0315)	(0.0410)	(0.0064)	(0.0174)
Return to Farm Ownership	0.1097*	0.1168*	-0.0301	-0.0476
	(0.0633)	(0.0661)	(0.0200)	(0.0396)
Return to Cash Renting	0.1085*	0.1012*	-0.0906	-0.0922
	(0.0583)	(0.0585)	(0.0730)	(0.1288)
Return to Share Renting	0.1593***	0.1505***	-0.0477	-0.0673
	(0.0473)	(0.0474)	(0.0440)	(0.0737)
N	25,025	20,128	282,938	44,456

Notes: See notes to Table A3.

APPENDIX II. DATA APPENDIX

a. LINKED SAMPLE

We begin with the 1880 full count sample, originally provided by the North American Population Project (MPC 2017; Ruggles 2015). We restrict the sample to all males aged 0 to 17 in 1880 living in the same household as their father or stepfather, regardless of whether the father was a household head. We do restrict the sample to include only sons who are household heads in 1900.

Our linking methodology follows the advice of Bailey et al. (2020). We link the 1880 sons to the 1900 selves using two distinct methods and then define our analysis sample as the intersection of those two census-to-census linked samples. From Bailey et al., “to the extent that different methods make errors for different reasons, taking the set of common links helps avoid idiosyncratic reasons for errors” (Bailey et al. (2020), p. 1038).

The two linking methods we employ are well-known in this literature. The first, based on Ferrie (1996) and executed using code from Bailey and Cole (2019), links on name, place of birth, race, and age. Links are accepted if ages match within a 5-year window, and we use actual names rather than NYSIIS variants. Matches are accepted in this methodology if they are unique and exact based on last name, first four letters of first name, and (if provided) middle initial. This method prioritizes matches based on age; for a given individual, if there are more than 10 potential matches based on name, birthplace, and race, the case is dropped. If there are 10 or fewer potential matches but greater than one potential match, the potential match which most closely matches on age is selected. Ties result in no match.

The second methodology is based on Abramitzky, Boustan, and Eriksson (2014), executed using code provided by the authors (hereafter, ABE).¹ In this method, matches are made based on the same set of characteristics as before: name, place of birth, race, and age, but we employ NYSIIS coding of names rather than actual names.² We use the ABE methodology for robustness, which restricts the set of linked names to those that are unique within +/- 2 years of age. Matches are exact matches only, meaning they must match on last, first, and (if provided) middle initial NYSIIS codes to be included in the linked sample.

The analysis sample for this paper is the intersection of these two matched samples. Samples constructed in this way carry a substantially lower match rate than single-method match processes

¹ Available at <https://ranabr.people.stanford.edu/matching-codes>.

² By incorporating NYSIIS codes in one methodology and actual name strings in the other, our approach may be more robust to false matches.

alone. Black match rates are 8.40% using the Ferrie method and 7.60% using the ABE method. The intersected sample of Black sons has a match rate of 3.40%. White match rates are 13.8% using the Ferrie method and 15.3% using the ABE method. The intersected sample of White sons has a match rate of 9.50%. The Data Appendix to Collins and Wanamaker (2022) provides additional discussion of the qualities of the intersected sample.

To generate a final analysis sample that is representative of the 1880 population from which our initial data derive, we use propensity-based reweighting techniques, as recommended by Bailey et al. (2020). We employ a simple probit estimator for whether an individual was successfully matched to the 1900 Census where the probability is specified as a function of region of residence dummies, urban residence, 1880 city population, and age. The analysis sample is then re-weighted using inverse probability weights that downweight observations with a high probability of being matched to the 1900 census and upweight observations with a low probability of being matched. (See Table A.1. of Collins and Wanamaker (2022) for additional information.)

b. IMPUTING MISSING OCCUPATIONS FOR SONS OBSERVED IN 1900

The 100 percent Census samples provided to NBER From IPUMS have incomplete occupation coding. 13.1 percent of occupation codes are missing in the 1900 matched sample, but far fewer are missing occupation strings in the transcribed data. These omissions appear to be related to the presence or absence of an industry string or industry code. We assigned occupation codes to occupations using an algorithm based on the modal codes for other individuals with the same occupation string. Our method uses plurality-based coding, assigning occupation codes to occupation strings based on the most common IPUMS-assigned code for other individuals with the same occupation string. Observations with occupations still uncoded were then dropped from the analysis sample.

c. 1880 AGRICULTURE CENSUS LINK

The 1880 Census of Agriculture manuscripts contain a wealth of information that informs our analysis. For each farm property, the farm's operator is listed along with information on whether that operator is an owner, "rents for fixed money rental", or "rents for share of product". Acreage for each property is listed as tilled or unimproved, and acreage is further split between tilled acres that are in rotation that which is "permanent meadow, permanent pasture". Unimproved acreage is divided between "woodland and forest" and "other unimproved". Enumerators elicited the value of the farm itself (including land, fences, and buildings), the value of farming implements and machinery, and the

value of livestock. The enumerators also inquired about the estimated value of farm production, the production volume for each crop, the amount of labor hired, and costs of inputs. We use information on tenure (owner versus renter categories), farm value, livestock value, and farm acreage to derive the results in this paper. Assuming that the tenure designation is correct, we would argue that small errors in reported acreage and value are unlikely to confound our analysis very much since we array the data by quintiles. To the extent families are sorted into an incorrect quintile at random, it would tend to flatten the observed relationship between sons' and fathers' status.

This requires making links of farmers (who are fathers to sons 0-17) from the 1880 Census of Population records to the Census of Agriculture records, which are separate. Specifically, using the 1880 to 1900 linked sample of sons as the analysis sample, we take the additional step of linking a random subset of farming fathers to the 1880 Census of Agriculture. Only individuals who reported an occupation of "farmer" are included in the Census of Agriculture linkage process, and we restrict our work to fathers living in states with indexed, searchable Census of Agriculture files on Ancestry.com. The sets of searchable and unsearchable states are similar on a variety of agriculture sector metrics, including share of owner-operated farms (Collins and Wanamaker 2022).

Before searching for matches in the Census of Agriculture, we randomly sorted the farmers in our analysis sample for linking, and we oversampled Black farmers. Our linked sample includes 5,708 white farmers and 3,605 black farmers. To account for the random sampling procedure among farmers, we add an additional component to the sample probability weights described above. Each black farmer in our Ag Census linked sample represents $B/3,605$ farmers and each White farmer represents $W/5,708$ farmers where B and W represent the number of Black and White farmers, respectively, in the 1880 population census to 1900 population census linked sample.³ We multiply the probability sampling weights by these representation weights to generate final analysis weights.

There are several reasons one might not find a farmer in the agricultural census. Names might be transcribed differently from the population and agricultural census records; "farmers" in the population census might not have been the sole operator (the agricultural census lists only one); enumerators might not have completed a schedule for the farm or it might not have been preserved; or we might have missed a farmer who is actually in the manuscripts somewhere. Our procedure implicitly assumes individuals who are unsuccessfully linked to the 1880 Census of Agriculture are missing at random.

³ Our analysis sample is further reduced by incomplete/illegible agriculture census images (145 in total) and by missing occupations for fathers or for sons. The final sample sizes are contained in Tables A1 (farmers only) and A3 (all father occupations).

d. ASSIGNMENT OF INCOME SCORES AND INCOME SCORE RANKS

One measure of sons' outcomes in 1900 is based on an occupational income score, which is then ranked. We assign this score based on the individual's occupation, region of residence, gender, and race. Income scores are derived from a combination of information on earnings from the 1940 (full count) and 1960 (5% sample) Census of Population data. Note that the 1940 Census was the first to inquire about annual earnings. If imputations would be based on fewer than 50 underlying earnings observations, we drop the location/region covariate from the procedure. If the problem persists, we create cells based on one-digit rather than three-digit occupation. Our approach is similar in spirit to the *occscore* variable that is widely available in IPUMS samples (Ruggles et. al 2015), but incorporates the additional considerations of race, gender, farm tenure, and location. These additional covariates provide valuable information for understanding intergenerational transmission of status (e.g., Inwood, Minns, and Summerfield 2019; Ward 2023, Saavedra and Twinam 2020).

The 1940 Census provides a valuable, but incomplete, record of earnings. Unfortunately, earnings from self-employment, including farming, were excluded. We assign incomes to self-employed individuals who are *not* farmers using the 1960 Census enumeration where earnings of wage and salary workers *and* self-employed workers are available. The ratio of income for self-employed relative to wage and salary workers within an occupation in the 1960 Census gives us a multiplier, which we then apply to wage and salary income for each race/gender/region/occupation cell from the 1940 Census to estimate income for self-employed workers in that year.

For farmers, our method reflects both differences between renters and owners and the value of perquisites enjoyed by farm residents. For farming sons in 1900, we use the *home ownership* variable in the Census of Population to identify likely farm owners. To rank farmers' income (both owners and renters) relative to individuals in our sample with non-farming occupations, we require a 1940-based occupational income score. We derive an estimate, separately for owners and renters and by race, gender, and region of residence, by assuming that the ratio of farmer (owning and non-owning) income to farm laborer income is constant between 1940 and 1960, and then exploiting the fact that farm laborer income is available in 1940 and 1960 and farmer income (owning and non-owning) is available in 1960. In estimating these values, we use the all-inclusive income of farmers and farm laborers, including the value of perquisites as discussed below.

Farm laborer incomes are reported in the 1940 and 1960 Census of Population enumerations. For the 1940 income observations, we scale up reported incomes for farm laborers by the ratio of perquisites and cash wages to cash wages alone in 1939 (equal to 1.26), as reported in the 1957 USDA report *Major Statistical Series of the U.S. Department of Agriculture: Volume 3, Gross and Net Farm*

Income (Table 7).⁴ We use this scaling factor to scale up the 1940-based occupation income score for each race, gender, and region of residence. We repeat this exercise for 1960 farm laborer income observations using the last available year of the same USDA report, 1956. For the 1960 calculation, the ratio is 1.19.

Farmer incomes in 1960 are available in the population schedules, and we derive perquisite values (1956 based) from the same USDA report cited above. Farmer perquisite rates are more volatile year-to-year, so we use additional sources to smooth the rate between 1956 and 1959. In the end, we calculate a perquisite-included income ratio for farmers in the 1960 Census of 1.35. Combining all of this information allows us to estimate the 1940 income of owning and non-owning farmers, inclusive of perquisites, to anchor an occupational income score. For farm managers in all years, we estimate a perquisite rate as the average of farmers and farm laborers: 34% in 1940 and 27% in 1960.

⁴ We divide “Value of Perquisites – TOTAL” by “Cash Wages + Value of Perquisites – TOTAL” to calculate the perquisite rate. See Volume 3, Table 7.

REFERENCES

- Abramitzky, Ran, Leah Platt Boustan, and Katherine Eriksson. 2014. "A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration." *Journal of Political Economy* 122, 3: 467-506.
- Bailey, Martha J. and Connor Cole. *Autolink.ado*. Ann Arbor, MI: Inter-University Consortium for Political and Social Research [distributor], 2019-06-13.
- Bailey, Martha, Connor Cole, Morgan Henderson, and Catherine Massey. 2020. "How Well Do Automated Linking Methods Perform in Historical Samples? Evidence from US Historical Data." *Journal of Economic Literature* 58, 4: 997-1044.
- Collins, William and Marianne H. Wanamaker. 2022. "African American Intergenerational Mobility since 1880." *American Economic Journal: Applied* 14, 3: 84-117.
- Ferrie, Joseph P. 1996. "A New Sample of Males Linked from the Public Use Microdata Sample of the 1850 US Federal Census of Population to the 1860 US Federal Census Manuscript Schedules." *Historical Methods* 29, 4: 141-156.
- Inwood, Kris, Chris Minns, and Fraser Summerfield. 2019. "Occupational Earnings Scores and Immigrant Assimilation: Evidence from the Canadian Census." *Explorations in Economic History* 72 (April): 114-122.
- Minnesota Population Center. 2017. *North Atlantic Population Project: Complete Count Microdata. Version 2.3* [dataset]. Minneapolis: Minnesota Population Center. <http://doi.org/10.18128/D040.V2.3>.
- Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. 2015. *Integrated Public Use Microdata Series: Version 6.0* [database]. Minneapolis: University of Minnesota. <http://doi.org/10.18128/D010.V6.0>.
- Saavedra, Martin and Tate Twinam. 2020. "A Machine Learning Approach to Improving Occupational Income Scores." *Explorations in Economic History* 75.
- U.S. Department of Agriculture. 1957. *Major Statistical Series of the U.S. Department of Agriculture*. Volumes 3 and 7. Washington, DC: Government Printing Office.
- Ward, Zachary. 2023. "Intergenerational Mobility in American History: Accounting for Race and Measurement Error." NBER Working Paper 29256.