The Geography of Opportunity after the Civil War:

Black and White Americans' Intra- and Intergenerational Mobility into Property Ownership

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April 2025

Abstract: We shed new light on historical black-white disparities in wealth and economic mobility by examining datasets of linked census records. First, we compare black and white men's intra- and inter-generational mobility into property ownership between 1870, the first census taken after the Civil War, and 1900. Conditional on not owning property in 1870, black men's mobility rate into property ownership was far lower than white men's. If black men's post-1870 mobility had mirrored that of landless white men, the black-white home ownership gap in 1900 would have been small. Second, we show that for black men located in cotton-intensive counties in 1870, the likelihood of owning property in 1900 was far lower than for black men located elsewhere. This is apparent in national samples as well as in samples restricted to the states of the former Confederacy, with and without extensive controls. This pattern is connected to the prevalence of sharecropping and relatively high black population shares. For white men, the difference in upward mobility between cotton-intensive and other areas was much smaller or non-existent. Many black households did acquire land and homes of their own in this era, an important channel for economic advance, but racism and discrimination slowed their mobility into property ownership.

Keywords: Mobility, Cotton, Race, Civil War, Homeownership, Sharecropping

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1. Introduction

Although 160 years have passed since the end of the American Civil War, the economic ramifications of slavery and the Reconstruction Era (1865-77) are still engrained in large racial disparities in income, wealth, health, and other measures of well-being. In 1870, the first census taken after the Civil War, only 7 percent of black household heads owned land, reflecting the prevalence of slavery before the Civil War and the federal government's decision against distributing resources to freedpeople after the war.[1] From this starting point, black Americans accumulated substantial wealth holdings by 1900, primarily in the form of home and farm ownership (Du Bois 1901, Higgs 1982, Margo 1984, Schweninger 1990). Cross-sectional data sources show that black households narrowed the gap in home ownership and wealth relative to white households after 1870 (Collins and Margo 2011, Derenoncourt et al. 2024), despite the rise of the "Jim Crow" regime of disenfranchisement and segregation. New data resources enable a deeper understanding of this era by providing direct views of economic mobility and the dynamics of racial disparities.

In this paper, we analyze individual-level datasets of linked census records to uncover the intra- and inter-generational movement of black and white men into property ownership between 1870 and 1900, and to highlight spatial variation in this mobility. The 1870 census was the first taken after the emancipation of the enslaved population. It was, therefore, the first to enumerate the entire black population by name, which enables linkage with later census records. Emancipation entailed no permanent redistribution of land or wealth to those formerly enslaved. Instead, the vast majority of the black population entered the post-war era with few economic resources apart from their ability to supply labor to the market. In an era and region dominated by agriculture, black Americans made the acquisition of land a priority (Du Bois 1901, Foner 1988). Ownership of land provided not only a source of income, but also a source of independence from white employers, many of whom had enslaved black workers before the war and sought to re-assert white dominance afterwards. Black households' acquisition of real property was an important first step toward narrowing racial disparities in wealth and material well-being, despite the context of eroding civil and political rights.

To develop evidence on transitions into property ownership, we examine census records for the same individual observed at two points in time (Abramitzky et al. 2020, Zimran 2022).[2] The

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[1] This figure is calculated from the 1870 census microdata using the *realprop* variable for household heads. More than 90 percent of the black population was enslaved in 1860. See Cox (1958), Oubre (1978), Foner (1988), and Ransom (2005) for discussions of unsuccessful proposals for land redistribution.

[2] See Bailey et al. (2020) and Abramitzky et al. (2021) for discussion of the opportunities and challenges of automated record linkage. We confirm our main results under two independent linking algorithms.

1

datasets are large enough to characterize variation in mobility rates by county of origin. This level of geographic detail has not been examined in prior work on property ownership and economic mobility in the late nineteenth century. For *intra*-generational analyses, we examine outcomes in 1900 for men who were ages 18 to 40 in 1870. More than 90 percent of black men in this age group were born into slavery.[3] The analyses reveal how their quest for property ownership unfolded and varied with their personal characteristics and local environment. For the *inter*-generational analyses, we focus on males, ages 0 to 18, who were living with a parental head of household in 1870. This analysis allows us to characterize each household's economic situation in 1870 and the strength of its association with the son's outcome in 1900.[4]

We first show that black men's mobility rate into property ownership fell far below that of white men and that this racial mobility gap was consequential. A simple counterfactual based on mobility matrices illustrates that the black-white gap in home ownership rates would have been nearly eliminated in a single generation if black men had transitioned from "no property" in 1870 to "home owner" in 1900 at the same rate as similarly aged white men.[5] In practice, aggregate black and white home ownership rates have never come within 20 percentage points of each other (Collins and Margo 2011, appendix table 2). In this sense, differences in upward mobility rates into property ownership have underpinned more readily observed black-white cross-sectional disparities. This motivates a deeper analysis of the microdata.

The most striking finding that emerges from the microdata is that the rate of mobility into property ownership was far lower for black men who resided in counties that were intensive in the production of cotton than for black men living elsewhere. This pattern stands out in both the nationwide dataset and when the sample is restricted to men residing in states of the former Confederacy.[6] Moreover, it is evident in both intra- and inter-generational analyses, and with or without conditioning on sub-regional fixed effects and a rich set of individual, family, and local characteristics. For white men, this pattern is much weaker and less robust; thus, the mobility disadvantage in cotton-intensive areas was specific to black men.

Considering mechanisms, proximate evidence points to the prevalence of sharecropping or tenancy among black men in such areas. Sharecropping was a salient characteristic of cotton-

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[3] Calculated from Haines (2006) for males, ages 10-29, in 1860.
[4] Linking women from childhood to adulthood is difficult due to name changes at marriage.
[5] The 1870 census has information on real estate property values, and the 1900 census has information on home ownership. We discuss this in more detail in the "data" section.
[6] Our baseline "cotton intensive" counties are those that produced more cotton per capita in 1870 than the median southern county. Results also go through with a higher threshold for "cotton intensive."

intensive areas, a rung on the agricultural "tenure ladder" beyond which many black men (and some white men) did not ascend.[7] Wright summarizes: "Sharecropping was a balance between the freedmen's desire for autonomy and the employer's interest in extracting work effort and having labor when it was needed," within a context of scarce credit and crop lien laws that were unfavorable toward sharecroppers (1986, p. 86-87, 102). Of course, this also reflects the limits on black workers' economic opportunities outside southern agriculture due to discrimination in both northern and southern labor markets.

Further investigation shows that cotton-intensive counties in 1870 were *not* strongly differentiated within the South in terms of having especially valuable farmland, concentrated real estate wealth, low rates of black literacy, low rates of post-1870 black out-migration, or low levels of wages. Rather, the most striking difference was in the share of the county's population that was black. One simple interpretation of this pattern is that even though *some* black men were able to purchase property from white landholders in these areas, a relatively small *share* of black men found willing sellers and financing. Combined with other features of sharecropping and limited outside opportunities mentioned above, this implied a bottleneck to black property ownership in cotton-intensive areas.

Finally, the micro-level analyses allow us to address other important themes in the economic history of this era through the lens of home ownership. We investigate the potential roles of the presence of federal Army units and the strength of Republican voting during Reconstruction in promoting upward mobility into property ownership. The results are mixed and, for the most part, muted. Within the former Confederacy, the presence of military personnel circa 1870 and Republican vote shares in 1872—variables reflecting federal protections for the black population—are only weakly correlated with black men's likelihood of mobility into property ownership after 1870. The temporary protection federal troops provided, which was necessary but geographically uneven (Downs 2015), does not appear to have left a solid basis for black upward mobility, though more research is merited on these questions.[8]

This paper contributes to several branches of research. First, it contributes to the economics literature on intergenerational mobility patterns, their role in perpetuating racial inequality, and their

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[7] Many white households were sharecroppers and tenants in this era, but they comprised a much smaller portion of the white labor force and their mobility rate into ownership was much higher than black men's.
[8] This is consistent with research that shows a reversal of black civil rights and local political influence as Reconstruction ended and white southerners established a new regime racial oppression (Logan 2020, Chacón and Jensen 2020, Logan 2023). Of course, troops were not randomly distributed, and so we do not assign a causal interpretation to these correlations.

unevenness across places (Davis and Mazumder 2018, Chetty et al. 2020, Althoff and Reichardt 2023, Derenoncourt 2022).[9] Recent research has uncovered a high degree of geographic variation in intergenerational mobility rates across the United States, as well as changes in the geography of mobility over time (Connor and Storper 2020, Tan 2023). Documenting and analyzing this variation can clarify the forces that have shaped cross-sectional inequality in each generation. Relative to this literature, our paper features a novel *intra*-generational perspective to complement its inter-generational findings, focuses on black-white differences in property ownership (rather than occupational status, which is more commonly studied in historical settings), and emphasizes how local agricultural conditions shaped opportunities for upward mobility at a time when agriculture was the dominant economic activity. Collins, Holtkamp, and Wanamaker (2024) is most similar in spirit to this paper. That paper studies inter-generational mobility between 1880 and 1900 but with smaller samples due to its reliance on manuscripts from the census of agriculture and with less ability to measure local correlates of mobility. It does not address freedmen's movement into property ownership (i.e., *intra*-generational mobility), does not draw upon the personal and real estate wealth information that is available in the 1870 census, and has little to say about how patterns of agricultural specialization coincided with patterns of upward mobility.

Second, the paper contributes to the literature on racial disparities in wealth in the United States, in which the history of land and home ownership plays a key role (*inter alia,* Du Bois 1901, DeCanio 1979, Higgs 1982, Margo 1984, Spriggs 1984, Oliver and Shapiro 1995, Schweninger 1990, Nier 2008, Baradaran 2017, and Derenoncourt et al. 2024, Penningroth 2023). By starting in 1870, we begin with the first generation of post-Civil War black families, many of whom accumulated wealth despite the headwinds of deteriorating civil rights, pervasive discrimination, and violence. By basing our analyses on micro-level datasets for black and white families, we offer a more detailed mapping of transitions into property ownership during the late nineteenth century than was previously available. These micro-level flows into and out of property ownership, which were invisible to scholars until quite recently, are the building blocks of population-level disparities. By focusing on mobility into property ownership by those who held no property in 1870, our paper offers a perspective on postbellum southern wealth that complements recent work on the southern white elite (Dupont and Rosenbloom 2018, Ager et al. 2019).

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[9] For studies on black-white differences in intergenerational mobility that are less focused on geographic variation, see Duncan (1968), Featherman and Houser (1976), Hout (1984), Darity et al. (2001), Hertz (2005), Bhattacharya and Mazumder (2011), Margo (2016), and Collins and Wanamaker (2022). For studies of black intergenerational mobility that reach back to the nineteenth century, see Sacerdote (2005) and Miller (2020).

Third, the paper contributes to the long-running economics literature on the South's economic under-development in contrast to the rapid structural transformation occurring elsewhere (Woodward 1951, Nicholls 1960, Higgs 1977, Ransom and Sutch 1977, Cobb 1982, Jaynes 1986, Wright 1986, Caselli and Coleman 2001, Hornbeck and Naidu 2014, Jung 2020). After the Civil War, cotton production expanded and dominated the South's exports, though there was substantial geographic heterogeneity within the region. Elsewhere in the US, industrialization, urbanization, and mass immigration from Europe were hallmarks of a rapidly transforming economy. Comparatively little is known about the individual-level and generation-to-generation transitions that underpinned the era's structural change (or, in some places, lack thereof) and its persistent racial disparities. In this paper, our window centers on opportunities for mobility into property ownership. But this specific story unfolds in the broader context of American industrial ascendancy, regional divergence, and racial discrimination. All these forces come into play through the nationwide dataset we have assembled and have a role in interpreting the results.

Last, and more generally, this study illustrates how minority groups' economic prospects may be hindered in settings where war has brought forth a new but fragile set of economic and political institutions. Bynam (2021) notes that "In different guises, the dynamics of Reconstruction appear around the world when, after a civil war, the victor seeks to change the political system and society of the war's loser" (p. 56). Glaeser (2005) cites rising anti-black rhetoric after the US Civil War as "Example No. 1" is his model of the "political economy of hatred." Downs (2015) describes widespread southern white resistance to federal policy and black empowerment. Consequently, black Americans' civil and political rights eroded as the federal government's protection receded (Du Bois 1935, Franklin 1961, Foner 1988, Logan 2020 and 2023, Chacón and Jensen 2020). Du Bois (1901), Penningroth (2023), and other scholars have emphasized that black Americans were determined to better their economic situation through land ownership, thus availing themselves of property rights even when other rights eroded. Our analyses show that gaining ground was an uphill climb, especially in areas where cotton cultivation was prevalent.

2. Background and Historical Context

At the conclusion of the Civil War, American policymakers faced fundamental questions regarding the Confederate states' political reintegration and freedpeople's rights and resources. These questions were intertwined and addressed in the Constitution's Thirteenth, Fourteenth, and Fifteenth Amendments and related legislation, in what Foner has characterized as a "…first attempt, flawed but truly remarkable for its time, to build an egalitarian society on the ashes of slavery" (2019, p.

xix). For a time, black Americans, about 90 percent of whom resided in the South, were able to exercise their newly won political rights, electing hundreds of black officeholders in the late 1860s and 1870s (Du Bois 1935, Foner 1996). But as federal influence waned and white southerners regained political power, they rolled back black southerners' political rights and reversed Reconstruction-era policies that black voters and politicians had championed (Logan 2020). Violence against black Americans and their political allies was common in the South throughout the period we study (Egerton 2014, Downs 2015, Logan 2022), and the Jim Crow regime of disenfranchisement and rigid segregation spread and intensified (Woodward 1955, Kousser 1974).

Du Bois pointed out that "one of the greatest problems of emancipation in the United States was the relation of the freedmen to the land" (1901, p. 647). Congress created the Freedmen's Bureau in 1865, including authorization to divide confiscated and abandoned lands in the former Confederacy into 40-acre plots for rent and eventual sale (Oubre 1978, p. 21).[10] A year later, Congress passed the Southern Homestead Act, offering publicly held land for private settlement in five southern states, again with the idea of assisting freedpeople in their quest for landownership. Neither initiative succeeded in conveying land to many black Americans. President Andrew Johnson undermined the Bureau's efforts to settle black families on farms of their own by issuing pardons to wealthy supporters of the Confederacy, thereby restoring their sizable landholdings.[11] The Southern Homestead Act was unsuccessful for many reasons, including the low quality of available land, land offices that were poorly staffed and operated, and the black population's lack of financial resources to support themselves while starting a new farm (Oubre 1978, pp. 183-188).[12]

Instead of becoming a large new class of yeoman farmers under a policy of widespread land redistribution, most freedmen worked on farms owned by southern white families, either as wage laborers or sharecroppers. In 1870, 71 percent of all southern black men between the ages of 18 and 60 were enumerated as laborers in the census returns (agricultural or general labor); 17 percent were

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[10] The First and Second Confiscation Acts (1861 and 1862) allowed the president to seize the land and free the enslaved of disloyal southerners whose property came under control of the Union Army, providing a legal basis for the government's wartime acquisition of privately held southern land. A feature of this legislation, which undermined efforts to redistribute land permanently, was a provision that limited confiscation to the lifetime of the landowner and, therefore, did not convey clear title to the government (Oubre 1978, p. 3).

[11] In July of 1865, the Bureau had issued "Circular No. 13," which instructed Bureau agents to set aside 40-acre tracts for freedmen. Johnson, however, had the Bureau rescind Circular No. 13 and issue Circular No. 15 (September 1865), which clarified that lands would be restored to former Confederates who received pardons, except for a small amount of land that had been sold under court decree (Foner 1988, p. 159).

[12] Once recognized as US citizens under the Fourteenth Amendment, homesteading elsewhere in the US under the 1862 Homestead Act was possible in theory, but relatively few freedmen pursued homesteading opportunities far from the South (Edwards et al. 2019). See also Muhammad et al. (2023).

enumerated as farmers, but approximately 90 percent of these farmers did not own land (i.e., their real estate assets were listed as zero). Most probably worked as sharecroppers. In time, sharecropping became a prevalent form of tenure in southern agriculture (Woodson 1930, Higgs 1974, Ransom and Sutch 1977, Reid 1979, Wright 1986). In exchange for access to land and various provisions, sharecroppers agreed to pay the landowner a share of the crops produced, with the terms of the contract depending on the amount of capital (e.g., mules) and expertise the farmer possessed.[13] Alongside the rise of sharecropping, cotton production expanded; by 1900, total cotton output had risen by nearly 80 percent compared to 1860 (Olmstead and Rhode 2006). Indeed, one of the strongest continuities between the southern economy before and after emancipation was the enduring importance of cotton agriculture, albeit under different economic and political institutions.

Despite the rollback of their political and civil rights, black Americans made significant gains in literacy and property ownership in the later decades of the nineteenth century. Rising from very low rates at the time of emancipation, by 1900, census microdata samples indicate that more than 20 percent of male household heads owned their homes and more than 50 percent of the black population was literate (age 10-69).[14] Black income per capita, however, remained far below that of white Americans: Margo (2016) estimates that the ratio of black/white income per capita was about 0.28 in 1870 and 0.32 in 1900. This reflected the relative underdevelopment of the South compared to the non-South, the low levels of human, financial, and physical capital owned by the black population after slavery, and the limited opportunities for economic advancement due to widespread discrimination. Yet it is notable that black Americans raised their level of income at a faster rate than white Americans in this period. Engerman observed that such gains belie, "…the impression of complete domination and exploitation by landlords and/or merchants" (1980 p. 496). Black Americans' gains in property ownership were both a cause and consequence of their income gains; moreover, recent research suggests that land ownership aided in intergenerational advances in literacy in this period (Miller 2020, Collins, Holtkamp, and Wanamaker 2024). The simultaneous rise of Jim Crow policies and black property ownership may seem incongruous. Penningroth (2023 p. 51), however, emphasizes that "…even as whites fought to deny Black people the right to vote, to

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[13] Higgs (1977) reports that "By the 1870s, tenants who provided only labor normally received one-half of the crops plus a cabin, fuel, and garden plot" (1977, p. 49). Alston and Kaufmann (1998) point out that croppers "…differed from other tenants in important respects, especially when he worked on a plantation. He was usually closely supervised; he made none of the major farming decisions; and he generally supplied no input besides labor services. In most southern states he had no legal possession of the land except the right of daily access at the landlord's pleasure" (p. 264). Also see Woodman (1995). In 1920 that the census of agriculture distinguished between share tenants and sharecroppers, but the manuscripts have been destroyed.
[14] The literacy figure is from Collins and Margo (2006). Homeownership is from Collins and Margo (2011).

hold office, to sit beside them in a theater or train, and more, almost nobody denied that Black people had contract and property rights." Many exercised those rights to advance their economic interests.

Scholars have offered contrasting views on black farmers' opportunities to become landowners in the late-nineteenth-century South. Based on ownership patterns in Coweta County, Georgia in 1878, Ransom and Sutch argued, "Clearly something other than mere poverty must explain the low level of black landownership," and later that, "The threat of violence did not completely prevent land sales to blacks, but it did substantially escalate the costs and risks faced by both the black buyer and the white seller" (1977, pp. 86, 87). Higgs offered a different view, arguing that in the 15 years after the Civil War, "Although some whites objected to black landownership and attempted to prevent it, such attempts generally failed" and that by the end of the century, "White hostility toward black landownership gradually waned as more and more blacks acquired land" (1977, pp. 52, 69). Instead, Higgs emphasized legal rather than private market channels for low rates of black land ownership: "…the attenuation of black property rights produced by the racial discrimination of legal authorities made investment in land less attractive than it would otherwise have been" (1977, p. 52).[15] Writing about a later period, Raper (1936) explained that black landownership, "…can be achieved only by means of a most exacting and highly selective procedure; the would-be owner must be acceptable to the white community, have a white sponsor, be content with the purchase of acreage least desired by the whites, and pay for it in a very few years" (quoted in Myrdal 1944, p. 241). In all these views, racism distorted economic interactions and depressed black property ownership and economic advancement. These channels, of course, are not mutually exclusive, and there is ample historical evidence of each.

Approximately 10 percent of black Americans resided outside the South in 1870, and their economic circumstances were, on average, quite different from those prevailing in the South. On the eve of the Civil War, few people were enslaved outside the South (except for Missouri), and some black families had been free for several generations (Litwack 1961).[16] Although subject to many forms of discrimination, black northerners were far more likely own real estate than black southerners. In 1870, approximately 25 percent of black male household heads owned real estate in

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[15] This does not square well with the quote from Penningroth (2023) cited above, though Penningroth does go on to point out that "…rather than simply take a Black person's horses or land, whites used brutal whippings and threats to coerce him to sign a contract of sale or a lease" (p. 98). Thus, the lack of personal protection could undermine property rights, even if those rights were legally acknowledged.

[16] The 1860 census enumerated nearly 115,000 enslaved in Missouri and less than 20 enslaved in each of New Jersey, Nebraska, and Kansas; all other northern states enumerated zero enslaved (Carter 2006, Table Bb1-98). See Berlin (1974) or Schweninger (1990) on the free black population of the South, which was approximately equal in size to the free population in the North in 1860.

the North compared to 5 percent in the South; moreover, approximately 56 percent could read and write in the North (ages 10-69), compared to 15 percent in the South.[17] Northern black men were also far less likely to be employed in agriculture than black men in the South (47 percent versus 85).

Much of the discussion in this paper is centered on the South, reflecting the black population's geographic concentration there. But for completeness, we always start with a national perspective on racial disparities in economic mobility. Doing so captures the experiences of both the relatively small northern black population and the relatively large northern white population. This scope is essential to seeing how racial differences in "initial conditions" and "mobility" added up to yield the national-level disparities that characterized the US at the turn of the twentieth century and beyond.

3. Dataset Construction: Linked Records, Sources, and Variable Definitions

We rely heavily on microdata from the 1870 and 1900 censuses of population (Ruggles et al. 2023). This choice of years has several advantages and reflects certain data constraints. The 1870 census was the first that attempted to enumerate the full population of black Americans on the same basis as white Americans. It is also the last census that collected information on the market value of real estate owned and personal wealth (other assets).[18] The 1870 dataset contains individual-level information on occupation, industry, literacy, school attendance, urban residence, farm residence, and county.[19] The 1900 census of population records are the earliest microdata source with information about home ownership. This variable is not as detailed as the real estate wealth variable that is available in 1870, though it is does distinguish property owners from non-owners.[20] The 1880 census of population did not inquire about home ownership or real estate wealth, and the 1890 census

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[17] Authors' calculation using the IPUMS-USA 1 percent sample for 1870.

[18] Enumerator instructions said that personal wealth below $100 should not be recorded, but often it was. We left the data "as is."

[19] There are questions regarding the quality of coverage in the 1870 census. See Hacker (2013), Ransom and Sutch (1977, p. 284), and Reid (1995) for discussion. For the purposes of our analyses, under-counting *per se* is not a major concern because we do not require accurate aggregate counts of the 1870 population. But there are (at least) two remaining concerns. (1) Biased enumeration would result in a linked sample that is unrepresentative of the population. This is partly addressed by the sample weights that are applied to the linked sample and based on population characteristics in the 1900 census. (2) Missing large numbers of men in the full count files might raise the error rate in linkage by increasing the number of men who appear to be unique and, therefore, eligible for linkage. We have selected a relatively conservative set of links ("ABE exact conservative") with the goal of having relatively high-quality data.

[20] The 1900 census also includes an indicator for whether owner-occupied housing is mortgaged or owned "free and clear." This is not sufficient to estimate home equity or observe the terms of any mortgage. In this period, purchases of property, even when mortgaged, usually required a large downpayment relative to the value of the property, implying that home owners in the census had positive real estate wealth.

manuscripts were destroyed.[21] Therefore, we do not rely on those data in this paper.

Linkage and weighting: Our core dataset is built using record linkage techniques that are now well established in the economic history literature. We build on publicly available crosswalks of the IPUMS variable *histid* provided by the Census Linking Project (Abramitzky et al. 2020), and we check the robustness of results using links made by Zimran (2022). The *histid* crosswalks are based on algorithms that search for unique matches of individuals in decennial census records at two points in time, relying on name, birthplace, and birth-year similarity in the restricted-access versions of the full count census records (Ruggles et al. 2021).[22] We merge the publicly available full count census records of 1870 and 1900 (Ruggles et al. 2023), including key individual-level variables, into the dataset of *histid* crosswalks. Because there is evidence of selection into linkage (i.e., linked samples are not randomly drawn from the base population), we calculate and employ inverse probability weights based on 1900 population characteristics.[23] In essence, this process adds weight to observations with characteristics that are under-represented in the linked data relative to the population in the full count census data. We focus on US-born males to avoid complications from immigrants' arrival, assimilation, and return migration. Nearly all black men in 1870 were US-born.

Mobility-into-ownership: In 1870, we code men as property owners if they report real property wealth of greater than $0 (or $100 to test sensitivity). In 1900, we code men as property owners if they are the household head (or spouse of head) *and* reside in owner-occupied housing; we code men as non-owners if they are not head of household (or spouse) *or* reside in a home that is not owner-occupied. For the purposes of this paper, given that emancipated black Americans placed a priority on gaining ownership of property and that few owned *any* real property in 1870, movement at the extensive margin of home ownership is economically important.

Figure 1 maps the county-level mobility rate into home ownership by 1900 among adult black and white men (18-40) who did not own real estate in 1870. This is key to our intra-generational analyses. Figure 2 maps similar information for the inter-generational sample of sons who resided with a parent head of household who did not own real property in 1870. We map the information for all counties in which we have at least 10 observations in the linked dataset, though all

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[21] See Collins, Holtkamp, and Wanamaker (2023) for evidence based on farm ownership drawn from manuscripts in the 1880 census of agriculture. The 1890 census of population inquired about home ownership, but the manuscripts were destroyed.

[22] Specifically, we use the "ABE Exact Conservative" links from the Census Linking Project.

[23] These are based on a probits for linkage (0-1) regressed on 1900 age bins (10-year intervals), 1900 occupation score bins (10-point intervals), 1900 literacy categories (na, illiterate, and literate), a 1900 urban residence dummy, and 1900 census division dummies. Probits are estimated separately by race.

men with linked records are used in the analyses below. The maps reveal a great deal of variation across space and race, which will be central to the paper's analyses.

Other county-level variables: We include each person's 1870 county-of-origin's economic, social, and political characteristics. We calculate some variables directly from the 1870 census of population microdata, including the county's total population, black population, urban population, and the share of all real estate wealth held by the top 10 percent of men. We draw other variables from the 1870 census of agriculture's published volumes, as reported in Haines, Fishback, and Rhode (2016), including crop production and farm values.

Cotton-intensive localities: Figure 3 maps cotton bales *per capita* for each county in the Confederacy, drawn from the 1870 census of agriculture. In most analyses, we classify a county as "cotton intensive" if its production of cotton bales per capita was above the median level for southern counties in 1870. This provides a simple but key distinction across counties within the South. In additional results, we examine the top quartile of cotton-intensity—which we call "very cotton intensive." We also provide binscatters of mobility outcomes plotted against county-level cotton per capita in the appendix.

Federal presence and voting: We use presidential election results from 1872 to characterize the relative strength of support for the Republican candidate (Ulysses S. Grant), an indicator of black voting and political power in the South (Clubb et al. 2006).[24] We use the 1870 census microdata to count the number of men with military occupation codes in each county. We create an indicator variable equal to one in counties with at least 10 men with military occupations. For an alternative view, we used data from Downs and Nesbitt (2015) to identify counties that had federal troops in place during Reconstruction.[25] We implement this as an indicator for federal troop presence at any time between 1871 and 1880 and (in a different specification) as the average number of federal troops present between 1865 and 1880.

4. Empirical frameworks

We begin by describing national-level, aggregate patterns of mobility into and out of property ownership between 1870 and 1900. We show this from both intra- and inter-generational perspectives. Since very few black men owned property in 1870, our emphasis is on their movement

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[24] Former Union Army General Ulysses S. Grant was, obviously, not a popular candidate among southern whites who had supported the Confederacy and sought to end federal intervention during Reconstruction.
[25] These data originate from a compilation of archival data sources that record the presence of federal troops at the locality-monthly level from 1865 to 1880 for the eleven former Confederate states and Kentucky.

into home ownership in 1900, which we refer to as "upward mobility."[26] We then compare black mobility patterns to those for the white population. Finally, within the black sample, we compare those in cotton-intensive counties to those elsewhere.

One way to summarize the importance of black-white differences in mobility patterns is by assigning the *white* 1870-to-1900 mobility rates to the black population circa 1870. To fix ideas, the actual black ownership rate in 1900 can be written as the weighted average of the mobility rate into ownership for those who did not own real property in 1870 (m_{blk}) and the persistence rate of those who already owned real property in 1870 (p_{blk}), where the weights pertain to the black population share that did *not* own in 1870 (α_{blk}) and the share that did ($1 - \alpha_{blk}$). We simply replace the black mobility and persistence rates with the white rates to calculate a counterfactual 1900 black ownership rate ($= \alpha_{blk} m_{wht} + (1 - \alpha_{blk})p_{wht}$). Using a similar approach, we assess differences within the black population according to whether the 1870 county of residence was cotton intensive. Each calculation provides perspective on the magnitude of racial or regional mobility gaps and their empirical importance in connecting disparities over time. These aggregate perspectives are simple but novel in that they require linked data that until recently did not exist.

Next, harnessing the sheer size of the linked dataset, we turn to regression analyses to characterize mobility patterns and their correlates in greater detail. A local characteristic of particular interest is the prevalence of cotton production. This was, of course, one of the most salient aspects of southern economic activity. Historians have noted the low rate of black farm ownership in cotton-intensive regions (e.g., Ayers 1992, p. 208). The linked microdata enable us to measure the strength of this connection at a local level while conditioning on local and personal covariates.

Our baseline regression analyses consist of linear probability models for moving into property ownership by 1900, focusing on subsamples of men who did not own property in 1870. We estimate regression equations of the following form:

$$Y_{iacd} = \beta_1 Cotton_c + \beta_2 L_c + \gamma_d + \lambda_a + e_{iacd}$$

where Y_{iacd} is an individual-level outcome, primarily movement from "no real property" in 1870 into "home ownership" by 1900; $Cotton_c$ is an indicator for counties that have high levels of cotton production per capita in 1870 (defined above); L_c is a vector of other county-level variables of interest measured circa 1870, including information on military presence and voting; λ_a is a vector of age fixed effects; and γ_d is a vector of sub-regional fixed effects for the individual's place of

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[26] One caveat is that movement to towns or cities may have lowered opportunities for home ownership but raised income levels; that said, our sample of black men is still overwhelmingly settled in rural areas in 1900.

residence in 1870.[27] For additional insight or to test robustness, we sometimes augment the equation with more local, individual, or household-level variables. We do not include these in the baseline regressions since they may be "bad controls"; that is, cotton-intensive agriculture may affect them.

We estimate equations separately for black and white men, thus allowing all coefficient estimates to differ by racial category. We also estimate equations separately for *intra*-generational outcomes (for males 18-40 in 1870) and *inter*-generational outcomes (for males 0-18 in 1870 and living with a parent). Our baseline regressions include men from all parts of the US to provide the broadest possible view of Americans' mobility patterns. We then report results specifically for men who, in 1870, resided in states of the former Confederacy. In this case, men who migrated after 1870 remain in the sample even if they left the region. To be clear, in our analysis we take 1870 place of residence as given, and it is possible within our sample for men to move away from such areas before we see them again in 1900. Thus, the coefficient (β_1) on the variable for "cotton-intensive county" measures differences in the average rate of mobility into home ownership for men who resided in such counties in 1870 relative to men of the same race who resided elsewhere, with or without additional conditioning variables. We then explore potential mechanisms in more depth.

These regressions are descriptive but informative. They provide new evidence on major themes in the economic history literature on this era. First, and our main point of emphasis in this paper, the revival and expansion of cotton cultivation after the Civil War was a defining characteristic of the postbellum South. Within the South, however, there was substantial geographic variation in the importance of cotton cultivation, largely reflecting the underlying characteristics of soil and climate. Where cotton could be grown profitably, it generally was. Whether residing in an area with intense cotton cultivation as a young man facilitated or deterred mobility into property ownership later in life has not been explored empirically to our knowledge. In theory, cotton cultivation might have been relatively lucrative, at least compared to alternatives, and this might have led to more upward mobility over the lifecycle, *ceteris paribus*. In practice, however, we find that such places were much less conducive to upward mobility for black men.

Second, the assertion of federal power in the South during Reconstruction, the extent to which the Army protected (or failed to protect) black Americans' lives and rights, and the

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[27] The Northeast and West regions correspond to those defined by the census. We created a set of "Border" states (DE, MD, DC, WV, KY, and MO), which did not join the Confederacy but did allow slavery on the eve of the Civil War. Our Midwest category corresponds to the census definition, but without Missouri. The remaining regional areas consist of the West South Central, East South Central, and South Atlantic states that were also members of the former Confederacy (i.e., not those allocated to the "Border" category).

consequences of the federal withdrawal as Reconstruction waned are core themes in this era's history (e.g., Du Bois 1935, Foner 1988). In 1870, we pick up the story near the peak of federal influence. By this time, Congress had attempted to ensure black Americans' citizenship and civil rights, many black officeholders had been elected, and federal troops were spread throughout the region, albeit at numbers incapable of fully suppressing violent reprisals (Egerton 2014, Downs 2015). In our data, we can see whether variation in federal influence and black political power across localities during Reconstruction was associated with durable differences in black men's entry into home ownership.

5. Results

National-level Mobility Patterns and Counterfactuals

Table 1A reports four transition matrices for black and white, intra- and inter-generational mobility patterns. Within each 2-by-2 panel of "owner" versus "not-owner" status, the percentages sum to 1. The third column sums across the previous columns to show the relative size of the owner and non-owner categories in 1870. To fix ideas at the start: 96 percent of adult black men in the sample were propertyless in 1870, and 91 percent of black children resided in propertyless households.

The top panel shows that 29 percent of black men (18-40 in 1870) owned no real estate in 1870 but transitioned into home ownership by 1900, an upward mobility rate of 30 percent (29/96). The panel's most populated cell, however, is for men who were propertyless in both 1870 and 1900 (67 percent). A small group of black men owned property in 1870 (4 percent); obviously, this is a stark contrast to a counterfactual history in which "40 acres and a mule" had been distributed to those who had been enslaved. Although most of these men still owned homes in 1900, many did not.[28]

Black inter-generational patterns are qualitatively similar (second panel). By far the largest cell is for non-owner household heads in 1870 and non-owner sons in 1900, at 75 percent. About 16 percent of the black sons in our sample transitioned from non-owning households in 1870 to home ownership by 1900, an upward mobility rate of 17 percent. These men were ages 30 to 48 in 1900. Given that the ownership-age gradient was upward sloping, it is likely that more men in this cohort would have gained ownership later in their lifecycle. But this snapshot is still revealing and offers a contrast in comparison with similarly aged white men.

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[28] We do not put too much weight on interpreting this row due to their small share of the sample and because errors and mismatches in the linked data are likely to introduce some noise.

The white transition matrices are strikingly different. In the intra-generational panel, fewer white men than black men were without land holdings in 1870 (72 percent white compared to 96 percent black). The dominant transition cell for white men is from non-owner status in 1870 to owner status by 1900, at 39 percent of the sample, an upward mobility rate of 54 percent (39/72). Only 33 percent of the white intra-generational sample were non-owners in both 1870 and 1900, compared to 67 percent of the black sample.[29]

In the white inter-generational panel, only 37 percent of white sons resided in households that had no property wealth in 1870. Their upward mobility rate was 27 percent (10/37), compared to the black rate of 17 percent. It is interesting, and perhaps surprising, that there is a sizable group of white sons (37 percent) who resided in households with real property wealth in 1870 but did not own homes in 1900 themselves. As mentioned above, we observe the sons at ages 30-48, and it is likely that more would have gained ownership status later in their lifecycle. But it is also clear that having a household head who owned real property in 1870 was no guarantee of the son's home ownership in 1900. This may, in part, reflect the era's rapid urban growth, which tended to attract young workers to cities where home ownership rates were relatively low (Collins and Margo 2011).

The divergent starting points in 1870 and subsequent ebbs and flows into ownership resulted in large racial disparities in property ownership rates circa 1900. To provide a simple metric of how important differences in mobility were, we assign the white mobility rates to the black population to calculate a counterfactual black home ownership rate in 1900, as described above. Taking as given the low rate of black ownership in 1870 in the intra-generational sample, we estimate that 55 percent black men would have owned homes in 1900 if they had transitioned into (and out of) ownership at the rates that white men did. This is nearly double the rate of actual 1900 black ownership rate of 31 percent, and it almost equals the white ownership rate of 59 percent.[30] Thus, within a single generation after emancipation, the home ownership gap would have been nearly eliminated under a scenario of equal mobility rates. For historical perspective, Collins and Margo (2011, web appendix table 6) report that the home ownership rate for black male household heads, ages 55-64, finally reached 53 percent in 1960; the racial gap in that year was still 20 percentage points.

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[29] A substantial fraction of white men in the intra-generational analysis, despite being ages 18 to 40, were not yet household heads. Although it is impossible to observe inheritance in census data, it is simple to drop men who resided in households headed by parents, grandparents, or other family members in 1870 (i.e., adult men working on a "family farm"). The upward mobility rate in this reduced sample is similar to the full sample.
[30] Analogous inter-generational calculations are also stark: with white mobility rates, black sons would have had an ownership rate of 28 percent in 1900 compared an actual rate of 18 and a white rate of 36.

This mobility gap was not merely a reflection of black-white differences in *personal* wealth holdings circa 1870 (i.e., non-real-estate wealth).[31] Although white men without real estate wealth in 1870 were more likely to report holding some personal wealth than were black men, the relatively high rate of white mobility into home ownership by 1900 is nearly the same when the sample is restricted to those without personal wealth in 1870. Therefore, the counterfactual calculation would be little changed.

In addition, it does not appear that the racial mobility gap is easily attributable to differential access to northern land for homesteading. The 1862 Homestead Act, which offered publicly held lands in the Midwest for settlement by US citizens, is often portrayed as a watershed policy that made land more readily accessible at low financial cost.[32] When we drop landless white men who resided in the Midwest in 1870 from the sample (i.e., those most proximate to lands available for homesteading), the white mobility patterns are again similar to those in the full sample.

The mobility analyses described to this point pertain to national-level statistics, which we argue are necessary to appreciate the full scope and scale of economic mobility in the United States. But we also want to draw attention to important variation *within* the black population's mobility patterns—specifically the remarkably low upward mobility rates for men who resided in cotton-intensive areas in 1870. About 63 percent of black men in the sample resided in cotton-intensive counties in 1870, implying that conditions there strongly influenced the overall black mobility rate.

The panels in Table 1B are arranged similarly to those in Table 1A, but now we split the black sample by whether the county was cotton intensive (as defined above). For brevity, we focus on the intragenerational data. Few black men in either subsample owned real property in 1870 (93 versus 98 percent). But black men residing outside cotton-intensive areas in 1870 were far more likely to attain home ownership by 1900 than those residing in cotton-intensive areas—the upward mobility rate was 11 percentage points (or 42 percent) higher in areas that were not cotton intensive (37 versus 26). A counterfactual assigning the non-cotton-intensive areas' mobility rates to men in the cotton-intensive areas would nearly equalize the mobility rates in each region and would raise the black sample's overall 1900 home ownership rate from 31 percent (actual) to 38 percent (counterfactual). In this sense, the low upward mobility rates for black men in the cotton belt were a significant drag on black households' aggregate gains in home ownership.

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[31] Enumerators were to record personal property wealth if the total exceeded $100. When we restrict the analysis to men with zero wealth reported, it is possible there were unobservable differences in the 0-99 range.
[32] In general, homesteaders could claim 160 acres, but to gain "free and clear" title to the land they had to improve it and reside on it for five years, or they could purchase the land after a shorter period of settlement.

The main takeaways from Tables 1A and 1B are as follows. First, despite extremely low levels of wealth and literacy in 1870 and the rise of Jim Crow institutions, many black households attained property ownership by 1900. In our linked sample, more than one-quarter of propertyless black men in 1870 (ages 18-40) were home owners by 1900, and about one-sixth of black sons in propertyless households in 1870 were home owners by 1900 while still relatively young men. To be sure, the average value of black-owned homes was substantially less than that of white-owned homes in 1900; nonetheless, gains in property ownership at the extensive margin were historically important and contributed to an overall narrowing of the black-white wealth gap (Derenoncourt et al. 2024).[33] Second, black men's rates of mobility into ownership were far lower than those of white men who did not own real property in 1870, and this is not readily attributable to differences in other forms of personal wealth holding or access to homesteading in the Midwest. Our counterfactual highlights the empirical significance of that mobility gap. Third, black upward mobility rates in cotton-intensive areas were far lower than elsewhere in the US, including elsewhere in the South.

In the paper's subsequent sections, we dig deeper into the patterns of black and white mobility that are embedded in the microdata, harnessing detailed information about people and places to better understand the dynamics and disparities of mobility into homeownership.

Correlates of Intra-Generational Mobility: Black Men

Table 2 reports regression coefficients that describe patterns of intra-generational mobility into property ownership for black men between 1870 and 1900, focusing on differential mobility in cotton-intensive areas. For reference, Appendix Table 1 reports sample summary statistics. Since 96 percent of black men, ages 18 to 40, reported owning no real estate in 1870's census, this segment of the population and its upward mobility is of particular interest.

Column 1's specification is parsimonious—it measures the differential likelihood of moving into home ownership for black men who resided in cotton-intensive counties in 1870 relative to those residing elsewhere in the US, controlling only for age. Column 2 adds subregional fixed effects as described in equation 1, and so the estimate of β_1 is based on *within*-subregion differences in mobility across counties. In both columns 1 and 2, black men had far lower chances for moving into

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[33] The average black owner-operated farm was about one-fourth as valuable as the average white owner-operated farm in 1900. See the published volumes of the 1900 Census (Vol. V, Agriculture, Part 1, Tables 13 and 14). In 1930, the first census with home values, black-owned non-farm homes were also less valuable than white-owned homes (about one-third as valuable), based on the 1-percent IPUMS microdata sample.

home ownership if they resided in cotton-intensive areas in 1870, by 11 or 12 percentage points.[34] Column 3 adds county-level variables to the regression (L_c), including voting, military presence, and urban share variables. Column 4's specification is identical, but the sample is restricted to men in the states of the former Confederacy. The estimates of β_1 hover around -0.12 and are statistically significant, even when measurement relies solely on differences within the Confederacy.

For black men residing in the former Confederacy (col. 4), there is no evidence that men in places with a military presence in 1870 or higher voting rates for Ulysses S. Grant in 1872 had higher mobility-into-ownership than black men in other places.[35] Thus, Reconstruction-era protection of the black population's rights and measures of black political power do not appear to have supported higher home ownership in 1900. If anything, there is evidence of a reversal in fortune—higher Republican voting in 1872 is associated with slightly lower black mobility into ownership in column 4, *ceteris paribus*, such that 1 s.d. difference in Republican voting (18 pp) is associated with 1.3 pp lower mobility into ownership.

We confirmed that upward mobility regression results are not sensitive to using $100 of real property value as the cutoff for "ownership" in 1870 (rather than > 0). They are also not sensitive to clustering standard errors at the state-economic-area level rather than the county level.[36] We have also run the baseline regressions while omitting all counties with zero cotton production, again yielding similar results. Augmenting the baseline regressions to include additional covariates for 1870, such as literacy, positive personal wealth, and farmer and farm laborer indicators, has little influence on the estimate of β_1 (Appendix Table 2). Later in the paper, we explore covariates such as local land values, wealth concentration, and literacy rates that might have served as intermediating variables between cotton intensity and reduced black property ownership.

Correlates of inter-generational mobility: Black men

Table 3 pertains to inter-generational mobility into property ownership—the likelihood that sons whose household head did not own real estate in 1870 moved into home ownership themselves

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[34] Regional regression coefficients are expressed relative to the South Atlantic Confederate states. Using state fixed effects instead of regional fixed effects and only the Confederate states reduces the coefficient on cotton intensity to -0.09. Therefore, it seems unlikely that differences in state-level policy variables drive our results.

[35] The same is true if we replace the variable based on census counts of men with military occupations (baseline regression) with variables based on data from Downs and Nesbitt (2015) indicating any troop presence between 1871 and 1880 or the average number of troops over the full span of Reconstruction.

[36] State economic areas (SEAs) are contiguous groups of several counties with similar economic and social characteristics. This provides a simple way to cluster over larger geographic areas than counties. SEAs were defined based on mid-twentieth century data (Bogue 1951).

by 1900. Appendix Table 3 reports sample summary statistics. In general, the key findings echo those from the intra-generational analysis.[37] There is a strong and statistically significant negative association between this measure of upward mobility and residing in a cotton-intensive area in 1870. When sub-region fixed effects are included, the gap is typically around 5 to 6 percentage points, relative to a sample mean of 18 percent moving into ownership. Adding covariates in column 3 and then restricting the sample to the states of the Confederacy in column 4 does not substantially change the coefficient relating cotton intensity to black inter-generational mobility into home ownership.

Column 4 reveals no evidence that the presence of the military in 1870 or the vote share for Ulysses S. Grant in 1872 supported higher inter-generational mobility into ownership. Again, there is some evidence that within the Confederacy, places with higher voting shares for Grant were less conducive for black ownership gains, *ceteris paribus*. Augmented specifications (Appendix Table 4) again have similar estimates of β_1. Those regressions do reveal that those who attended school in 1870 fared better than others in terms of gaining home ownership by 1900, but the difference was small (about 2 percentage points).

Additional Robustness and Extensions

The baseline dummy variable for cotton intensity—indicating whether a given county had cotton per capita production above the southern median—is a coarse but easily interpreted way to characterize differences in the geography of mobility. We also explored whether variation in cotton intensity *within* the subset of "cotton intensive" counties is predictive of black intra- and inter-generational mobility. To do so, we created a "very high" cotton intensity indicator, comprised of counties that rank in the top quartile of southern counties in cotton bales per capita. Restricting the samples to black men in high cotton-intensive counties, those residing in "very high" counties had substantially lower upward mobility rates than those elsewhere *within* the cotton-intensive sample, by about 9 percentage points (s.e. = 0.011) in the intra-generational analysis and 6 percentage points (s.e. = 0.008) in the inter-generational analysis (Appendix Table 5).

Appendix Figures 1 (intra-generational) and 2 (inter-generational) provide binscatter graphs that relate black men's upward mobility to underlying measure of cotton bales per capita, rather than relying on the discrete thresholds for "high" or "very high" cotton intensity. These figures condition on age and are restricted to the states of the former Confederacy. The strongly negative relationship

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[37] While the coefficients are smaller in terms of percentage points, it is also notable that the intra-generational rate of mobility into ownership was larger than the inter-generational rate, presumably because sons observed in 1900 were still relatively young (30-47) compared to men in the intragenerational analysis.

is clear in both figures. Patterns are similar if the sample is limited to men in counties with at least some (> 0) cotton production.

We built a second dataset of linked records using Zimran (2022) links. Although similar in spirit, there are several differences between the Zimran and ABE linking algorithms, leading to different sets of crosswalks.[38] Nonetheless, the results of our analysis are similar. Appendix Tables 6 and 7 report intra-generational and inter-generational mobility regression results, using Zimran links, that confirm the findings discussed above.

Finally, we offer a view that exploits an exogenous geologic feature. One might argue that cotton was intensively cultivated in certain places because there was a large supply of landless men, implying reverse causality. Our view is that, historically, the potential for cotton cultivation drew enslaved populations to these areas, not the reverse; therefore, we are not very concerned about reverse causation confounding our interpretation's emphasis on the primacy of cotton cultivation. Nonetheless, we offer an analysis that builds on a remarkable feature of Alabama's geology—the "black belt" soil that cuts a swath through the center of the state (Appendix Figure 3). This reflects the location of ocean shores millions of years ago, before cotton and slavery (and before humans for that matter). It is a useful and exogenous feature in that it altered the land's agricultural characteristics relative to surrounding areas both north and south of the belt.[39] The linked sample is much reduced when limited to Alabama, of course, but we see in both reduced-form and instrumental-variable regressions that places particularly well-suited for cotton production due to this geologic feature had lower rates of black upward mobility than other places in Alabama (Appendix Table 8).

Correlates of intra- and inter-generational mobility: White men

Black men and white men had substantially different patterns of mobility into property ownership. We have already seen this in the aggregate mobility rates in Table 1A. In this section, we examine the microdata for white men and compare their mobility patterns with black men's.

Table 4 examines white men's intra-generational mobility, using the same framework as Table 2. It shows that white men who did not own real estate in 1870 and resided in cotton-intensive counties had roughly similar rates of mobility into home ownership by 1900 as white men elsewhere in the US and within the Confederacy. This is in stark contrast with the results for black men. In

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[38] See the "Readme" file in Zimran (2022) for some comparative discussion.
[39] We prefer this to modern measures of cotton suitability given Rhode's critique (2024).

column 1, the most parsimonious regression, the coefficient on cotton intensity is positive—white men in cotton-intensive areas had better chances of upward mobility than elsewhere. Once sub-regional fixed effects and other covariates are added in columns 2 to 4, the point estimates of β_1 are between 0 and -0.03.[40] In all cases, the gap is much smaller than that 12 percentage-point gap within the black population. Within the Confederacy (column 4), the 1872 Republican vote share and presence of federal military were weakly negatively correlated with white mobility into ownership.

Table 5 reports inter-generational mobility results for the white sample. White children were more likely to move into ownership in cotton-intensive areas than elsewhere in the US, by a remarkable 10 percentage points in column 1. This partly reflects the relatively low mobility rates in the Northeast, where a large fraction of the white population resided and cities were growing rapidly. The coefficient is greatly reduced when relying on within-region variation (column 2) and is of negligible size once additional covariates are included (column 3) and the sample is restricted to the Confederacy (column 4). Within the former Confederacy, federal military presence and 1872 Republican vote share were again weakly negatively correlated with white inter-generational mobility, *ceteris paribus*.

Overall, the most interesting finding in our analysis of white men's mobility patterns is the strong contrast they present relative to that of black men in cotton-intensive areas. Whereas black men had much lower chances of gaining ownership if they started in such places in 1870 compared to black men elsewhere, white men in these areas faced little or no mobility deficit.

6. Discussion of Cotton-Intensity and Black Movement into Property Ownership

The combination of occupational and home ownership data from 1900 can clarify key aspects of the patterns described above. In our linked sample, the most striking difference between black men from cotton-intensive counties and those from other counties in the former Confederacy is the large share who, in 1900, were "farmers" but not "home owners" (44 percent versus 22 percent in the intra-generational analysis). On the other hand, the difference across high- and low-cotton-intensity counties in the share who were farmers *and* owned homes was small (21 versus 18 percent), as was the difference in the share of agricultural laborers (14 versus 13 percent). In sum, black men who resided in cotton-intensive counties in 1870 were far more likely to work in agricultural occupations in 1900 than men from elsewhere in the Confederacy, *and* nearly all the "extras" were sharecroppers

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[40] Restricting the sample to men who were not living with relatives in 1870—to partly insulate the results from those working the "family farm"—results in only a small change in the coefficient on cotton intensity.

or tenant farmers (i.e., farmers who did not own their homes).[41] In this sense, the size and organization of the agricultural sector in cotton-intensive areas were distinct and closely related to the low rate of black home ownership.

It is notable, however, that this difference goes only part of the way to accounting for black men's low rate of upward mobility when residing in cotton-intensive areas. For men who did *not* work in agriculture in 1900, there is still evidence of a sizable mobility-into-ownership gap between those who resided in high- and low-cotton-intensity counties of the former Confederacy in 1870 (about 7 pp). This is smaller than the gap for those working in agriculture in 1900 (about 15 pp), but still a sizable difference. In other words, for black men, exposure to cotton-intensive agriculture circa 1870 was negatively correlated with one's likelihood of mobility into home ownership even if they did not hold an agricultural occupation in 1900. Thus, the story is not entirely about men getting stuck at a low rung on the agricultural ladder.

To go beyond the observation of differences in occupation-by-ownership distributions, we explored five economic factors that might have inhibited black men's mobility into property ownership. In theory, each of these (or all in combination) could be a mechanism linking cotton intensity and black men's ability to acquire land. First, perhaps land was relatively valuable in these areas and, therefore, expensive to acquire, especially for freedmen who had few savings and limited credit networks. Second, perhaps landholdings in such areas were relatively concentrated. If so, a small number of discriminatory landholders might collude to keep land out of the hands of potential black buyers. Third, all else the same, perhaps in places with relatively large black populations, a smaller *share* of black households were able to find willing (white) sellers of land or providers of credit than elsewhere.[42] Fourth, perhaps black educational attainment was depressed in cotton-intensive areas due to demand for children's labor (Baker 2015) and low public goods provision. Illiteracy may have limited access to formal contracts, better farming techniques, and employment opportunities outside agriculture. Fifth, perhaps geographic mobility from such areas was more difficult or debt was more immobilizing, impeding movement to areas where land was more readily obtainable.

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[41] The pattern for white men is far less pronounced (e.g., 20 vs 15 percent were farmers but not homeowners in cotton-intensive counties compared to others in the former Confederacy in 1900). It is not possible in the 1900 data to definitively identify sharecroppers.

[42] Consider a simple model in which all land is initially owned by white households, some fraction of whom would demand a sizable premium to sell land to black buyers. In places where black households were a large share of the total population, it is more likely that the marginal white seller would require a large premium. Some land might change hands, but the black rate of mobility into ownership would be low.

We constructed several variables to help evaluate the plausibility of these hypotheses. From the 1870 census of agriculture, we calculated the county-level average farm value per acre.[43] From the 1870 census of population microdata, we calculated the share of real estate wealth held by the top 10 percent of each county's male population and the black share of each county's population. We merged these variables into the linked sample. For each individual in the sample, we created an indicator for literacy and another indicator for interstate migration between 1870 and 1900 (men remain in the sample even if they leave the region).

Using the sample of adult black men, we regressed each of these variables in turn on the indicator for cotton-intensive counties, subregional fixed effects, urban share of the county population, and age fixed effects, restricting the sample to men residing in the former Confederacy in 1870. The idea is to see whether these potential intermediating variables were strongly associated with cotton intensity, a necessary condition for them to mediate the relationship between cotton agriculture and upward mobility. We acknowledge, of course, that no single observable feature is likely to capture the myriad pathways that might link agriculture and mobility into ownership. Yet this exploration may yield useful clues and motivate future research.

Table 6 reports results. The most outstanding characteristic of cotton-intensive areas relative to others in the Confederacy is their high black population shares in 1870. The coefficient on the cotton-intensity indicator is 0.13, relative to the sample average of 0.51. After the Civil War, despite much internal migration within the South, cotton-intensive areas retained relatively large black labor forces. In contrast, there is no evidence that farmland in cotton-intensive areas was more valuable per acre than elsewhere in the Confederacy, conditional on subregional fixed effects and urban share.[44] If anything, farmland was less valuable in such areas. Three other channels receive some weak empirical support. Landownership was more concentrated in cotton-intensive areas, perhaps reflecting the survival of plantations, but the difference between high- and low-cotton-intensity counties was only about 2 percentage points, which is small relative to the sample average. Black men's literacy and likelihood of interstate migration were slightly lower in cotton-intensive areas, by about 2 percentage points in each case, but these estimates are not statistically significant.[45]

We also considered whether low upward mobility in cotton-intensive areas might be due to

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[43] This is farm value divided by the sum of improved and unimproved (wooded and other) acres.

[44] To ensure that this result is not driven by outliers, we omit the top and bottom 1 percent of the sample in terms of value per acre.

[45] Migration is likely inflated due to false matches (Zimran 2024). We do not expect that mismatches are more common in cotton-intensive areas than elsewhere; so, the difference should still be informative.

lower earnings potential for unskilled laborers in these areas. It is impossible, unfortunately, to measure individuals' earnings in this period. We surmise, based on state-level averages for farm laborers' monthly earnings (with board) reported in Lebergott (1964, p. 539), that states intensive in postbellum cotton production did *not* have lower wages than elsewhere in the former Confederacy.[46] This is relevant because sharecroppers were close in economic status to laborers in this setting (Alston and Kaufman 1998).[47] More research would surely be useful in this area. For now, we believe it is unlikely that substantial earnings advantages in low cotton-intensity places drove the observed advantages in mobility into ownership.

The combination of evidence in Tables 2 to 5 (in which black men had far lower upward mobility rates in cotton-intensive areas but white men did not) and Table 6 is consistent with an interpretation in which black men in such areas had a lower chance of finding a willing (likely white) seller of land (or lender for the purchase of land). More formally and abstracting from financing, assume there is a distribution of racial prejudice across white landowning households in each locality. A few white households might sell parcels of land to black households at a price reflecting its productivity, but others would require a premium to do so.[48] For increasing quantities of land to be sold to black households, a higher premium would be required, reflecting increasingly prejudiced sellers at the margin. Assume that some black households would be willing to pay a premium to own land (e.g., independence is highly valued), but each has a reservation premium above which they would not or could not purchase land. In localities with relatively small black populations, ceteris paribus, a relatively large *share* might find land for sale that is below their reservation price (e.g., they can buy parcels from the least prejudiced sellers). In localities with relatively large black populations, ceteris paribus, the premium is higher, and a smaller *share* of black households would become owners. Indeed, there is a strong empirical relationship between intra-generational mobility rates and the black share of the population in areas of the former Confederacy (Appendix Figure 4).[49]

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[46] This statement is based on comparing simple averages across South Carolina, Georgia, Alabama, Mississippi, Louisiana, and Texas (cotton states) to averages across Virginia, North Carolina, Florida, Tennessee, and Arkansas. We omit Kentucky since it was not part of the Confederacy. Weighted averages using 1870 black population reinforce the conclusion that high cotton intensity states paid at least as well as others.

[47] Alston and Kauffman write, "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, pp. 264–65).

[48] Canaday and Reback (2010) find that black households paid more than white households for land of similar quality in a sample of Tennessee transactions in 1880.

[49] Analysis using Stata's *medeff* command suggests that black population share mediates 20 percent of the total cotton intensity association with black upward mobility (Hicks and Tingley 2011). So, this may be only one piece of the puzzle.

In sum, in areas with large black populations and cotton-intensive agriculture, land ownership remained out of reach for most black households and sharecropping became and remained the norm. This resonates with Ransom and Sutch's (1977) and Raper's (1936) emphasis on the supply side of the market for land (described in section 2), which was distorted by racism in ways that hindered black mobility into property ownership. It is also complementary to, or at least compatible with, other scholars' emphasis on sharecropping and crop lien laws as an economic and legal system that inhibited black households' accumulation of assets and that may have blunted their incentives to do so (e.g., see Wright 1986, p. 102).

7. Conclusions

In this paper we examine new data revealing American men's intra- and inter-generational mobility into property ownership in the late nineteenth century, with a special focus on outcomes for black Americans in the wake of the Civil War and Emancipation. Because formerly enslaved black Americans were not provided with land or other forms of compensation, they worked primarily as laborers and sharecroppers on farms owned by white southerners. Against this backdrop, many black households did succeed in attaining home ownership between 1870 and 1900, albeit at lower rates than white households who held no real property in 1870. This black-white mobility gap had vast implications. A simple assessment of the black and white transition matrices reveals that the racial home ownership gap among older men in 1900 would have been only 4 percentage points if black men had transitioned from non-ownership in 1870 to ownership in 1900 at the same rate as white men. The black-white home ownership gap has never been that small (Collins and Margo 2011). Thus, understanding the mobility gap is important, as it was (and is) an essential mechanism in the perpetuation of racial differences in home ownership and wealth.

Closer inspection of the data indicates that the cotton belt of the US South played an important role in this early, national-level mobility gap. The intra-generational analysis finds that black men in cotton-intensive counties were about one-third less likely to gain home ownership than black men elsewhere in the US (26 vs 38 percent), conditional on holding no real property in 1870. The inter-generational analysis, focused on younger men, is qualitatively similar though less stark (16 vs 20 percent). Even within the states of the former Confederacy, cotton-intensive areas stand out for their lack of black mobility into home ownership. It is striking that white men in the cotton belt did not face a similar mobility deficit relative to white men elsewhere.

One feature of the cotton-intensive areas that stands out, circa 1900, is the large share of black men who were farmers but not home owners. Surely, the prevalence of sharecropping in cotton

agriculture is part of the story for why black mobility into home ownership was so low. For many black men sharecropping was not an intermediate rung on a tenure ladder leading to ownership but instead more akin to a dead-end job.

Going further, we evaluated several potential channels that may have mediated the relationship between cotton-intensity and black mobility into property ownership. The relatively high black population shares of cotton-intensive counties compared to others in the former Confederacy are salient in this regard. Differences in wealth concentration, literacy, propensity for interstate migration, and farm laborer wages, were far less prominent, and farmland values were lower in cotton-intensive counties than elsewhere circa 1870.

Future research could go in many fruitful directions by building on the complete count census records with names included. For instance, the linkage of census records to local property, tax, or court records may reveal more about the timing and magnitude of black property accumulation, and perhaps the identity of those who sold property to black farmers and those who inherited or later acquired the land. Information about transaction prices and mortgage contracts might be especially revealing for understanding the financial aspects of southern property markets and the ways race shaped those markets. Research could also build linkages forward into the next generation, allowing closer examination of the boll-weevil shock, the onset of the Great Migration, and the implications of migration to cities for black property ownership and wealth, all of which lie beyond this paper's scope. Finally, with the mid twentieth-century history of cotton agriculture in mind, linked records could reveal displacement patterns and their implications for black workers during the Great Depression and, later, during the mechanization of cotton harvesting.

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Figure 1: Intra-generational Mobility Rates, by 1870 County of Origin

Black Men
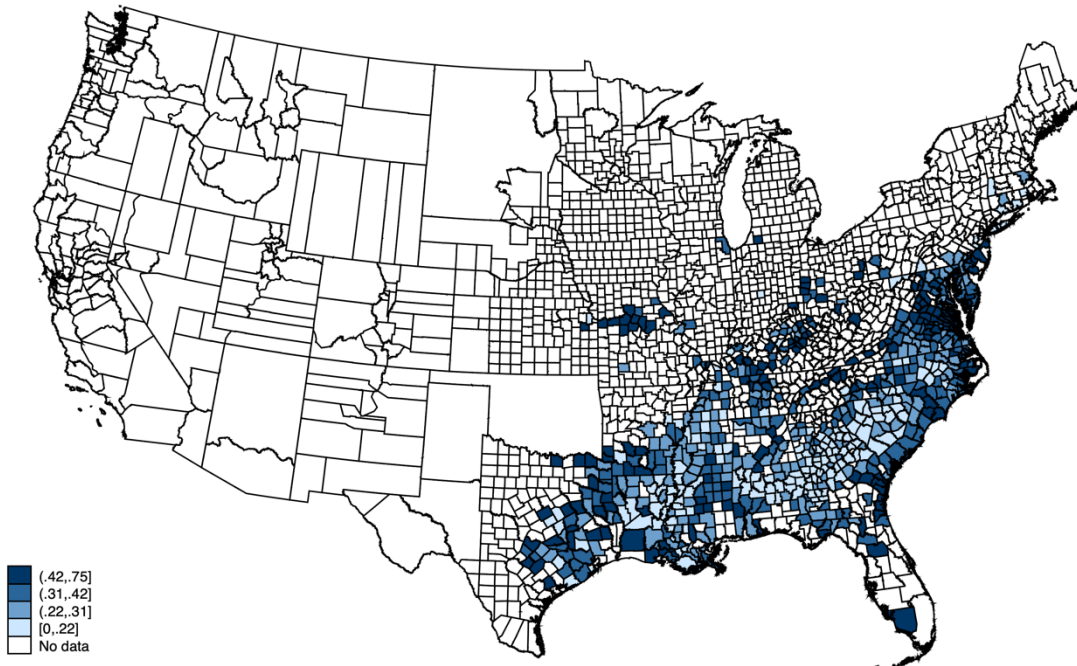
White Men
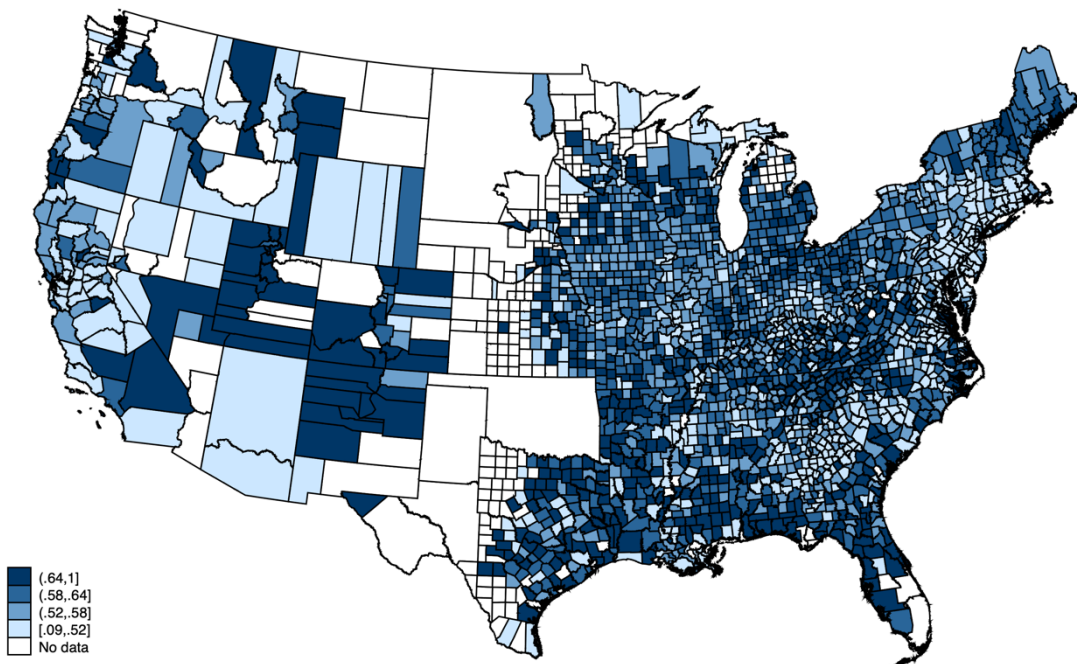
Notes: The maps are on different scales, with the white scale shifted higher. Counties are shaded only if we have at least 10 men in the linked sample for the relevant race category. Intra-generational mobility is movement into home ownership by 1900 conditional on owning no real property in 1870. See notes to Table 1A for more details.
Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion of the data is provided in section 3 of the main text.

Figure 2: Inter-generational Mobility Rates, by 1870 County of Origin

Black Men

(.26,.58]
(.18,.26]
(.12,.18]
[0,.12]
No data

White Men

(.39,.88]
(.315,.39]
(.26,.315]
[.05,.26]
No data

Notes: The maps are on different scales, with the white scale shifted higher. Counties are shaded only if we have at least 10 men in the linked sample for the relevant race category. Intergenerational mobility is movement into home ownership by 1900 conditional on residing with a parent head of household who did not own property in 1870. Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion of the data is provided in section 3 of the main text.

Figure 3: Cotton Bales per capita in the Former Confederacy, 1870 Census of Agriculture

(.675,4.51]
(.46,.675]
(.32,.46]
(.15,.32]
(.05,.15]
(0,.05]
[0,0]
No data
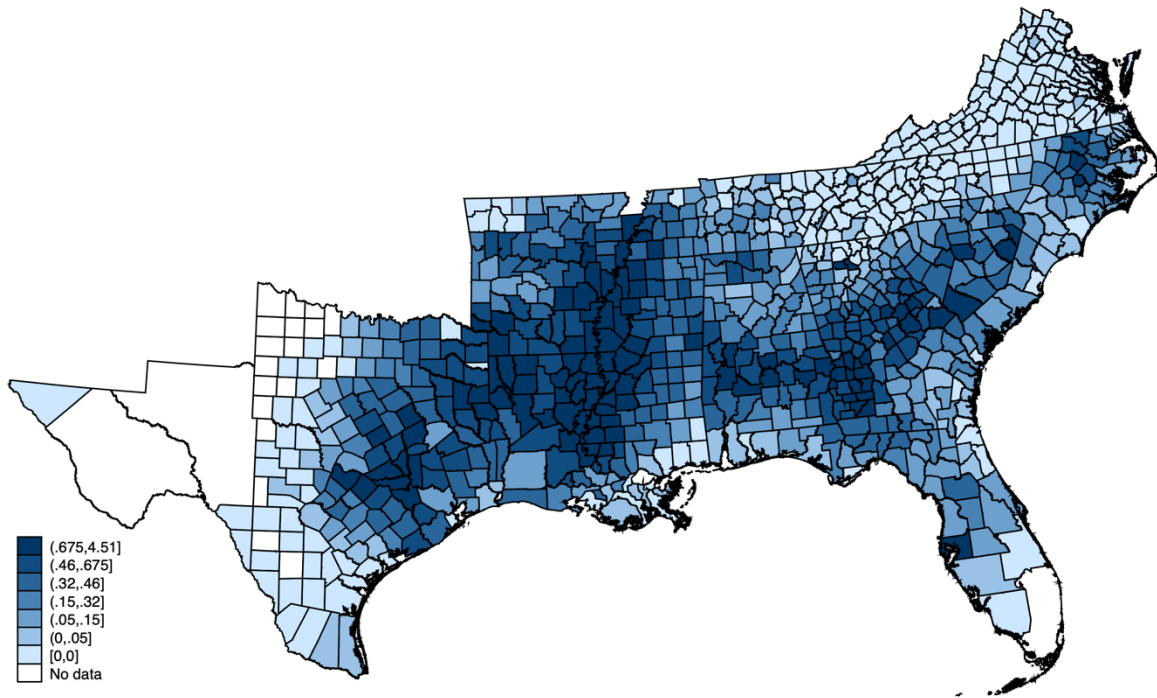
Source: Calculated with data from Haines, Fishback, and Rhode (2016).

Table 1A: Black and White, Intra- and Intergenerational Mobility into Property Ownership, 1870-1900

Black, Intragenerational

	Not Owner1900	Owner 1900	Share 1870
Not owner 1870	0.672	0.288	0.961
Owner 1870	0.018	0.021	0.039

Black, Intergenerational

	Not Owner 1900	Owner 1900	Share 1870
Not owner 1870	0.750	0.158	0.908
Owner 1870	0.068	0.024	0.092

White, Intragenerational

	Not Owner 1900	Owner 1900	Share 1870
Not owner 1870	0.329	0.393	0.722
Owner 1870	0.080	0.198	0.278

White, Intergenerational

	Not Owner 1900	Owner 1900	Share 1870
Not owner 1870	0.270	0.099	0.369
Owner 1870	0.373	0.258	0.631

Notes: Percentages sum to 1 across the four interior cells of each panel. "Not owner 1870" implies that the census recorded no real estate property for this individual (intra-generational) or the household head (intergenerational). "Not owner 1900" implies that the census recorded this individual's household as living in rental housing or that the individual was not the head of household (or spouse of the head). "Share 1870" sums the cells to the left. Observations are weighted to adjust for selection into linkage. Intra-generational calculations pertain to men who were ages 18-40 in 1870. Intergenerational calculations pertain to men who were 0-18 and residing with a parent head of household in 1870.
Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion is provided in section 3 of the main text.

Table 1B: Black, Intra- and Intergenerational Mobility into Property Ownership, 1870-1900

Cotton-Intensive, Intragenerational

	Not Owner1900	Owner 1900	Share 1870
Not owner 1870	0.721	0.255	0.977
Owner 1870	0.012	0.012	0.023

Cotton-Intensive, Intergenerational

	Not Owner 1900	Owner 1900	
Not owner 1870	0.789	0.155	0.945
Owner 1870	0.041	0.015	0.055

Not Cotton-Intensive, Intragenerational

	Not Owner 1900	Owner 1900	
Not owner 1870	0.586	0.347	0.933
Owner 1870	0.029	0.038	0.067

Not Cotton-Intensive, Intergenerational

	Not Owner 1900	Owner 1900	
Not owner 1870	0.677	0.165	0.841
Owner 1870	0.117	0.042	0.159

Notes: Percentages sum to 1 across the four interior cells of each panel. See Table 1A for additional details.
Sources: See Table 1A.

Table 2: Correlates of Black Intra-generational Mobility into Property Ownership, 1870-1900

	All	All	All	Confed.
High cotton intensity	-0.1117	-0.1171	-0.1226	-0.1221
	(0.0093)	(0.0134)	(0.0129)	(0.0130)
Northeast	.	-0.0921	0.0094	.
	.	(0.0252)	(0.0565)	.
Midwest	.	0.0554	0.1084	.
	.	(0.0240)	(0.0550)	.
Border States	.	0.0128	0.0442	.
	.	(0.0175)	(0.0449)	.
West	.	-0.1626	-0.0856	.
	.	(0.0643)	(0.0877)	.
E Sth Cent	.	0.0012	0.0039	0.0038
	.	(0.0109)	(0.0109)	(0.0109)
W Sth Cent	.	0.0417	0.0418	0.042
	.	(0.0163)	(0.0145)	(0.0147)
Military presence, 1870	.	.	-0.0728	0.0044
	.	.	(0.0224)	(0.0218)
Military x Confederacy	.	.	0.0812	.
	.	.	(0.0305)	.
Republican Share 1872	.	.	-0.0012	-0.0007
	.	.	(0.0008)	(0.0003)
Republican x Confederacy	.	.	0.0005	.
	.	.	(0.0009)	.
Urban Share	.	.	-0.0928	-0.082
	.	.	(0.0289)	(0.0408)
Constant	0.3734	0.3701	0.4186	0.4176
	(0.0075)	(0.0106)	(0.0173)	(0.0174)
Adj. R-sq.	0.016	0.019	0.022	0.017
N	28146	28146	28146	24076

Notes: The sample consists of men who were 18-40 in 1870 and did not report owning real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. The Northeast and West regions correspond to usual census delineations. "Border states" (DE, MD, DC, WV, KY, and MO) did not join the Confederacy. The West South Central, East South Central, and South Atlantic states were members of the former Confederacy (i.e., not in the "border state" category). Urban share pertains to the county's whole population. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Table 3: Correlates of Black Inter-generational Mobility into Property Ownership, 1870-1900

	All	All	All	Confed.
High cotton intensity	-0.0349	-0.0502	-0.0552	-0.0565
	(0.0071)	(0.0100)	(0.0089)	(0.0089)
Northeast	.	-0.1058	-0.0434	.
	.	(0.0151)	(0.0474)	.
Midwest	.	-0.0203	-0.0073	.
	.	(0.0174)	(0.0434)	.
Border States	.	-0.0166	-0.0118	.
	.	(0.0139)	(0.0356)	.
West	.	-0.21	-0.1581	.
	.	(0.0148)	(0.0539)	.
E Sth Cent	.	-0.0049	-0.0039	-0.0035
	.	(0.0078)	(0.0077)	(0.0077)
W Sth Cent	.	0.0365	0.0361	0.0359
	.	(0.0119)	(0.0106)	(0.0104)
Military presence, 1870	.	.	-0.082	0.0046
	.	.	(0.0221)	(0.0128)
Military x Confederacy	.	.	0.0776	.
	.	.	(0.0236)	.
Republican Share 1872	.	.	-0.0002	-0.0003
	.	.	(0.0007)	(0.0002)
Republican x Confederacy	.	.	-0.0001	.
	.	.	(0.0007)	.
Urban Share	.	.	-0.0585	-0.0824
	.	.	(0.0259)	(0.0313)
Constant	0.1993	0.2084	0.2323	0.2336
	(0.0058)	(0.0080)	(0.0120)	(0.0119)
Adj. R-sq.	0.021	0.024	0.026	0.024
N	33673	33673	33673	29831

Notes: The sample consists of men who were 0-18 in 1870 and lived with a parent head of household who did not own real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Urban share pertains to the county's whole population. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Table 4: Correlates of White Intra-generational Mobility into Property Ownership, 1870-1900

	All	All	All	Confed.
High cotton intensity	0.0413	-0.0101	-0.0217	-0.0276
	(0.0075)	(0.0154)	(0.0085)	(0.0073)
Northeast	.	-0.0763	-0.0887	.
	.	(0.0146)	(0.0226)	.
Midwest	.	0.0123	-0.0414	.
	.	(0.0099)	(0.0217)	.
Border States	.	-0.027	-0.0781	.
	.	(0.0120)	(0.0192)	.
West	.	-0.0635	-0.102	.
	.	(0.0187)	(0.0246)	.
E Sth Cent	.	0.0276	0.0258	0.0267
	.	(0.0086)	(0.0075)	(0.0073)
W Sth Cent	.	0.0431	0.0506	0.0514
	.	(0.0256)	(0.0125)	(0.0102)
Military presence, 1870	.	.	-0.0493	-0.0329
	.	.	(0.0118)	(0.0172)
Military x Confederacy	.	.	-0.0147	.
	.	.	(0.0263)	.
Republican Share 1872	.	.	0.0007	-0.0003
	.	.	(0.0003)	(0.0002)
Republican x Confederacy	.	.	-0.0011	.
	.	.	(0.0004)	.
Urban Share	.	.	-0.1184	-0.1926
	.	.	(0.0167)	(0.0438)
Constant	0.5422	0.5719	0.6066	0.6076
	(0.0061)	(0.0092)	(0.0114)	(0.0111)
Adj. R-sq.	0.001	0.008	0.016	0.008
N	346419	346419	346419	51223

Notes: The sample consists of men who were 18-40 in 1870 and did not report owning real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Table 5: Correlates of White Inter-generational Mobility into Property Ownership, 1870-1900

	All	All	All	Confed.
High cotton intensity	0.0991	0.0344	0.0087	0.0016
	(0.0087)	(0.0218)	(0.0087)	(0.0080)
Northeast	.	-0.1022	-0.124	.
	.	(0.0133)	(0.0159)	.
Midwest	.	-0.0089	-0.0662	.
	.	(0.0123)	(0.0154)	.
Border States	.	-0.0208	-0.0742	.
	.	(0.0155)	(0.0151)	.
West	.	-0.0638	-0.0992	.
	.	(0.0262)	(0.0178)	.
E Sth Cent	.	0.025	0.0256	0.0278
	.	(0.0104)	(0.0085)	(0.0084)
W Sth Cent	.	0.0271	0.052	0.058
	.	(0.0373)	(0.0135)	(0.0109)
Military presence, 1870	.	.	-0.0291	-0.0279
	.	.	(0.0108)	(0.0150)
Military x Confederacy	.	.	-0.0465	.
	.	.	(0.0206)	.
Republican Share 1872	.	.	0.0006	-0.0004
	.	.	(0.0002)	(0.0002)
Republican x Confederacy	.	.	-0.001	.
	.	.	(0.0003)	.
Urban Share	.	.	-0.0885	-0.1784
	.	.	(0.0123)	(0.0255)
Constant	0.2583	0.3056	0.3494	0.3545
	(0.0064)	(0.0108)	(0.0122)	(0.0119)
Adj. R-sq.	0.043	0.053	0.061	0.052
N	262373	262373	262373	41879

Notes: The sample consists of men who were 0-18 in 1870 and lived with a parent head of household who did not own real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Table 6: Potential Mediating Variables

	Value per acre	Top 10 wealth share	Black prop.	Literate	Interstate migrant
High cotton intensity	-6.4229	0.0194	0.1344	-0.0204	-0.0185
	(1.2007)	(0.0084)	(0.0163)	(0.0177)	(0.0120)
E Sth Cent	3.9382	0.0092	-0.0261	0.0249	0.0584
	(1.0490)	(0.0098)	(0.0197)	(0.0219)	(0.0123)
W Sth Cent	5.8585	0.0000	-0.0536	0.0279	0.0737
	(1.5296)	(0.0114)	(0.0212)	(0.0233)	(0.0173)
Urban share	22.757	0.1616	0.0422	0.1612	0.0973
	(6.8835)	(0.0178)	(0.0521)	(0.0467)	(0.0580)
Constant	9.6973	0.8707	0.4226	0.1414	0.2288
	(0.8441)	(0.0073)	(0.0140)	(0.0151)	(0.0104)
Adj. R-sq.	0.413	0.086	0.102	0.010	0.009
N	24102	25025	25035	25035	25035
Mean dep. var.	8.7237	0.8991	0.5094	0.1496	0.2531

Notes: Sample is restricted men 18 to 40 years old and residing a state of the former Confederacy in 1870. The reference subregion is the South Atlantic. All variables pertain to 1870, except for migration which pertains to 1870-1900. All regressions include age indicators. Regressions are weighted to adjust for selection into linkage. Standard errors are clustered at the 1870 county level.

Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Appendix Table 1: Summary Statistics, Intragenerational Samples

	Black sample		White sample	
	mean	sd	mean	sd
Mobility into Ownership	0.3014	0.4589	0.5463	0.4978
High Cotton Intensity	0.6444	0.4787	0.1014	0.3019
Northeast	0.0280	0.1651	0.3591	0.4797
Midwest	0.0264	0.1602	0.3230	0.4676
Border States	0.1004	0.3005	0.1251	0.3309
West	0.0007	0.0258	0.0137	0.1162
E Sth Cent	0.2655	0.4416	0.0584	0.2346
W Sth Cent	0.1519	0.3589	0.0364	0.1874
Confederate	0.8446	0.3623	0.1790	0.3834
Military Presence 1870	0.1102	0.3132	0.1909	0.3930
Republican Votes 1872	56.6172	17.5502	55.0519	13.7790
Urban Share of County Pop.	0.0872	0.2074	0.2237	0.3009
Age, 1870	26.4251	6.4542	24.6957	5.7328
N	28,146		346,419	

Notes: This is the sample for the analysis of intra-generational upward mobility into property ownership. Observations were ages 18 to 40 in 1870 and did not report owning real property in 1870. Mobility into ownership equals one if the observation was a home owner by 1900 (as defined in the text). Observations are weighted to adjust for selection into linkage as described in the main text.

Sources: See descriptions of sources and additional definitions of variables in section 3 of the main text.

Appendix Table 2: Augmented Regressions, Black Intra-generational Mobility

	All	All	All	Confed	High Cot. Int.
High cotton intensity	-0.115	-0.1179	-0.1195	-0.1161	.
	(0.0095)	(0.0136)	(0.0126)	(0.0128)	.
Northeast	.	-0.0849	-0.058	.	.
	.	(0.0257)	(0.0628)	.	.
Midwest	.	0.0581	0.0297	.	.
	.	(0.0248)	(0.0593)	.	.
Border	.	0.0165	0.0213	.	.
	.	(0.0181)	(0.0469)	.	.
West	.	-0.1606	-0.1719	.	.
	.	(0.0646)	(0.0926)	.	.
E Sth Cent	.	0.0022	-0.0056	-0.0051	0.0224
	.	(0.0110)	(0.0107)	(0.0108)	(0.0099)
W Sth Cent	.	0.0388	0.0227	0.0228	0.0873
	.	(0.0167)	(0.0146)	(0.0147)	(0.0136)
Military presence, 1870	.	.	-0.077	-0.011	-0.0216
	.	.	(0.0227)	(0.0204)	(0.0231)
Military x Confederacy	.	.	0.0696	.	.
	.	.	(0.0299)	.	.
Republican Share 1872	.	.	-0.001	-0.0008	-0.0008
	.	.	(0.0009)	(0.0003)	(0.0002)
Republican x Confederacy	.	.	0.0002	.	.
	.	.	(0.0009)	.	.
Urban Share	.	.	-0.106	-0.12	-0.0727
	.	.	(0.0319)	(0.0430)	(0.0502)
Share of Child. in School	.	.	0.1561	0.1482	0.154
	.	.	(0.0557)	(0.0714)	(0.0862)
Share of Adults Literate	.	.	-0.0248	-0.0228	-0.0525
	.	.	(0.0234)	(0.0251)	(0.0259)
Literate	.	.	0.0358	0.0422	0.0483
	.	.	(0.0093)	(0.0107)	(0.0123)
Urban	.	.	-0.035	-0.0185	0.0241
	.	.	(0.0178)	(0.0239)	(0.0234)
Farmer	.	.	0.0157	0.0041	-0.0126
	.	.	(0.0129)	(0.0140)	(0.0154)
Farm Laborer	.	.	-0.0405	-0.0526	-0.05
	.	.	(0.0094)	(0.0106)	(0.0126)
Positive personal wealth	.	.	0.0601	0.0543	0.0582
	.	.	(0.0096)	(0.0105)	(0.0107)
Very high cotton intensity	.	.	.	.	-0.0789
	.	.	.	.	(0.0106)
Constant	0.376	0.3707	0.4339	0.441	0.3532
	(0.0077)	(0.0108)	(0.0186)	(0.0192)	(0.0179)
Adj. R-sq.	0.017	0.019	0.029	0.023	0.022
N	26689	26689	26689	22908	17403

Notes: The sample consists of men who were 18-40 in 1870 and did not report owning real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Standard errors are clustered at the county level. Share of children in school and share of adults who are literate are race-specific county-level variables. Literate, urban, farmer, and farm laborer pertain to the individual in 1870. The last column is restricted to "high cotton

intensity" counties; the "very high cotton intensity" variable (last row) is an indicator for the top quartile of counties in terms of cotton-production per capita in the South.

Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Appendix Table 3: Summary Statistics, Inter-generational Mobility Samples

	Black sample		White sample	
	mean	sd	mean	sd
Mobility into Ownership	0.1756	0.3805	0.2684	0.4431
High Cotton Intensity	0.6792	0.4668	0.1018	0.3023
Northeast	0.8769	0.3286	0.1934	0.3950
Midwest	0.0953	0.2937	0.2834	0.4506
Border States	56.4301	17.8730	54.0500	13.7580
West	0.0709	0.1871	0.2968	0.3557
E Sth Cent	0.0179	0.1325	0.3608	0.4802
W Sth Cent	0.0183	0.1340	0.2872	0.4525
Confederate	0.0865	0.2811	0.1396	0.3465
Military Presence 1870	0.0005	0.0219	0.0190	0.1367
Republican Votes 1872	0.2807	0.4494	0.0639	0.2446
Urban Share of County Pop.	0.1754	0.3803	0.0471	0.2117
Age, 1870	6.7448	5.3882	6.0227	5.4221
N	33,673		262,373	

Notes: This is the sample for the analysis of inter-generational upward mobility into property ownership. Observations were ages 0 to 18 in 1870 and lived with parent heads of household who did not report owning real property in 1870. Mobility into ownership equals one if the son was a home owner by 1900 (as defined in the text). Observations are weighted to adjust for selection into linkage as described in the main text.
Sources: See descriptions of sources and additional definitions of variables in section 3 of the main text.

Appendix Table 4: Augmented Regressions, Black Inter-generational Mobility

	All	All	All	Confed	High Cot. Int.
High cotton intensity	-0.0351	-0.0502	-0.0525	-0.0528	.
	(0.0071)	(0.0100)	(0.0089)	(0.0091)	.
Northeast	.	-0.1057	-0.0636	.	.
	.	(0.0151)	(0.0501)	.	.
Midwest	.	-0.0203	-0.0327	.	.
	.	(0.0174)	(0.0454)	.	.
Border	.	-0.0163	-0.0221	.	.
	.	(0.0140)	(0.0353)	.	.
West	.	-0.21	-0.1887	.	.
	.	(0.0148)	(0.0583)	.	.
E Sth Cent	.	-0.0051	-0.0082	-0.0073	0.0109
	.	(0.0078)	(0.0076)	(0.0076)	(0.0076)
W Sth Cent	.	0.0365	0.0295	0.0298	0.0654
	.	(0.0119)	(0.0107)	(0.0105)	(0.0103)
Military presence, 1870	.	.	-0.0823	-0.0006	-0.0043
	.	.	(0.0220)	(0.0128)	(0.0121)
Military x Confederacy	.	.	0.0739	.	.
	.	.	(0.0232)	.	.
Republican Share 1872	.	.	-0.0001	-0.0003	-0.0004
	.	.	(0.0007)	(0.0002)	(0.0002)
Republican x Confederacy	.	.	-0.0002	.	.
	.	.	(0.0007)	.	.
Urban Share	.	.	-0.0514	-0.0788	-0.0523
	.	.	(0.0257)	(0.0298)	(0.0321)
Share of Child. in School	.	.	0.0221	0.0319	0.0627
	.	.	(0.0439)	(0.0526)	(0.0646)
Share of Adults Literate	.	.	-0.003	-0.0019	-0.0151
	.	.	(0.0180)	(0.0195)	(0.0186)
In School	.	.	0.0186	0.0226	0.039
	.	.	(0.0102)	(0.0120)	(0.0149)
Urban	.	.	-0.0224	-0.0229	-0.0142
	.	.	(0.0130)	(0.0158)	(0.0163)
Head, Positive Pers. Wealth	.	.	0.014	0.0084	0.0075
	.	.	(0.0060)	(0.0065)	(0.0067)
Head, Literate	.	.	0.002	0.007	0.0068
	.	.	(0.0070)	(0.0077)	(0.0095)
Head, Female	.	.	-0.0155	-0.0179	-0.0192
	.	.	(0.0071)	(0.0074)	(0.0083)
Head, Farmer	.	.	0.0036	0.0025	-0.0092
	.	.	(0.0095)	(0.0104)	(0.0117)
Head, Farm Laborer	.	.	-0.0244	-0.026	-0.0185
	.	.	(0.0068)	(0.0076)	(0.0091)
Very High Cotton Intensity	.	.	.	.	-0.0543
	.	.	.	.	(0.0078)
Constant	0.1994	0.2084	0.2415	0.2444	0.215
	(0.0058)	(0.0080)	(0.0128)	(0.0132)	(0.0142)
Adj. R-sq.	0.021	0.024	0.027	0.025	0.025
N	33650	33650	33650	29811	23074

Notes: The sample consists of men who were 0-18 in 1870 and lived with a parent head of household who did not own real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Standard errors are clustered at the county level. Share of children in school and share of adults who are literate are race-specific county-level variables in 1870. The variables for literate, urban, farmer, and farm laborer pertain to the individual in 1870. Very high cotton intensity is the top quartile of cotton-production per capita among southern counties.

Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Appendix Table 5: Mobility and "Very High" Cotton Intensity, Sample Restricted to High Intensity Cotton Counties

	Black Intra-gen	Black Inter-gen	White Intra-gen	White Inter-gen
Very High Cotton Intensity	-0.0883	-0.0566	-0.0251	0.002
	(0.0107)	(0.0078)	(0.0081)	(0.0107)
E Sth Cent	0.0288	0.012	0.0335	0.0423
	(0.0097)	(0.0077)	(0.0094)	(0.0120)
W Sth Cent	0.1063	0.0689	0.0885	0.0896
	(0.0135)	(0.0103)	(0.0098)	(0.0144)
Military presence, 1870	-0.0087	0.0006	-0.0377	-0.0361
	(0.0237)	(0.0119)	(0.0212)	(0.0198)
Republican Share 1872	-0.0006	-0.0003	-0.0003	-0.0006
	(0.0002)	(0.0002)	(0.0002)	(0.0003)
Urban Share	-0.0082	-0.0439	-0.0797	-0.0815
	(0.0442)	(0.0292)	(0.0440)	(0.0370)
Constant	0.325	0.203	0.5735	0.3488
	(0.0144)	(0.0116)	(0.0121)	(0.0175)
Adj. R-sq.	0.016	0.024	0.007	0.046
N	18268	23092	28572	22048

Notes: The sample consists of men residing in "high cotton intensity" counties of the former Confederacy in 1870. That is, all men resided in counties with above-median cotton-per-capita production in 1870. The coefficient on "very high cotton intensity" is the conditional difference in mobility into ownership between the top quartile and next quartile of cotton-per-capita.
Sources: Linked sample description and variable definitions are provided in the main text.

Appendix Table 6: Correlates of Black Intra-generational Mobility into Property Ownership, Zimran Links

	All	All	All	Confed.
High cotton intensity	-0.1134	-0.1304	-0.137	-0.1366
	(0.0107)	(0.0168)	(0.0145)	(0.0144)
Northeast	.	-0.0949	-0.0337	.
	.	(0.0293)	(0.0643)	.
Midwest	.	0.0551	0.0624	.
	.	(0.0267)	(0.0594)	.
Border States	.	-0.0094	-0.0206	.
	.	(0.0190)	(0.0488)	.
West	.	-0.1246	-0.1185	.
	.	(0.1217)	(0.1265)	.
E Sth Cent	.	0.0107	0.0129	0.0129
	.	(0.0129)	(0.0128)	(0.0128)
W Sth Cent	.	0.0567	0.057	0.0569
	.	(0.0204)	(0.0171)	(0.0171)
Military presence, 1870	.	.	-0.0784	0.0074
	.	.	(0.0247)	(0.0272)
Military x Confederacy	.	.	0.0873	.
	.	.	(0.0357)	.
Republican Share 1872	.	.	-0.0003	-0.0007
	.	.	(0.0009)	(0.0003)
Republican x Confederacy	.	.	-0.0004	.
	.	.	(0.0010)	.
Urban Share	.	.	-0.1029	-0.0987
	.	.	(0.0421)	(0.0623)
Constant	0.3817	0.3837	0.433	0.4321
	(0.0086)	(0.0130)	(0.0203)	(0.0202)
Adj. R-sq.	0.016	0.019	0.023	0.019
N	19757	19757	19757	16760

Notes: The sample consists of men who were 18-40 in 1870 and did not report owning real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. The Northeast and West regions correspond to usual census delineations. "Border states" (DE, MD, DC, WV, KY, and MO) did not join the Confederacy. The West South Central, East South Central, and South Atlantic states were members of the former Confederacy (i.e., not in the "border state" category). Urban share pertains to the county's whole population. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Appendix Table 7: Correlates of Black Inter-generational Mobility into Property Ownership, Zimran Links

	All	All	All	Confed.
High cotton intensity	-0.0399	-0.0591	-0.063	-0.0632
	(0.0078)	(0.0115)	(0.0101)	(0.0101)
Northeast	.	-0.1157	-0.0135	.
	.	(0.0174)	(0.0526)	.
Midwest	.	0.0071	0.062	.
	.	(0.0199)	(0.0489)	.
Border States	.	-0.0277	0.0101	.
	.	(0.0149)	(0.0405)	.
West	.	-0.1284	-0.0253	.
	.	(0.0952)	(0.0989)	.
E Sth Cent	.	-0.0013	-0.0006	-0.0004
	.	(0.0093)	(0.0090)	(0.0090)
W Sth Cent	.	0.0353	0.0347	0.0348
	.	(0.0125)	(0.0107)	(0.0107)
Military presence, 1870	.	.	-0.0919	-0.008
	.	.	(0.0221)	(0.0146)
Military x Confederacy	.	.	0.0819	.
	.	.	(0.0230)	.
Republican Share 1872	.	.	-0.0011	-0.0004
	.	.	(0.0008)	(0.0002)
Republican x Confederacy	.	.	0.0006	.
	.	.	(0.0008)	.
Urban Share	.	.	-0.0456	-0.0502
	.	.	(0.0288)	(0.0378)
Constant	0.2136	0.2255	0.256	0.256
	(0.0064)	(0.0091)	(0.0133)	(0.0133)
Adj. R-sq.	0.02	0.023	0.025	0.023
N	25547	25547	25547	22497

Notes: The sample consists of men who were 0-18 in 1870 and lived with a parent head of household who did not own real estate. The dependent variable equals 1 if the individual was recorded as a homeowner in 1900. Regressions are weighted to adjust for selection into linkage. The reference region consists of the states of the South Atlantic census region that joined the Confederacy. Urban share pertains to the county's whole population. Standard errors are clustered at the county level.
Sources: See Section 3 of the main text for discussion of sources and variable definitions.

Appendix Table 8: Reduced Form and IV Analysis, Sample of Alabama Black Men, 1870

	Reduced form	First stage for bales p.c.	IV: Mobility into ownership	First stage for very high cotton intensity	IV: Mobility into ownership
Alabama Black Belt	-0.0795	0.1723		0.4355	
	(0.0174)	(0.0603)		(0.0965)	
Bales per capita			-0.4565		
			(0.1462)		
Very high cotton intensity					-0.1806
					(0.0355)
Constant	0.2637	0.4766	0.3563	0.5852	0.2444
	(0.0147)	(0.0434)	(0.0877)	(0.0996)	(0.0443)
Adj. R-sq.	0.012	0.15	0.004	0.221	0.013
N	3155	3155	3155	3155	3155

Notes: The sample consists of men who were 18-40 in 1870 and did not own real estate. Alabama counties are coded zero or one for "black belt" according to the USDA's Soil Associations map (Turnure 1938) in Appendix Figure 3. We compared this map to the 1870 county boundaries in Thorndale and Dollarhide (1987). Regressions control for a quadratic in age. Standard errors are clustered at the 1870 county level. The first-stage F-statistic in column 2 is 8.14 and in column 4 is 20.33. We use the "very high cotton intensity" category here (indicator for top quartile in cotton bales per capita) because nearly all Alabama black men are in the broader group of "high intensity" counties (above the southern median in cotton production per capita).

Sources: See descriptions of sources and additional definitions of variables in section 3 of the main text.

Appendix Figure 1: Binscatter, Intra-generational Mobility and Cotton Intensity, Black Men
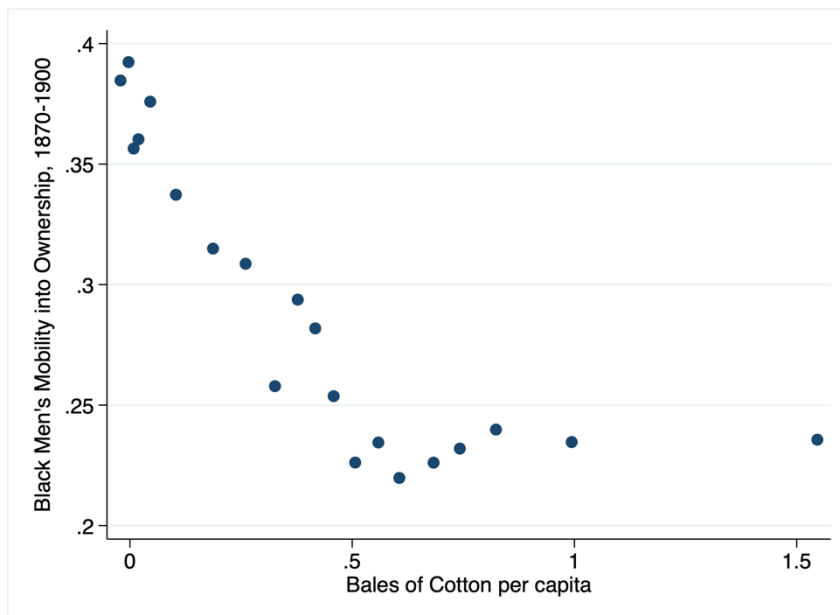

Notes: This plots intra-generational upward mobility rates for black men observed in 1870 and 1900. The sample is restricted to states of the former Confederacy. The binscatter absorbs age fixed effects.
Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion is provided in Section 3 of the main text.

Appendix Figure 2: Binscatter, Inter-generational Mobility and Cotton Intensity, Black Sons
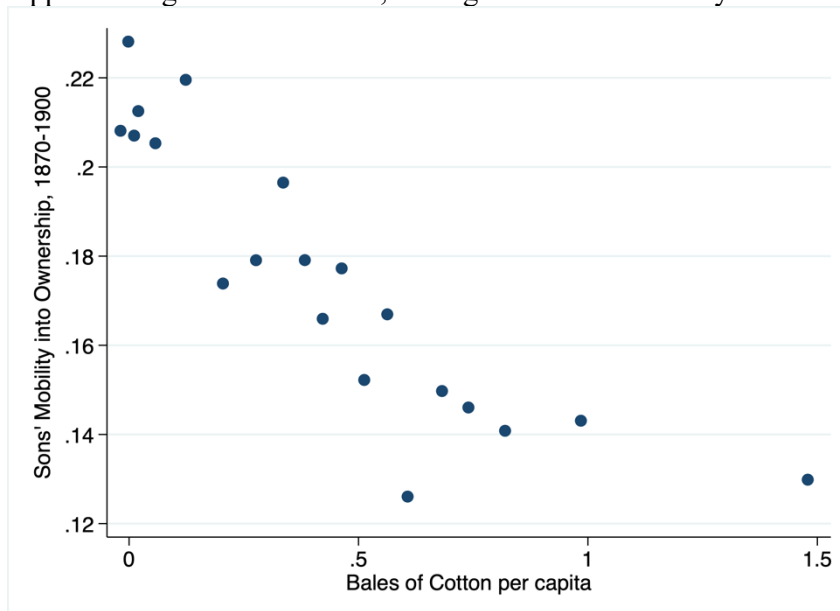
Notes: This plots inter-generational upward mobility rates for black sons observed in 1870 and 1900. The sample is restricted to states of the former Confederacy. The binscatter absorbs age fixed effects.
Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion is provided in Section 3 of the main text.
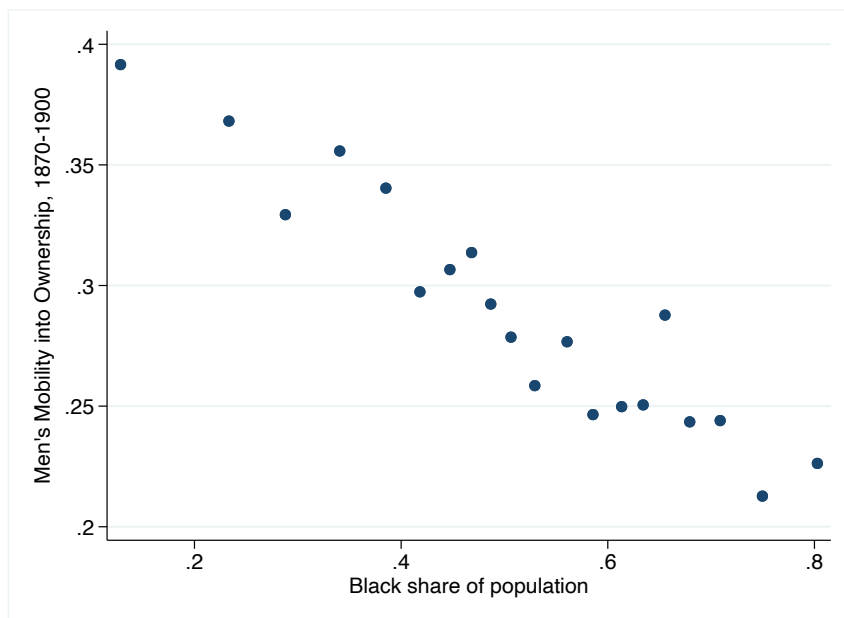
Appendix Figure 3: Alabama Counties in "Soil Associations of the United States" Map
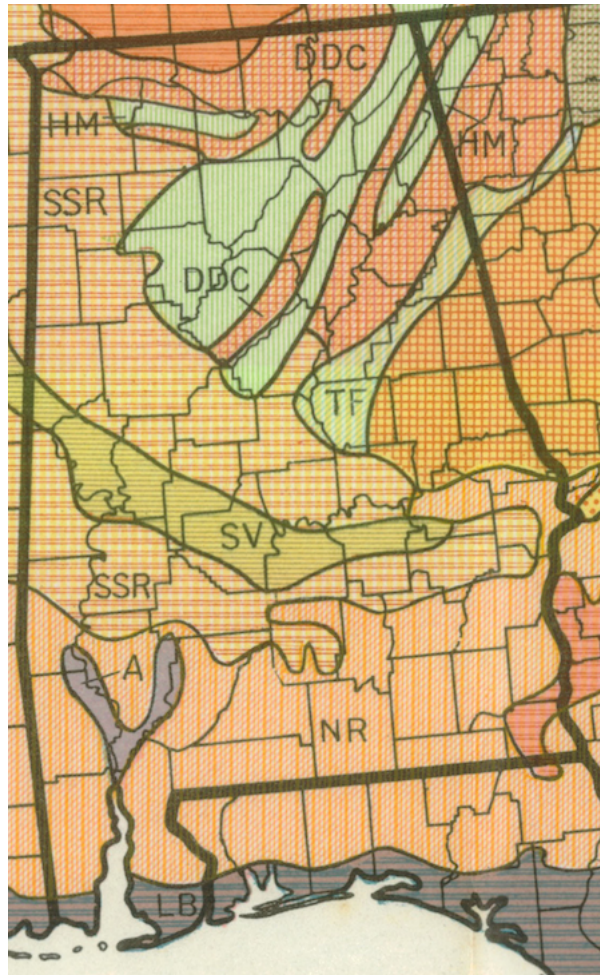
Notes: We coded the counties covered in part by the SV region ("Sumter-Vaiden") as "black belt" counties in Appendix Table 5's analysis. This includes, from west to east: Pickens, Greene, Hale, Perry, Dallas, Lowndes, Montgomery, Macon, and Bullock counties (based on 1870 boundaries in Thorndale and Dollarhide 1987). A small portion of eastern Sumter County falls within the SV band above. Recoding it to "black belt" does not alter the qualitative results described in the text.
Source: Turnure, Robert F. (1938), "Soil Associations of the United States." USDA, Bureau of Chemistry and Soils.

Appendix Figure 4: Binscatter, Intra-generational Mobility and Black Population Share, Black Men

Notes: This plots intra-generational upward mobility rates for black men observed in 1870 and 1900. The sample is restricted to states of the former Confederacy. The binscatter absorbs age fixed effects.
Sources: Links are from Abramitzky et al. (2020). Complete count census files are from Ruggles et al. (2023). More discussion is provided in Section 3 of the main text.