The Social Construction of Race during Reconstruction

Anjali Adukia
University of Chicago

Richard Hornbeck
University of Chicago

Daniel Keniston
Louisiana State University

Benjamin Lualdi
University of Chicago

June 2025

Abstract

We examine the social construction of race during the United States' Reconstruction Era, a critical juncture between slavery and Jim Crow segregation. We show that people with the same detailed skin tone, recorded by the Freedman's Bank (1865-1874), were more likely racialized as White or Mulatto by the 1870 Census if they were wealthier or literate. Our estimates reveal the historical construction of race in a period of unfulfilled potential for social transformation, setting a path for racial segregation and continued racial stratification. This endogenous historical construction of race also has implications for analyses that compare individuals by race or include race as a control variable.

For comments and suggestions, we are grateful to Desmond Ang and Ellis Monk for their conference discussions, in addition to comments and suggestions from Jason Baron, Leah Boustan, Eric Chyn, John Clegg, David Figlio, Martin Fiszbein, Dania Francis, Larry Katz, Victor Ray, Evan Rose, Jonathon Roth, Ed Vytlacil, and other colleagues and seminar participants at DePaul, LMU, LSE, NBER (Development of the American Economy; Race and Stratification; Culture and Institutions), RIDGE-LACEA, UChicago, Warwick, and Yale. We are grateful to our data teams at Digital Divide Data and the University of Chicago, as well as to Lukas Althoff, Eric Chyn, John Clegg, Kareem Haggag, and Bryan Stuart for sharing data and code. This research was funded in part by the Neubauer Family Faculty Fellowship.

The United States' social structure was in flux after slavery and emancipation. The Reconstruction Era (1865–1877) saw efforts to integrate formerly-enslaved people into broader social, economic, and political institutions, until backlash gave rise to state-supported segregation in the Jim Crow Era (1877-1964). Without the legal distinction between "free" and "enslaved," segregation relied on constructed racial groupings to determine who would be what race – and what race was.

In this paper, we show that people with the same physical skin tone were racialized differently in the 1870 Census based on their wealth and other proxies for socioeconomic status (SES). This social construction of race, during the critical period after emancipation, helped set the stage for racial segregation and continued racial stratification. The endogenous selection into racial categories also complicates the interpretation of within-race and between-race differences, particularly in understating the association between socioeconomic status and skin color.

Our analysis uses detailed skin tone data collected by the Freedman's Savings Bank (1865-1874), where Bank clerks recorded depositor "complexion" and other information to help identify customers when they returned to the bank. The recorded complexion data included skin tone (e.g., dark, dark brown, brown, light brown, light) and occasionally other physical descriptors (e.g., distinctive scars or pox marks). We hand-link these Freedman Bank records to the 1870 Census, in which enumerators racially classified the depositors as "Black," "Mulatto," or "White," along with recording depositors' wealth and literacy. Although Census workers were instructed to classify race based purely on perceived ancestry, our results reveal that their enumeration reflected a racial classification system constructed not just on physical characteristics but also a broad set of socioeconomic measures.

Table 1 provides a motivating tabulation of the data, comparing depositors' complexion from the Freedman's Bank and their recorded race in the 1870 Census. Darker skin tones are associated with being racialized as Black (along the diagonal in Columns 2 – 4), but our main focus is on the heterogeneity across rows: for people in the same complexion group, the systematic variation in who was racialized as Black, Mulatto, or White.[1] We also examine the variation down columns associated with "colorism": within Census race, the association between skin tone and SES, which we show understates the true association between skin tone and SES when Census racial assignment is endogenous to SES.

[1]Note that "Yellow" was a descriptor at the time for a light-skinned African American person. The Freedman branch in New York City attracted immigrant depositors, but Freedman branches were generally located across the South which had less immigration. Almost all immigrants are white in the complexion data and in the Census (e.g., people born in Italy were 99.7% "White" in the full 1870 Census), such that our estimates are not sensitive to excluding the Freedman Branch in New York City or all foreign-born people in the Census.

We find evidence for the social construction of race during Reconstruction: among people with the same skin tone, those with higher wealth or literacy are substantially more likely to be racialized as White or Mulatto. We estimate selected racialization along each of three margins (White or Mulatto vs. Black; White vs. Mulatto or Black; and Mulatto vs. Black). We find the largest effects among people with light skin tones, for whom perceived race is especially sensitive to their wealth and literacy. Wealth and literacy both matter, independently, along with a substantial influence from their interaction.

Our interpretation is not that wealth and literacy alone are directly causing someone to be considered White; rather, wealth, literacy, and other proxies for SES are jointly influencing how people are racialized — particularly those with light skin tones. We show that higher status occupations are also associated with being racially classified as White or Mulatto. Depositors with traditionally Black names, and those unable to sign their name on the bank account forms, are also more likely racialized as Black by Census enumerators.

Building on our baseline estimates comparing people within the same Freedman Bank branch, we find a remarkably pervasive influence of wealth and literacy on racial assignment across counties. Our data include depositors from 27 Freedman Bank branches (Figure 1), which cover the larger cities in the South at the time. We estimate some heterogeneity in how racial determinations varied with places' average Black wealth, Black literacy, historical racial violence (Chyn, Haggag and Stuart, 2024), and modern intergenerational mobility by race (Chetty et al., 2024), but the overall effects of SES on racialization are substantively consistent across places.

We also find a pervasive influence across demographic groups in the effects of wealth and literacy on racial assignment. We estimate similar effects by gender and for adults and children, and stronger effects for household heads. Even migration did not substantially alter this racial assignment, as we estimate similar effects of wealth and literacy among those living in their birth state and those living in another state.

We devote a great deal of attention to record linkage, which has the potential to bias estimates. We hand-link all Freedman Bank records to the contemporary 1870 Census using biographical information for the depositor, along with details on other household members noted in bank records, which gives us greater confidence in linkage accuracy. We iterate on these hand-links with a machine-learning model. Our estimates are not sensitive to restricting the sample to links with increasingly supportive supplemental information or a higher machine-learning match probability.

We also bound the potential bias from "reverse causality" and unmeasured physical characteristics, whereby unmeasured indicators of African ancestry are correlated with socioeconomic status. For example, if skin tone were unmeasured or measured only imprecisely, then

other characteristics that make someone appear more White may allow them to accumulate greater wealth rather than greater wealth causing them to be classified as White in the Census. Our bounding exercise leverages the observed influence of our detailed skin tone data, compared to less-detailed skin tone categories. The estimated bounds suggest that reverse causality and unmeasured physical characteristics would not quantitatively account for our main results, reinforcing the important role of wealth and other proxies for SES in how people were racialized. Conversely, if our observed proxies for SES are correlated with unmeasured *social* cues, such as attire or speech patterns, this remains consistent with the social construction of racial categories.

If skin tone is measured with error, racial categorization may capture some unobserved physical variation in skin tone. We examine this using a sub-sample of depositors with two separate measures of skin tone from opening an account twice. For these depositors, we find that Bank clerks recorded similar measures of skin tone, and estimate little influence of classical measurement error in skin tone when instrumenting for one measure with the other.

We also explore the implications of biased skin tone measurement, from the Freedman's Bank clerk recording lighter skin tones when people appeared wealthier at the Bank, or skin tone itself becoming darker in response to lower SES. Both channels would create a *stronger* relationship between measured skin tone and Census wealth, rather than our estimated attenuation from endogenous racial assignment. Further, if the Bank clerk recorded lighter skin tones for wealthier people, then it would would bias downward our estimated effect of wealth on race among people with the same recorded skin tone.

A primary implication of race being socially constructed during Reconstruction, along SES boundaries in addition to physical boundaries, is to highlight the role of economic class in supporting the path of racial segregation and continued racial stratification. After early political and economic successes during Reconstruction, backlash led to the abandonment of Reconstruction efforts (Logan, 2020; Chyn, Haggag and Stuart, 2024; Frieden, Grossman and Lowery, 2024) and racism adapted (Engerman, 2003). A dichotomous Black-White racial categorization emerged not only through directed efforts to support White social, economic, and political control in the absence of enslavement (Harris, 1993; Washington, 2011), but was also reinforced through Black collectivism to counter the negative effects of racial segregation (Reece, 2021). Segregation became entrenched through the Jim Crow era, limiting economic mobility and convergence in racial wealth gaps even after the Jim Crow era ended (Chyn, Haggag and Stuart, 2022; Althoff and Reichardt, 2024; Derenoncourt et al., 2024). The systemic nature of continued racial divisions and disparities are highlighted in stratification economics (Darity Jr., 2005; Darity Jr., Mason and Stewart, 2006; Darity Jr., Hamilton and Stewart, 2015; Chelwa, Hamilton and Stewart, 2022; Bayer, Charles and Derenoncourt, 2025).

Our estimates highlight that economic inequality can be seen as both a consequence *and* a historical source of racial stratification.

Another implication of race being endogenous is to elevate the importance of skin tone itself, beyond race, which we show is substantively understated when "controlling for race" or splitting the sample by race. In our data, darker skin tones are associated with lower wealth across the full population. Within Census race, however, there is a substantially attenuated relationship between skin tone and wealth. We develop and simulate a Heckman-style selection model to account for this pattern: among people classified as Black in the Census, people with light brown skin are often poor because if they were wealthier then they would often not be considered Black in the Census. Similarly, among White people in the Census, people with light brown skin are often wealthy because if they were poorer then they would often not be considered White in the Census. A related pattern we see in the data is that excluding people classified as White race in the Census understates the influence of skin color, as wealthy people with light brown skin become selectively omitted from the remaining sample of people classified as Mulatto or Black. In contrast, excluding people with white skin tone preserves the substantial association between SES and skin color found in the full population.

Finally, we show that endogenous racial assignment also complicates the interpretation of estimated differences by race, though in ways that are difficult to anticipate. Within our sample, selective reclassification lowers measured Black wealth, but also lowers average White wealth among Freedman Bank depositors because relatively wealthy people with light brown skin were still poorer than the average White depositor. More broadly, the effect of racial reclassification depends both on the wealth of those reclassified, as well as the relative numbers of individuals affected.

Racial assignment in the Census provides a snapshot of how people were racialized in society at this critical historical juncture for a group of individuals whose physical skin tone was recorded in detail. We cannot estimate the consequences of racial assignment for these particular people and their descendants, but we know that one's assigned race substantially impacted how they were treated by the law and society more generally. While the Census itself was not used to assign access to schools or other public goods, surveys can make characteristics salient and affect participants' behavior (Zwane et al., 2011).

This paper advances a large literature on the social construction of race and its consequences across Anthropology, Critical Race Theory, Economics, Health, History, Law, Political Science, Psychology, and Sociology.[2] We do so by using uniquely-detailed historical data on

[2]See, for example, Boas (1912); Montagu (1945); Rogers (1952); Hahn, Mulinare and Teutsch (1992); Haney López (1994); Witzig (1996); Bonilla-Silva (1997); Zuberi (2001); Darity Jr. (2005); Smedley and Smedley (2005); Goldsmith, Hamilton and Darity Jr. (2007); Penner and Saperstein (2008); Davis (2010); Charles and Guryan (2011); Freeman et al. (2011); Morning (2011); Saperstein and Penner (2012); Saperstein

physical skin tone, which allow us to quantify the early fluidity of race in American society in the first Census after emancipation. Modern racial perceptions, of oneself and others, stem from this history — which began before Reconstruction, but were becoming re-codified in this critical period after emancipation in setting the stage for Jim Crow segregation.

While our work focuses on variation across individuals in how people are racialized in a given social context, a related literature explores how a given person's race can vary over time with changing life circumstances. Some authors emphasize how race affects SES and others emphasize how SES affects race, using historical Census-to-Census links to examine changes in linked individuals' race from Black to Mulatto (Saperstein and Gullickson, 2013), from Black to White (Dahis, Nix and Qian, 2020), and from Mulatto to White (Mill and Stein, 2016). A modern literature analyzes whether individuals change their self-reported race or how others perceive them as their SES changes (Penner and Saperstein, 2008; Saperstein and Penner, 2012, 2016), though other authors emphasize limited fluidity in a given person switching across Black and White racial categories (Alba, Insolera and Lindeman, 2016; Kramer, DeFina and Hannon, 2016; Foy, Ray and Hummel, 2017). We emphasize that wealth, literacy, and other proxies for SES can influence what race a person is considered in society, regardless of whether a given person's race is fluid or rarely changes once assigned. Unlike the intertemporal literature on race fluidity, we analyze cross-person racial fluidity conditional on skin tone, and can thereby examine the effect of SES across individuals with a similar physical appearance. Through using contemporaneous hand-linked data with additional household information, we can also mitigate the potential influence of linkage error, and the depositor records provide separate SES measures whose effects would be attenuated by false matches.

A large literature explores the influence of skin tone in other countries, particularly in Latin America, where racial categories are often thought to be more fluid than in the United States (Lovell and Wood, 1998; Villarreal, 2010; Telles and Paschel, 2014; Rangel, 2015; Monk Jr., 2016; Davenport, 2020; Laudares and Valencia Caicedo, 2023; Woo-Mora, 2024). While racial fluidity in Latin America is often contrasted with more rigid racial categories in the United States, with the long-presumed application of a "one-drop rule," we emphasize that racial categories were historically fluid in the Reconstruction-era United States and formed based on both SES and physical characteristics. Further, while this literature primarily explores differences in socioeconomic status by skin tone categories, controlling for race, our analysis shows that classified race is an *outcome* in the United States – influenced by

and Gullickson (2013); Penner and Saperstein (2013); Omi and Winant (2014); Darity Jr., Hamilton and Stewart (2015); Hersch (2018); Reece (2019); Dahis, Nix and Qian (2020); Davenport (2020); Ioannidis, Powe and Yancy (2021); Chelwa, Hamilton and Stewart (2022); Francis, Hardy and Jones (2022); Abramitzky et al. (2023); Rose (2023).

socioeconomic status among people with the same detailed physical skin tone.[3]

Discrimination based on skin tone is referred to as colorism, which typically manifests in people with lighter skin receiving preferential treatment.[4] Lighter skin tones have been associated with differing societal treatment in the United States, from enslavement (Keith and Herring, 1991; Bodenhorn, 2015; Reece, 2018) through the present day (Wade, Romano and Blue, 2004; Burch, 2015).[5] We show these within-race relationships can substantially *understate* the true association with skin tone when race itself is endogenous. For example, estimates that wages are higher among lighter-skinned African Americans (as in Goldsmith, Hamilton and Darity Jr. (2006, 2007) and Kreisman and Rangel (2015)) would understate the effect of skin tone if being classified as African American is influenced by income.[6]

While there is increasing recognition that "race is a social construct," general statistical practice is still to "control for race" along with other characteristics (Sen and Wasow, 2016; Rose, 2023). Our estimates show the historical origins of why examining differences in outcomes, within racial groups, is complicated to interpret when racial groups are themselves an outcome.[7] The statistical implications will vary by context, depending on whether racial data are self-reported or enumerator-reported and how much each respond to SES factors. When race is endogenous and skin tone is exogenous, however, we discuss potential approaches

[3]McGee (2025) develops a theoretical model for how elites use skin color in the construction of race to establish and maintain their socioeconomic position, which is consistent with differences by Census race in the US and differences by skin tone in Brazil within race.

[4]Colorism has been documented in many settings, both within and across racial groups, including within families and ethnically homogeneous groups without separate racial groupings (Keith and Herring, 1991; Landor et al., 2013; Dixon and Telles, 2017). Skin color predicts life outcomes including occupation, educational attainment, criminal legal system involvement, mental health, and marital outcomes (Johnson, 1934; Ransford, 1970; Harburg et al., 1978; Hughes and Hertel, 1990; Seltzer and Smith, 1991; Johnson, Bienenstock and Stoloff, 1995; Krieger, Sidney and Coakley, 1998; Klonoff and Landrine, 2000; Bowman, Muhammad and Ifatunji, 2004; Majumdar, 2004; Goldsmith, Hamilton and Darity Jr., 2006; Hersch, 2006; Gyimah-Brempong and Price, 2006; Monk Jr., 2014; Burch, 2015; Diette et al., 2015; Hunter, 2016; Blake et al., 2017; Dixon and Telles, 2017; Hersch, 2018; Louie and Wilkes, 2018; Uzogara, 2019).

[5]Abramitzky et al. (2023) highlight different outcomes for children classified as Mulatto or Black, within the same household, over the late-19th and early 20th centuries. Noghanibehambari and Fletcher (2025) find that children classified as Black, who appear in linked samples as White adults in the 1940 Census, live longer.

[6]Racial mis-classification in administrative data, particularly to avoid detection of discrimination, can also bias estimates of disparate treatment by race (Luh, 2023; Finlay, Luh and Mueller-Smith, 2024; Baron et al., 2024).

[7]For Native Americans and immigrants to the United States, there is discussion of how selective ethnic identification can create biases (Alba and Chamlin, 1983; Lieberson and Waters, 1993; Waters, 1994; Alba and Islam, 2009; Duncan and Trejo, 2011, 2017; Duncan et al., 2020; Kosack and Ward, 2020; Eschbach, Supple and Snipp, 1998). Census enumerators in 1930 vary systematically in their assignment of people with Mexican ancestry to be "Mexican" or "White" (Duncan and Trejo, 2023), for example, though data on skin tone were not available to implement analysis like ours. There can also be selective exit from ethnic groups over generations if more-educated people marry lighter-skinned people (as in Brazil, c.f. Schwartzman, 2007), with physical changes over generations, whereas we focus on differential racialization for people with the same skin tone.

that instead control for skin tone or split the sample by skin tone.

Our takeaway is not just that "race is a social construct," but that we can now for the first time (1) see the historical construction of race along SES lines in this critical period and (2) draw out the historical association between skin color and SES, which is obscured when race is endogenous to SES. Using uniquely-detailed skin tone data from the Freedman's Bank, we show the socioeconomic influence on mappings between skin tone and racial categories (Black, Mulatto, White). Our estimates highlight the fluidity of constructed racial classifications across people at a societal level, challenging essentialist views of racial identity, which have had enduring impacts on academic literature and social structures.

I Data Construction and Summary Statistics

I.A Skin Tone Data

We use data on skin tone from the Freedman's Savings Bank (1865-1874). The Freedman's Bank was chartered by Congress in 1865 and marketed to newly-emancipated people, though some others also used the Bank. The Bank collected deposits and paid interest, rarely lending at the branch level. The Bank was not formally connected to the Freedman's Bureau and was not financially backed by the US government, though some promotional materials fostered confusion (Célérier and Tak, 2024). Its Congressional charter allowed the Bank to open interstate branches, unusual for the time, and it was initially restricted to investments in US treasuries before successful lobbying by the White leadership of the Bank allowed them to invest in riskier assets. After many of these loans failed, in railroads and ventures of the leadership's associates, the Bank collapsed in 1874 and depositors eventually received at most 62% of their final balance. W.E.B. DuBois (1903) describes the Bank's failure as setting back "the thrift of the freedmen" as much as "ten additional years of slavery could have" (DuBois, 1903, p. 37). The Bank was described by Frederick Douglass as "the black man's cow and the white man's milk" (1874), and Congress declined to compensate depositors' losses. A growing literature has explored impacts of the Freedman's Bank, both before and after its collapse (Stein and Yannelis, 2020; Arthi, Richardson and Orden, 2024; Célérier and Tak, 2024; Edwards, 2024; Traweek and Wardlaw, 2024).

When someone opened an account with the Bank, the branch clerk filled out a depositor record (Appendix Figure 1). This included the depositor's name, birth state, age, and names of household members along with other information. The form included a field for "complexion," which Osthaus (1976, p. 82) discusses as helping to identify the person if they lost their deposit book. There are 368 unique string entries for complexion in our sample, reflecting spelling variations and less common physical descriptors, which we standardize into 27 detailed skin tone categories (reported in Table 1, and Appendix Table 1 provides

a tabulation of detailed skin tone category by branch). Some skin tone categories coincide with more racial categories (e.g., black, colored, nearly black, mulatto, nearly white, white), which we exclude from some specifications and show that use of racial categories attenuates our baseline estimates.[8] Skin tone was the main identifying physical characteristic recorded by the Bank, with only occasional references to other characteristics (e.g., distinctive scars or pox marks). The Bank's choice of skin tone as a primary identifying characteristic is consistent with a large literature on the use of skin color to distinguish individuals (Kessen and Weiskopf, 1976; Katz and Kofkin, 1997; Hirschfeld, 2008; Kinzler and Spelke, 2011).

Our main specifications compare people within the 27 detailed skin tone categories listed in Table 1, which reflect more-detailed skin tone data than are typically available to researchers, but we also use a "skin tone index" in some analysis. To create this index, where higher values indicate darker skin tones, we use our links to the 1870 Census. For each skin tone category, we define the index as the share of people with that skin tone that are Black in the Census (times one) plus the share of people with that skin tone that are Mulatto in the Census (times one-half). Any such index is an arbitrary scaling, but provides a continuous measure across categories that is useful for parts of our analysis and reported in Column 5 of Table 1.[9] Our main analysis, however, focuses on the variation across rows: for people with a particular skin tone, we examine who is racialized as Black, Mulatto, or White based on their other characteristics.

We observe two separate entries for complexion data for 578 depositors in our sample, when the depositor opened multiple accounts at different times. For 62% of these depositors, the detailed skin tone category is the same from both records. For an additional 15% of these depositors, the skin tone index values are within 0.05 index units. Figure 2 plots the two skin tone index values against each other, where the size of the circle is proportional to the number of depositors. We use these multiple measurements to instrument for one with the other in assessing the impacts of measurement error in skin tone.

I.B Linkage to 1870 Census Records

We hand-link all Bank depositor records to the 1870 Census, iterating with a machine-learning model to reduce errors and expand the sample. We start with 44,077 linkable depositor

[8]We also find that Freedman Bank branches with Black clerks, listed by Osthaus (1976), record more detailed descriptions of skin tone rather than broader or more racial categories. There is insufficient information on Census enumerators to find their recorded race in the 1870 Census, and explore related heterogeneity, though we expect the Census enumerators were mostly White (as US Marshals and Assistant Marshals in 1870). By comparison, Union Army records on "complexion" predominately refer to African American soldiers as "Black." We thank John Clegg for providing tabulations from the African American Civil War Soldiers Project.

[9]When race is endogenous to SES, the ordering of skin tone categories will not be affected if darker skin tone is negatively correlated with SES (which is consistent with what we find in the data).

records that have the depositor's age and birth state.[10]

We first generate candidate links in the 1870 Census that have the same birth state and gender, age within +/- 10 years, and a Jaro-Winkler string distance between first and last names ≤ 0.3.[11] These initial candidate links allow for fairly wide differences because of the high proportion of newly-emancipated people in our sample that have lower levels of numeracy and literacy. The additional supporting information can suggest promising links for records that are less close matches on age and depositor name. We keep at most the top 20 candidate links.[12]

We then send these candidate links to our data team, where two people independently hand-link the records. They can link the depositor record to a unique Census record (1:1), link the depositor record to multiple potential Census records (1:m), or make no link to the Census. For cases where the two people make different links, we send these to a third person for reconciliation.

Our hand-linking process takes advantage of additional information beyond what is typically used in more algorithmic linkage across Censuses (Bailey et al., 2020; Abramitzky et al., 2021). Especially useful for our contemporaneous links are the names and ages of other household members recorded on the depositor form: for adults, their spouse and children; for children, their parents and siblings. We show our data team members the Census race, combining Black and Mulatto into a "black/non-white" category, along with a coarse grouping of depositor complexion (black, ambiguous, white).[13] We also show our data team the first and last name of the depositor and each potential Census match, along with the difference in age between the records.

We attempt to hand-link each depositor record, but also train a machine-learning model on the hand-links (see Appendix for details).[14] We then ask a data team member to review

[10]We also restrict the sample to depositors with complexion data, which was recorded for 92% of depositor accounts that were otherwise linkable (based on having the depositor's age and birth state).

[11]We include exact matches on first initial, assigning a Jaro-Winkler distance of 0.3. For age, we adjust for when the depositor account was opened: if someone reports being 33 years old when they opened a bank account in 1873, we consider candidate people that are between ages 20 and 40 in the 1870 Census. We assign gender for the depositor records based on first name, and include an "ambiguous" category for rare intermediate cases that allows for links to men or women. For immigrants, predominately in the New York City branch, we use their birth country rather than birth state.

[12]We sort the candidate links as follows: by last-name string distance, then first-name string distance, spouse/parents' string distance, child/siblings' string distance, and the difference in depositor age between the depositor record and census record.

[13]The "ambiguous" category includes the complexion categories from "very light brown" to "fair" in Table 1, along with the ambiguously named "nearly black." For depositors with "ambiguous" complexion, data team members would be more likely to consider potential links to Census records with "white" race, but their record linkage decisions would not be differential by socioeconomic status because our data team do not see this other information.

[14]We train two random forest models, separately for adult and child links, that include 40 and 46 variables

hand-links in two categories: (1) hand-links that were made when the machine-learning model assigns a low probability (below 0.10), and (2) hand-links that were not made when the machine-learning model assigns a high probability (above 0.50). We then re-estimate the machine-learning model on the final hand-linked data, generating a match probability that we use for robustness analysis by varying the sample based on estimated link probability thresholds.

We link 14,138 depositor records to the Census uniquely (1:1), which reflects a 32% link rate that is fairly high relative to Census-to-Census links in this time period and particularly for a sample that is predominately recently-enslaved. We attribute this higher linkage rate to our making a more contemporaneous link between Freedman Bank records and the 1870 Census, rather than linking between Censuses, and the corresponding ability to take advantage of household member names that provide high confidence in links.

For example, the depositor record for Lafayette Spencer (Appendix Figure 1) corresponds closely to his Census record (Appendix Figure 2) with spouse Nancy and child Grant (that is 3 months old in the January Bank record and 10/12 months old in the August Census). The occupations also align (farming vs. farmer), along with the location (Hyde County, North Carolina), though we do not use occupation or location in the linkage process. Lafayette Spencer opened his account in 1870 with the New Bern branch (Craven County, North Carolina).

We restrict our analysis to the 14,138 unique links from the Freedman Bank data to the 1870 Census. Our main sample includes 10,286 census adults (3,018 women and 7,268 men) and 3,852 children (934 girls and 2,918 boys). Our main analysis uses the pooled sample, and we see similar estimates across adults and children and by gender. The gender imbalance reflects the composition of depositor accounts, rather than substantive differences in linkage rates. We are 6-8 percentage points more likely to link people with professional occupations, relative to farmers/laborers, but not differentially for people with dark and light skin tones.[15]

respectively, describing the relationship between the depositor and each potential Census match. Some example variables reflect: string distance between first and last names, nicknames, and family member names; depositor complexion and Census race; age difference; the rarity of each first name; and the extent of missing matching fields in each record.

[15]A potential concern would be if we are systematically unable to find depositors that are wealthy Black people in the Census, rather than wealthy people being less likely to be considered Black in the Census. Among linkable depositors in the "black/non-white" skin tone category, we are 8.2 percentage points *more* likely to link the record for people with a professional occupation in the depositor data and 0.6 percentage points less likely to link the record for people with a service/trade occupation in the depositor data, relative to farmers/laborers. Similarly, among linkable depositors in the "ambiguous" skin tone category, we are 6.1 percentage points and 0.7 percentage points more likely to link the record for people with a professional occupation and service/trade occupation, relative to farmers/laborers. Here we use occupation as a proxy for depositor SES, as we do not observe wealth in the depositor records and the Bank deposit balance upon its collapse is unavailable for those with closed accounts (and not strongly correlated with 1870 Census wealth).

Figure 1 shows the locations of Freedman Bank branches with surviving depositor records, where the size of the circle is proportional to the number of depositors we link to the Census. These 27 branches cover the major Southern cities at the time. 54% of depositors are in their branch county and an additional 8% are in a neighboring county in the 1870 Census. Our estimates are robust to restricting the analysis to depositors in the branch county or neighboring county, as more-distant people may be linked incorrectly, though people may also have opened an account further away (as in the case of Lafayette Spencer) or moved between the Census date and opening their account. Indeed, the share of depositors living in their branch county or neighboring counties falls from 71% for accounts opened in 1870 to 52% for accounts opened in 1874. As a comparison, Osthaus (1976) estimates that two-thirds of Freedman Bank depositors were in the branch city when they opened their account with select branches.

I.C 1870 Census Data

Census enumerators visited households in 1870, categorizing people as "Black," "Mulatto," and "White."[16] Census instructions noted: "Be particularly careful in reporting the class Mulatto" to include "all persons having any perceptible trace of African blood" on which "important scientific results depend" (U.S. Census Office, 1870, p. 10). The 1870 Census reflects enumerators' judgment along with self-reported information.[17] The 1870 Census did not ask about African ancestry, noting only whether the person's mother or father was foreign born, and focused instead on perceived race.[18]

Census efforts to track people with "any perceptible trace of African blood," maintaining separation from White people, contrasts with the Census discussion of its approach toward Native Americans in 1870 that had a more explicit social dimension: "in the equilibrium produced by the equal division of blood, the habits, tastes, and associations of the half-breed are allowed to determine his gravitation to the one class [Indian] or the other [White]" (U.S. Census Office, 1872, p. 19). This is consistent with efforts to erase Native American presence, outside reservations, in contrast with efforts to segregate African Americans. Our estimates show that the classification of African Americans was in practice more similar to the Census's

[16]The two other racial categories in 1870 were "Chinese" and "Indian" (Native American), which are very rare among Freedman Bank depositors and we exclude from our analysis. The 1870 Census labels this column "Color," but the Census classifications are racially focused in practice and changed over time with evolving racial structures (Hochschild and Powell, 2008; Humes and Hogan, 2009).

[17]For example, in discussing the recording of occupation, the 1870 Census instructions note: "You are under no obligation to give any man's occupation just as he expresses it. If he cannot tell intelligibly what he *is*, find out what he *does*, and characterize his profession accordingly [emphasis original]" (U.S. Census Office, 1870, p. 14).

[18]It is rare in our sample for people to have a foreign-born parent (1,097 depositors), and the estimates are similar when excluding depositors with a foreign-born parent.

discussed handling of Native Americans, however, in which the "perceptible trace of African blood" depended on a person's socioeconomic status (e.g., selectively categorizing wealthier people with light brown skin as White).

The 1870 Census is particularly useful in providing information on household wealth. Census enumerators could record a value of real estate owned and a value of personal estate owned for each person, but generally did so only for the household head (listed first); and we define a summed measure of household wealth. Bleakley and Ferrie (2016) show a strong linear relationship between tax-assessed wealth in Georgia and 1870 Census wealth (with a regression coefficient of 1.102 and standard error of 0.062).

We define an indicator variable for whether the depositor's household has "measured wealth," defined as $\geq$ \$100 total household wealth, which is the case for 27% of our sample households. Census enumerators were instructed to not record personal wealth below \$100, and very rarely record real estate wealth below \$100.[19]

We also analyze the continuous variation in wealth, adding \$45 for households with unmeasured wealth and taking the natural log. Our baseline adjustment assumes \$45 because some Census enumerators across the country did not follow the instructions and recorded positive values of personal wealth below \$100 (for 2% of households with less than \$100 wealth), with an average value of \$45. This value varies moderately by Census race (\$39, \$40, and \$48 for Black, Mulatto, and White household heads), and the estimated impact of log wealth is very similar when assuming these race-specific values. Unmeasured household-specific wealth below \$100 could attenuate the estimated effects of log wealth, though the estimates for log wealth are similar or only moderately larger when restricting the sample to those with \$100 or greater wealth.

The Census also reports whether people can read or write, for those aged 10 and older. People can generally do both or neither in the data, so we define people as "literate" when they can read and write. We focus on whether the depositor is literate, but also consider the literacy of the household head.

Table 2 reports summary statistics for our sample. 70% of the depositors are racialized as Black in the Census and 14% are racialized as Mulatto. Average household wealth is \$802, which reflects a skewed wealth distribution. Among those aged 10 and older, roughly one-third are literate. Freedman Bank depositors are moderately more likely to have measured household wealth and be literate than others of the same Census race in their county, controlling for gender and for being an adult (Table 2, Columns 2 – 4).

[19]Census instructions were to record the approximate market value of real estate owned by the household, not including any mortgage (U.S. Census Office, 1870), though in this era people were less likely to have mortgages and had lower debt shares on real estate than in the modern US.

II Race as the Outcome

II.A Main Empirical Specifications

Our main empirical specifications examine Census race as the outcome. We define three outcomes: whether someone is racialized as White or Mulatto (instead of Black); whether someone is racialized as White (instead of Mulatto or Black); and whether someone is racialized as Mulatto (instead of Black, excluding White people).

We regress these outcomes on depositor characteristic D_i, depositor skin tone, and branch fixed effects:

$$Race_i = \beta D_i + \delta_S SkinToneIndex_i + \gamma_b + \epsilon_i, \tag{1}$$

$$Race_i = \beta D_i + \gamma_{SkinTone} + \gamma_b + \epsilon_i. \tag{2}$$

Equation 1 uses the continuous skin tone index as a control, standardized to have a mean of zero and a standard deviation of one. Equation 2 is our main specification, however, which uses fixed effects for each of the 27 detailed skin tone categories. We include branch fixed effects, as racial composition varied across branches and different branches often used different terms for skin tones, but our estimates are not sensitive to excluding branch fixed effects or including branch by detailed skin tone category fixed effects. Similarly, while depositors opened accounts between 1865 and 1874, the estimates are not sensitive to including fixed effects for the interaction of branch and account opening year. Most Freedman Bank branches had one clerk opening accounts and recording skin tone data (Osthaus, 1976).

II.B Main Estimates

Table 3 reports that people are 11 percentage points more likely to be racialized as White or Mulatto if they have measured wealth in the Census (Panel A, Column 1). Having a one standard deviation darker skin tone index value substantially reduces the probability that someone is racialized as White or Mulatto, by 29 percentage points, but conditional on this skin tone index there is also a substantial influence of wealth.[20] Column 2 is our preferred specification, replacing the skin tone index with detailed skin tone category fixed effects, which shows a very similar influence of wealth on racialization. Columns 3 and 4 report a 7 percentage point increase in whether people are racialized as White, compared to Mulatto or Black. Columns 5 and 6 show a 9 percentage point increase in being racialized as Mulatto compared to Black, excluding White people from the sample. Panels B and C

[20] A one standard deviation increase in the skin tone index corresponds to an increase of 0.3 (from Table 1), or roughly from "light" complexion to "brown" complexion.

report impacts of log wealth and literacy, in which these different proxies for socioeconomic status are positively associated with being racialized as White or Mulatto.[21]

Table 4 reports estimates separately by broad skin tone group. As the skin tone of the depositor becomes lighter, the effects of wealth and literacy on racialization grow stronger: from 6% for those with "black" skin tone to 22% for people with "light" skin tones (between "very light brown" and "fair") in Panel A of Table 4. The effect of wealth then decreases to 1% for people with "white" skin tone. Figure 3 plots these estimated coefficients to visualize the pattern: intuitively, people with light skin tones are statistical "compliers" to the influence of socioeconomic status. By contrast, when people have dark skin tones (or "white" complexion), their racialization is less sensitive to their wealth and literacy. There continues to be some smaller effect of wealth and literacy on racialization for those with darker skin tones, including those recorded as having "black" skin tone, which can reflect more coarse or racialized skin tone measures.

Table 5 reports geographic heterogeneity in our baseline estimates, comparing across counties with different Black wealth, Black literacy, reported racial abuses, and modern intergenerational mobility. We report how the effect of SES on race varies in counties with: one standard deviation lower wealth among Black people in the Census (Column 1); one standard deviation greater gap in Black-White wealth in the Census (Column 2); one standard deviation lower literacy among Black people in the Census (Column 3); one standard deviation greater gap in Black-White literacy in the Census (Column 4); one standard deviation greater reports of racial abuses against African Americans (Column 5); and one standard deviation lower intergenerational mobility for people considered Black in the modern period (Column 6) and one standard deviation greater Black-White mobility gap in the modern period (Column 7).[22] Because the effects of wealth or literacy differ substantially by skin tone (Table 4), and skin tone varies across counties, we also control for wealth or literacy interacted with skin tone fixed effects.

Overall, the effects of wealth and literacy on racialization are broadly consistent across counties. There is a moderately greater effect of literacy on how someone is racialized in counties with lower Black literacy or a greater gap in Black-White literacy (Columns 3 and 4).

[21]The effects of log wealth are roughly linear through most of the sample, and not sensitive to omitting the largest values of wealth.

[22]We are grateful to Eric Chyn, Kareem Haggag, and Bryan Stuart for sharing their data on reported racial abuses (Chyn, Haggag and Stuart, 2024). These data detail the location of crimes reported by the Freedmen's Bureau from 1865 to 1868, historically referred to as "outrages," mostly perpetrated against African Americans. We analyze the number of reported racial abuses per person racialized as Black or Mulatto in the Census. When calculating average wealth among families with Black household heads in the Census, and average literacy among Black people in the Census, we omit the Bank depositor families. We are also grateful to Raj Chetty, Will S. Dobbie, Benjamin Goldman, Sonya Porter, and Crystal Yang for making available their data on intergenerational mobility (Chetty et al., 2024).

That is, in counties where Black people are generally less likely to be literate, being literate means someone is less likely to be considered Black. In counties with a larger racial wealth gap, however, racial boundaries were more fixed and wealth had a somewhat lower effect on being considered White (Column 2). In counties with more racial violence during the 1865–1868 period, there is a somewhat greater effect of wealth on being considered White (Column 5). Wealth has somewhat less of an effect on being racialized as White in counties with lower intergenerational mobility for people considered Black in the modern era (Column 6), but there is little association with counties' modern gap in Black-White mobility (Column 7), and the estimated effects of wealth and literacy are substantively similar across counties.

Table 6 shows that having measured wealth and being literate are both predictive of Census race, when included together, and their interaction also further predicts Census race. Socioeconomic status is naturally multi-dimensional, and these estimates suggest that racial assignment is particularly influenced by movement along multiple dimensions in concert.

In addition to Census measures of wealth and literacy, we also explore the effects of other depositor characteristics recorded in the Bank data. These Bank record characteristics include the depositor's name, occupation, and a proxy for literacy. The estimated effects of these Bank record characteristics would be attenuated by record linkage error, in contrast to the effects of Census measures of wealth and literacy, which we discuss further below.

First, we define names as "Distinctively Black," based on distinctive naming patterns that had emerged by this era (Cook, Logan and Parman, 2014, 2016, 2022).[23] Table 7 reports that people are less likely to be racialized as White or Mulatto when they have a more distinctively Black name in their depositor record (Panel A), which suggests additional channels through which race is socially constructed that need not be directly associated with socioeconomic status. Relatedly, for families with multiple depositors, 79% of depositors are in the same coarse skin tone group (darker, light, white), but 93% of these depositors are assigned the same race in the Census – consistent with Census enumerators characterizing a person's race based also on their family.[24]

Second, the depositor record often lists an occupation, which is a proxy for SES. There is potentially wide dispersion of incomes among "farmer" and "farming" (along with "farm laborer" and "laborer"), though opportunities for higher incomes within agriculture were limited

[23]For each first name, we calculate the share of people with that first name that are racialized as Black or Mulatto in the 1870 Census (by gender). We also estimate differential racialization based on the list of distinctively Black first names reported by Cook, Logan and Parman (2014), which limits the sample to men. We also find differential racialization associated with having a distinctively Black last name, which is not strongly correlated with having a distinctively Black first name.

[24]There are 680 multiple-depositor families in which at least one depositor is not in the "white" skin tone category. The "light" category corresponds to the detailed skin tone categories between "fair" and "very light brown" in Table 1.

among African Americans. We define occupational categories of "Professional" and "Service/Trades" occupations, which we compare to the omitted category of "Farmer/Laborer."[25] If depositors have a professional or service/trade occupation, they are more likely to be racialized as White or Mulatto (Table 7, Panel B).

Third, the Bank account opening record also had a signature line, where it appears that the depositor sometimes signed their own name and sometimes the bank clerk wrote the name with an X along with writing "his mark" or "her mark." We use whether the depositor signed their own name as a proxy for literacy. Depositors are more likely to be racialized as White or Mulatto if they wrote their name on the signature line (Table 7, Panel C). There is no detectable effect of "his/her mark" on being racialized as White (rather than Mulatto or Black), but the estimates across Table 7 are consistent with Census enumerators racializing people differently based on characteristics from the depositor records after controlling for detailed skin tone fixed effects.

II.C "Reverse Causality" and Unmeasured Socioeconomic and Physical Characteristics

Our findings indicate the social construction of race along economic lines apart from physical differences between people. For example, we find that people were racialized based upon wealth, but we emphasize that wealth is a proxy for general socioeconomic status, and the interpretation remains the same when racialization is also influenced by other socioeconomic characteristics that are correlated with wealth. These other socioeconomic characteristics include observed factors, such as literacy or naming patterns, and unmeasured factors like attire or speech patterns. We are not saying that an exogenous increase in wealth would itself necessarily cause someone to be racialized differently; rather, observed wealth captures a bundle of socioeconomic characteristics that cause someone to be racialized differently.

The interpretation would be different, however, if race was heavily determined by other unmeasured physical characteristics that are correlated with wealth. For instance, it is possible that the physical appearance of "whiteness" might directly affect socioeconomic status, either via reduced exposure to discrimination or because of wealth transfers from European ancestors (Myrdal, 1944; Frazier, 1957). If this "reverse causality" is only weakly

[25]For the "Professional" category, we looked to include occupations that involved higher-level education and/or office work (e.g., teachers, nurses, merchants, clerks), which corresponded closely to occupations with higher average education in 1950 ("edscore $\geq$ 12") and so, in practice, we assign this cutoff. For the omitted "Farmer/Laborer" category, we looked to include occupations with more-intensive outdoor manual labor (e.g., farmer, farming, laborer, gardener, horse worker, woodcutter). For the middle-range "Service/Trades" category, we assigned the remaining occupations often associated with domestic labor and trades (e.g., laundress, cook, servant, housekeeper, driver, blacksmith, carpenter, bricklayer). We exclude those with missing occupations or children in school. The occupational composition of depositors is: 1,216 "Professional," 5,547 "Service/Trades," 3,696 "Farmer/Laborer," and 3,679 uncategorized.

captured by measured skin tone, and the unobservable determinants of status are highly positively correlated with the unmeasured physical attributes determining racialization, we might estimate a significant relationship between social status and racialization where no causal link exists. Indeed, without data to compare people with the same recorded skin tone, wealthier people would clearly be more likely racialized as White in the 1870 Census.

More broadly, to the extent that unmeasured physical features predict race (e.g., hair, facial features, subtleties of skin tone), and are correlated with wealth, one could try to maintain the null hypothesis that race was entirely determined by physical features and not constructed along socioeconomic lines.[26]

We have an opportunity to bound the influence of unmeasured physical characteristics, using the influence of detailed skin tone data that we do observe. This bounding exercise follows a method in Cinelli and Hazlett (2020), related to Altonji, Elder and Taber (2005) and Oster (2019). If we only observed three coarse groupings of skin tone (darker, light, white), similar to what is more often observed when skin tone data are available, then we could still look to estimate the effect of wealth on racialization conditional on those coarse skin tone group fixed effects.[27] We would be concerned about unmeasured physical characteristics, however, because of potential remaining variation in skin tone (very light vs. light vs. light brown and brown vs. dark brown vs. dark). When we augment the analysis with more detailed skin tone data, we can quantify how including the skin tone index affects the estimates (due to its joint predictive power for race and its correlation with wealth beyond the three coarse skin tone group fixed effects). We can then consider how our estimated effects would change if we discovered yet another measure of physical characteristics, which was equally jointly predictive of race and wealth as the skin tone index.

Figures 3, 4, and 5 illustrate the potential attenuation of our main estimates from the inclusion of additional controls for physical appearance. The curved contour lines represent adjusted effects of wealth or literacy on race due to unmeasured characteristics having the indicated joint explanatory power for race (on the y-axis) and wealth or literacy (on the x-axis). For example, if unmeasured physical characteristics explained all residual variation in race (moving up the y-axis to one), then these characteristics would still need to be 4.5 times more correlated with wealth than the skin tone index to account for our baseline estimate.

[26]Physical features can also be endogenous to wealth and other aspects of socioeconomic status, but here we consider the potential concern in which physical features are exogenous and predictive of race (while being correlated with wealth). We do not see substantial seasonality in recorded skin tone categories among depositors that opened accounts on two different dates, comparing accounts opened from May to September to those opened from November through March, both for all duplicate accounts and differentially for farmers relative to non-farmers.

[27]For this specification, we group the Table 1 categories into: darker (from "dark Mulatto" to "black"), light (from "fair" to "very light brown"), and white.

Figure 3 shows the limited scope for unmeasured physical characteristics to explain our main estimated impacts of wealth on racialization. The lower left red diamond indicates that the estimated effect of wealth would drop from 0.108 to 0.099 with the addition of another variable that was as influential as adding the skin tone index (beyond three coarse groupings of skin tone).[28] With the addition of another summary measure of physical characteristics that is five times as influential as the skin tone index, the estimated effect of wealth would drop to 0.063 (the second red diamond). To entirely explain the effect of wealth, reaching zero at the dotted blue line, unmeasured physical characteristics would need to be 12 times as correlated with race and wealth as the detailed data on skin tone – which itself was the primary identifying information collected by the Bank.

Figure 4 shows similar robustness exercises for the effects of log wealth and literacy on whether people are racialized as White or Mulatto rather than Black. Figure 5 shows robustness for the effects of measured wealth on being racialized as White rather than Black or Mulatto, which requires unmeasured characteristics to be substantially more explanatory than our detailed skin tone data, and also shows a robust effect of measured wealth on whether people are racialized as Mulatto compared to Black.

Older relatives' skin tone could also indicate ancestry, which is an unmeasured physical characteristic at the household level, but the estimates are robust to excluding depositors living with an older non-spouse in their household.[29] The influence of family members on someone's perceived race also reflects a social construction of race, however, similar to how living near more people considered Black might cause someone to be considered Black.

Overall, these estimates indicate a substantial and robust relationship between proxies for socioeconomic status and racialization that would be difficult to quantitatively account for with unmeasured physical characteristics of depositors that cause people to have higher wealth ("reverse causality") or are otherwise correlated with having higher wealth. These estimates show that in 1870, shortly after emancipation, racial groups were being separated along socioeconomic boundaries in addition to physical boundaries in setting the stage for racial segregation and continued racial stratification.

II.D Robustness to Linkage Error and Alternative Specifications

Record linkage error is a main source of concern that we look to address. Because White and Mulatto people tend to have more wealth or higher literacy than Black people in the Census, inaccurate links to White or Mulatto people could cause us to observe people that both have

[28]The baseline effect is normalized to the origin, which corresponds to the specification from Table 3 (Panel A, Column 1) with the addition of the three coarse skin tone group fixed effects.

[29]This specification excludes 1,444 adults and all 3,852 children, for which the estimates are similar to our baseline estimates and those limiting the sample to household heads (discussed below, in Appendix Table 5).

higher wealth or literacy and are racialized as White or Mulatto. Linkage errors could then generate spurious average "effects," though would not generate the differentially greater effect of wealth among those with light skin tones (from Table 4): our data team did not observe wealth or literacy when linking records, so mistaken links should be associated with the same average difference in wealth across skin tone groups.[30] Further, linkage error would attenuate estimates in our specifications that use depositors' Bank record characteristics as explanatory variables.

Appendix Table 2 shows that our results are not sensitive to restricting the record links included in the analysis. Column 2 excludes links that the machine-learning model assigns a probability below 0.10, though human linkers were still comfortable with these links after re-hand-linking, and Column 3 excludes links that the machine-learning model assigns a probability below 0.50. Our preferred conservative approach more directly leverages the other household member names, restricting the sample to depositors with at least one other family member whose name aligns (Column 4) or at least two other family members whose names align (Column 5). Column 6 finds similar estimates when restricting our hand-linked sample to depositors whose name matches exactly to the Census name, and their age difference is within one year (due to variation in birthdays relative to the Census date and Bank account opening date). Appendix Table 3 shows similar effects of depositors' Bank record characteristics when making the same sample restrictions, showing little attenuation from incorrect record links. We continue to find similar effects on racialization even as restricted samples might become less representative of the broader population (e.g., from being able to link on spouse and child names).

Appendix Table 4 reports estimates when restricting the sample of depositors. We see similar effects among people living in their birth state (Column 2) and people living outside their birth state (Column 3), which suggests that migration did not substantively reset someone's race to become more or less based on their socioeconomic characteristics. This is consistent with the geographically pervasive influence of socioeconomic characteristics on racialization (from Table 5). Column 4 reports somewhat smaller effects among depositors living in the same branch county or neighboring counties as their Bank account. This may reflect a different set of depositors who traveled longer distances to open accounts, or potentially more reliable links to local depositors, although we find little effect of limiting the sample to only the best-verified links (Appendix Table 2). The estimates are similar to

[30]The data team members may be more likely to link White people in the Census to depositors with "ambiguous" skin tones, on average, but this should not vary with a person's wealth conditional on making a link. In practice, we are not more likely to link depositors with "ambiguous" skin tones to the 1870 Census. Also, the data team members did not observe whether someone was racialized as Black or Mulatto in the Census, which we combined into a "black/non-white" category.

our baseline estimates when excluding the New York City branch that had more immigrant depositors (Column 5) and excluding all foreign-born people in the Census (Column 6).

Appendix Table 5, Column 2, reports larger estimates when omitting the more "racial" categories of skin tone (black, nearly black, colored, mulatto, white, nearly white). These "racial" skin tone labels may be particularly subject to non-classical measurement error if some Freedman Bank clerks, similar to Census enumerators, were susceptible to write down "black" or darker skin tones when people looked poorer. Indeed, this would attenuate our baseline estimates: depositors would have lighter racial skin tone categories recorded when they are richer, even though their skin tone is darker, so that within measured skin tone categories wealthier people would be *less* likely to be racialized as White or Mulatto by the Census (because they actually have darker skin tones).

Column 3 of Appendix Table 5 limits the sample to household heads only. It is not indicated who was present with the Census enumerator, but household heads are more likely to have interacted directly with the Census enumerator.

Appendix Table 5 also shows similar effects across gender and age, restricting the sample to women (Column 4) and children (Column 5). Column 6 restricts the sample to households with measured wealth ($100 or greater), which shows similar effects of log wealth and somewhat larger variation with literacy.

Appendix Table 6 shows that the literacy of the household head is similar to or more influential than the literacy of the depositor themselves, consistent with broader social influences on how the depositor is racialized beyond characteristics of the individual depositor themselves.

Appendix Tables 7 and 8 separate the influence of real estate wealth and personal property wealth, in which both matter individually and jointly, but having real estate wealth is somewhat more influential.

Appendix Table 9 reports similar estimates when varying the included control variables. Column 2 omits the branch fixed effects. Columns 3 – 7 include additional controls for: fixed effects for branch interacted with detailed skin tone category; fixed effects for branch by year of account opening; being emancipated prior to 1860; gender along with age and age-squared; and county fixed effects.[31] These specifications adjust for other potential sources of variation in differential racialization across people and places.

[31]As an imperfect proxy for whether people were free in 1860, we use a machine-learning model to link Black and Mulatto people from 1870 back to 1860 when free people were enumerated by name in the Census (and enslaved people were counted without names).

III Race as an Explanatory Variable

III.A Empirical Specifications and Motivating Estimates

One implication of race being influenced by socioeconomic status, which we develop in this section, is that it complicates the interpretation of empirical specifications that "control" for endogenous race or split the sample by race following common statistical practice. To illustrate this, we start by regressing depositor characteristic D_i on the skin tone index:

$$D_i = \beta_S SkinToneIndex_i + \gamma_b + \epsilon_i, \tag{3}$$

where β_S can be interpreted as the average difference for depositors with one standard deviation darker skin tone. We continue to control for Freedman branch fixed effects, so this coefficient is the average difference among depositors associated with the same Bank branch.

Table 8, Column 1, reports that depositors with one standard deviation darker skin tone are 12 percentage points less likely to have measured wealth, have 41% lower household wealth, and are 17 percentage points less likely to be literate.

A common empirical specification would then "control for race," examining the influence of skin tone within race, by including indicator variables for being Black and Mulatto in the Census:

$$D_i = \tilde{\beta}_S SkinToneIndex_i + \tilde{\beta}_B Black_i + \tilde{\beta}_M Mulatto_i + \gamma_b + \epsilon_i. \tag{4}$$

Table 8, Column 2, reports substantially smaller estimated differences for depositors with one standard deviation darker skin tone: 1 percentage point less likely to have measured wealth, 10% lower household wealth, and 6 percentage points less likely to be literate. Columns 3 – 5 report smaller differences by skin tone within each racial group, which is also a typical comparison that is similar to "controlling for race." Column 6 limits the sample to people that are Black or Mulatto in the Census.

We simulate and show empirically how the estimates in Columns 2 – 6 may be biased by the endogenous assignment of race and understate the relationship between wealth and skin tone. The intuition is that people who are "Black" with lighter skin will be relatively poorer because otherwise they would not be classified as Black, so lighter skin becomes less associated with higher wealth among "Black" people. Relatedly, people who are "White" with darker skin will be relatively richer because otherwise they would not be classified as White, so darker skin becomes less associated with lower wealth among "White" people.

However, there remains a substantial association between SES and skin tone when restricting the sample to people with non-white skin tones (Table 8, Column 7). There is no

bias when restricting the sample based on skin tone, when skin tone is a fixed characteristic, and below we discuss further the implications of true or measured skin tone being endogenous to SES.

For conciseness, the below model focuses on "Black" and "White" racial categories, omitting a third "Mulatto" racial category that would introduce additional notation with the same implications.

III.B Modeling Selection Bias from Endogenous Race

Let w_i be the wealth of person i, assumed to be decreasing linearly in darker skin tone s_i:

$$w_i = \alpha_0 + \alpha_1 s_i + e_i. \tag{5}$$

If s_i is measured accurately, then an OLS regression of w_i on s_i yields the true α_1. We later consider measurement error in s_i.

Suppose we estimate the same regression among respondents classified as Black:

$$w_i = \tilde{\alpha}_0 + \tilde{\alpha}_1 s_i + e_i, \text{ if } B_i = 1. \tag{6}$$

If racial classification is only a function of skin tone, then $\tilde{\alpha_1} = \alpha_1$. However, if the probability of classification as Black increases with other characteristics u_i, such as poverty or illiteracy with $\text{Cov}(u_i, e_i) < 0$, then $\tilde{\alpha}_1$ is biased upwards ($\tilde{\alpha}_1 > \alpha_1$ and $\alpha_1 < 0$).

When people are classified as Black based on skin tone and these other factors u_i:

$$B_i = \mathbb{I}\left[\beta_0 + \beta_1 s_i + u_i > 0\right], \text{with } \beta_1 > 0. \tag{7}$$

Wealth within the group classified as Black is:

$$\mathbb{E}\left[w_i | Black\right] = \tilde{\alpha}_0 + \tilde{\alpha}_1 s_i + \mathbb{E}\left[e_i | u_i > -\left(\beta_0 + \beta_1 s_i\right)\right], \tag{8}$$

and the error term is no longer orthogonal to skin tone. To illustrate this bias in a tractable case, we assume the errors are distributed normally ($e_i \sim N\left(0, \sigma_e^2\right)$, $u_i \sim N\left(\mu_u, \sigma_u^2\right)$) and negatively correlated ($\text{Corr}(u_i, e_i) = \rho < 0$). Then, expected wealth conditional on being classified as Black is:

$$\mathbb{E}\left[w_i | Black\right] = \tilde{\alpha}_0 + \tilde{\alpha}_1 s_i + \rho\sigma_u I\left(\beta_0 + \beta_1 s_i\right), \tag{9}$$

where $I\left(\cdot\right) = \phi\left(\cdot\right)/\Phi\left(\cdot\right)$ is the inverse Mills ratio as developed in the Heckman selection

model (Heckman, 1979). This final term is unobserved, creating selection bias in α:

$$\tilde{\alpha}_1 = \alpha_1 + \rho\sigma_u \frac{Cov\left(s_i, I_i\right)}{Var\left(s_i\right)}. \tag{10}$$

Compared to the true α_1, which is less than zero, the estimated $\tilde{\alpha}_1$ is biased upwards because signals of poverty or illiteracy are negatively correlated with wealth ($\rho < 0$) and selected racial assignment makes the inverse Mills ratio lower with darker skin tones ($\partial I_i / \partial s_i < 0$ hence $Cov\left(s_i, I_i\right) < 0$), so the second term is positive. Thus, the effect of skin tone controlling for race ($\tilde{\alpha}_1$) is less negative than the unconditional effect ($\tilde{\alpha}_1 > \alpha_1$) and may even be positive.

III.C Simulated and Empirical Correlations between Wealth and Skin Tone, Unconditional and Conditional on Census Race

Figure 6, Panel A, shows simulated correlations between wealth and skin tone, based on the above selection model from Section III.B with assumed illustrative parameters.[32] The black circles represent people racialized as Black, whereas the hollow circles represent people racialized as White.

Unconditional on Census race, the solid red line shows the assumed decreasing relationship between wealth and darker skin tone. Conditional on race, however, the two dashed lines show substantially attenuated relationships. Among those with darker skin, only richer people are racialized as White, which flattens the top dashed line. Among those with lighter skin, only poorer people are racialized as Black, which flattens the bottom dashed line.

Empirically, in our data, we see a similar pattern in Panel B of Figure 6. We plot log household wealth on the y-axis against the depositor's skin tone index on the x-axis.[33] The solid red line shows a clear unconditional decline in wealth associated with darker skin tones. Conditional on race, however, the two dashed red lines show substantially flatter relationships. This is because among those with light skin tones, people racialized as Black are relatively poorer on average. Similarly, among those with darker skin tones, people racialized as White are relatively richer on average. This selected racialization creates upward bias within both racial groups.

[32] We select parameters to illustrate the model's qualitative implications: $w_i = -0.5 \times s_i + e$, with s randomly drawn from a standard normal distribution, and let $B_i = 1$ if $0.75 \times s_i + u > -0.5$. We draw 500 error terms, e and u, from a standard normal distribution with a -0.75 correlation. We then fit population regression lines to the full sample and within the White and Black racial groups (continuing to omit a third Mulatto racial group for ease of presentation).

[33] We restrict the sample to people with measured household wealth to aid in visualizing this relationship, as the bottom-coded households are grouped together.

III.D Measurement Error in Skin Tone

We also consider implications if the Freedman Bank clerks recorded skin tone, $\hat{s}_i$, based partly upon signals of socioeconomic status, v_i:

$$\hat{s}_i = s_i + v_i. \tag{11}$$

An OLS regression of wealth on skin tone becomes:

$$w_i = \hat{\alpha}_o + \hat{\alpha}_1 (s_i + v_i) + \eta_i \tag{12}$$

and the estimated coefficient $\hat{\alpha}_1 = \beta_{e\hat{s}} + (1 - \beta_{v\hat{s}})\, \alpha_1$.

The first term, $\beta_{e\hat{s}}$, creates a downward bias in the relationship between wealth and skin tone (more negative) when the Bank's measurement of skin tone is affected by signals of wealth. The coefficient $\beta_{e\hat{s}}$ is from a regression of e on $\hat{s}$, which is negative ($\text{Corr}(v_i, e_i) < 0$). The same type of bias would also arise when someone's measured skin tone actually becomes darker due to lower wealth, such as working as an outdoors laborer in a lower-income job, which would create a more negative relationship between measured skin tone and wealth.

The second term represents attenuation bias, as with classical measurement error, where $\beta_{v\hat{s}}$ is the coefficient from a regression of v on $\hat{s}$ (positive). This attenuation bias could be exacerbated when controlling for Census race, also reducing the coefficients in Column 2 relative to Column 1.

To assess the attenuation from classical measurement error, we can use the two measures of skin tone from when some depositors opened two accounts at different times. Table 9 restricts our analysis to this subsample and finds 2SLS estimates that are similar to the OLS estimates, instrumenting one measurement of skin tone with the other. The first-stages are very strong, unconditional or conditional on Census race, with F-statistics of 1,541 and 373 due to high correlation in the multiple measures of skin tone. These estimates indicate little attenuation bias from classical measurement error, but substantial selection bias from the endogenous assignment of race based on wealth.

III.E Interpreting Race as an Explanatory Variable

Selection bias from the endogenous assignment of race can apply more broadly than in the case of estimating relationships with skin tone (as in Table 8). For example, when regressing wages on education, controlling for race will introduce selection bias when individuals are racialized in the data based in part on their education and wages. The effect of education would be attenuated by the inclusion of race controls when, as we formalize above, individuals with lower earnings are more likely to be classified as the "Black" racial category. Self-reported

race and externally-perceived race may both be endogenous to social context and, to the extent these differ, controlling for self-reported race would also then not capture differences associated with others' perception of someone's race.

One potential solution is to control for skin tone, rather than race, if the intended comparison is among people with similar physical features that are associated with their backgrounds and opportunities. Skin tone may also be endogenous to SES, and measured with error, but unmeasured skin tone will often be an important omitted variable that is conceptually and practically distinct from race. A greater focus on collecting and analyzing data on skin tone would allow greater focus on the influence of colorism, along with separate measures of self-perceived and externally-perceived race.

Another potential solution to race being endogenous is to analyze a subsample for whom race is less endogenous, such as those with less racially-ambiguous skin tones. A caveat to this approach is that people in this subsample may respond differently to the variable of interest than the average effect in the general population.

The "effect" of race itself is also biased when race is endogenous. When the racial assignment of people is influenced by their socioeconomic characteristics, it will complicate the interpretation of cross-group differences (in addition to our focus on within-group differences, splitting the sample by race or "controlling for race"). One consequence is to understate non-white wealth in the Census, when relatively wealthy people with non-white skin tones are classified as White in the Census.

It does not immediately follow, however, that endogenous racial assignment will overstate the racial wealth gap. For example, in our sample there are relatively few Freedman Bank depositors with white skin tone (11%) and their average wealth ($4,245) is substantially above the average wealth for people with non-white skin tone who are also classified as "White" ($3,295). As a consequence, the re-classification of relatively wealthy people with non-white skin tone as "White" in the Census also lowers average wealth among White people in our sample. Thus, the average wealth gap by depositor race in 1870 ($3,778, White vs. Mulatto or Black) is actually slightly smaller than the average wealth gap by depositor skin tone in 1870 ($3,874, white vs. non-white). In general, the impact of racial reclassification on differences by race will depend both upon the mean outcomes and sample size of the reclassified individuals, relative to the groups from which and into which they are transferred.

IV Conclusion

Emancipation put the United States' social structure into a period of potential transformation. The Reconstruction Era saw efforts to integrate formerly-enslaved people into broader social, economic, and political institutions. Competing efforts to reimpose antebellum social

structures, however, had to confront the continuous variation in physical skin tones across people.

Without the de jure distinction between those who were to be considered "free" versus "enslaved," the definition of race became an even more important tool for social control. Racial categories were a central pillar of the social and economic system, both reflecting and influencing the beliefs and behaviors of individuals in that system. This required a social construction of race, reformulated and reconstructed in that critical juncture after emancipation, which set the stage for continued racial stratification during and after the Jim Crow segregation era.

In this paper, we show that people with the same physical skin tone were racialized differently based on their wealth and other proxies for socioeconomic status. We use uniquely-detailed data on skin tone from depositor records of the Freedman's Savings Bank (1865-1874) to show differential racialization by socioeconomic status in the 1870 Census during Reconstruction. The influence of socioeconomic status on racialization is similar across age, gender, and geographical area, suggesting a pervasive social construction of race.

Standard statistical practice still often involves "controlling for race" alongside other variables, despite some growing recognition that "race is a social construct." When racial categories are themselves outcomes, however, differences across or within racial groups can be challenging to interpret. We show that observed differences by skin color within race are substantially attenuated when race is endogenous. This same form of selection bias would also affect other estimated differences by race, and estimated differences within race. These findings highlight the value of collecting and analyzing data on skin tone, which is only selectively reflected in data on race.

Research on discrimination often focuses on putative race, as socially constructed, which contributes to historical and contemporaneous differences in outcomes. Race can also be seen as an outcome of these historical and contemporaneous differences, which can obscure the important underlying influence of skin tone differences that are the focus of the literature on colorism. How race is measured, analyzed, and discussed can also shape individuals' understanding of their own identity. The resulting relationships between identity, power, and social outcomes, particularly related to economic disparities, influence policies that might ameliorate disparate outcomes.

Our findings underscore the fluidity of socially constructed racial classifications, which challenge essentialist views of racial identity that continue to influence both academic literature and social structures. Our estimates not only reinforce the idea that race is a social construct, but show empirically the historical construction of race in this critical moment in American history as a new era of social coercion emerged.

References

Abramitzky, Ran, Jacob Conway, Roy Mill, and Luke Stein. 2023. "The Gendered Impacts of Perceived Skin Tone: Evidence from African-American Siblings in 1870–1940." *NBER Working Paper 31016*.

Abramitzky, Ran, Leah Boustan, Katherine Eriksson, James Feigenbaum, and Santiago Pérez. 2021. "Automated Linking of Historical Data." *Journal of Economic Literature*, 59(3): 865–918.

Alba, Richard, and Tariqul Islam. 2009. "The Case of the Disappearing Mexican Americans: An Ethnic-Identity Mystery." *Population Research and Policy Review*, 28(2): 109–121.

Alba, Richard D., and Mitchell B. Chamlin. 1983. "A Preliminary Examination of Ethnic Identification among Whites." *American Sociological Review*, 48(2): 240–247.

Alba, Richard D., Noura E. Insolera, and Scarlett Lindeman. 2016. "Is Race Really So Fluid? Revisiting Saperstein and Penner's Empricial Claims." *American Journal of Sociology*, 122(1): 247–262.

Althoff, Lukas, and Hugo Reichardt. 2024. "Jim Crow and Black Economic Progress after Slavery." *The Quarterly Journal of Economics*, 139(4): 2279–2330.

Altonji, Joseph G., Todd E. Elder, and Christopher R Taber. 2005. "Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools." *Journal of Political Economy*, 113(1): 151–184.

Arthi, Vellore, Gary Richardson, and Mark Van Orden. 2024. "Traumatic Financial Experiences and Persistent Changes in Financial Behavior: Evidence from the Freedman's Savings Bank." *NBER Working Paper 32576*.

Bailey, Martha J., Connor Cole, Morgan Henderson, and Catherine Massey. 2020. "How Well Do Automated Linking Methods Perform? Lessons from U.S. Historical Data." *Journal of Economic Literature*, 58(4): 997–1044.

Baron, E. Jason, Joseph J. Doyle Jr., Natalia Emanuel, Peter Hull, and Joseph P. Ryan. 2024. "Unwarranted Disparity in High-Stakes Decisions: Race Measurement and Policy Responses." *NBER Working Paper 33104*.

Bayer, Patrick, Kerwin K. Charles, and Ellora Derenoncourt. 2025. "Racial Inequality in the Labor Market." *NBER Working Paper 33372*.

Blake, Jamilia, Verna Keith, Wen Luo, Huong Le, and Phia Salter. 2017. "The Role of Colorism in Explaining African American Females' Suspension Risk." *School Psychology Quarterly*, 32(1): 118–130.

Bleakley, Hoyt, and Joseph Ferrie. 2016. "Shocking Behavior: Random Wealth in Antebellum Georgia and Human Capital Across Generations." *The Quarterly Journal of Economics*, 131(3): 1455–1495.

Boas, Franz. 1912. "Changes in the Bodily Form of Descendants of Immigrants." *American Anthropologist*, 14(3): 530–562.

Bodenhorn, Howard. 2015. *The Color Factor: The Economics of African-American Well-Being in the Nineteenth-Century South.* Oxford University Press.

Bonilla-Silva, Eduardo. 1997. "Rethinking Racism: Toward a Structural Interpretation." *American Sociological Review*, 62(3): 465–480.

Bowman, Phillip J., Ray Muhammad, and Mosi Ifatunji. 2004. "Skin Tone, Class, and Racial Attitudes among African Americans." In *Skin Deep: How Race and Complexion Matter in the "Color-blind" Era*. 128–58. University of Illinois Press Chicago.

Burch, Traci. 2015. "Skin Color and the Criminal Justice System: Beyond Black-White Disparities in Sentencing." *Journal of Empirical Legal Studies*, 12(3): 395–420.

Charles, Kerwin K., and Jonathan Guryan. 2011. "Studying Discrimination: Fundamental Challenges and Recent Progress." *Annual Review of Economics*, 3(1): 479–511.

Chelwa, Grieve, Darrick Hamilton, and James Stewart. 2022. "Stratification Economics: Core Constructs and Policy Implications." *Journal of Economic Literature*, 60(2): 377–399.

Chetty, Raj, Will S. Dobbie, Benjamin Goldman, Sonya Porter, and Crystal Yang. 2024. "Changing Opportunity: Sociological Mechanisms Underlying Growing Class Gaps and Shrinking Race Gaps in Economic Mobility." *NBER Working Paper 32697*. Data accessed from the following link on May 13, 2025: `https://opportunityinsights.org/data/?geographic_level=0&topic=0&paper_id=4687#resource-listing`.

Chyn, Eric, Kareem Haggag, and Bryan A. Stuart. 2022. "The Effects of Racial Segregation on Intergenerational Mobility: Evidence from Historical Railroad Placement." *NBER Working Paper 30563*.

Chyn, Eric, Kareem Haggag, and Bryan A. Stuart. 2024. "Inequality and Racial Backlash: Evidence from the Reconstruction Era and the Freedmen's Bureau." *NBER Working Paper 32314*.

Cinelli, Carlos, and Chad Hazlett. 2020. "Making Sense of Sensitivity: Extending Omitted Variable Bias." *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 82(1): 39–67.

Cook, Lisa D., Trevon D. Logan, and John M. Parman. 2014. "Distinctively Black Names in the American Past." *Explorations in Economic History*, 53: 64–82.

Cook, Lisa D., Trevon D. Logan, and John M. Parman. 2016. "The Mortality Consequences of Distinctively Black Names." *Explorations in Economic History*, 59: 114–125.

Cook, Lisa D., Trevon D. Logan, and John M. Parman. 2022. "The Antebellum

Roots of Distinctively Black Names." *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 55(1): 1–11.

Célérier, Claire, and Purnoor Tak. 2024. "Finance, Advertising, and Race." *Review of Financial Studies*. Forthcoming.

Dahis, Ricardo, Emily Nix, and Nancy Qian. 2020. "Choosing Racial Identity in the United States, 1880-1940." *NBER Working Paper 27774*.

Darity Jr., William A. 2005. "Stratification Economics: The Role of Intergroup Inequality." *Journal of Economics and Finance*, 29(2): 144–153.

Darity Jr., William A., Darrick Hamilton, and James B. Stewart. 2015. "A Tour de Force in Understanding Intergroup Inequality: An Introduction to Stratification Economics." *The Review of Black Political Economy*, 42(1-2): 1–6.

Darity Jr., William A., Patrick L. Mason, and James B. Stewart. 2006. "The Economics of Identity: The Origin and Persistence of Racial Identity Norms." *Journal of Economic Behavior & Organization*, 60(3): 283–305.

Davenport, Lauren. 2020. "The Fluidity of Racial Classifications." *Annual Review of Political Science*, 23: 221–240.

Davis, F. James. 2010. *Who Is Black?: One Nation's Definition.* Penn State Press.

Derenoncourt, Ellora, Chi Hyun Kim, Moritz Kuhn, and Moritz Schularick. 2024. "Wealth of Two Nations: The U.S. Racial Wealth Gap, 1860–2020." *The Quarterly Journal of Economics*, 139(2): 693–750.

Diette, Timothy M., Arthur H. Goldsmith, Darrick Hamilton, and William Jr. Darity. 2015. "Skin Shade Stratification and the Psychological Cost of Unemployment: Is there a Gradient for Black Females?" *The Review of Black Political Economy*, 42(1): 155–177.

Dixon, Angela R., and Edward E. Telles. 2017. "Skin Color and Colorism: Global Research, Concepts, and Measurement." *Annual Review of Sociology*, 43(1): 405–424.

Douglass, Frederick. 1874. "Letter to Gerrit Smith."

DuBois, W.E.B. 1903. *The Souls of Black Folk.* A.C. McClurg & Co.

Duncan, Brian, and Stephen J. Trejo. 2011. "Intermarriage and the Intergenerational Transmission of Ethnic Identity and Human Capital for Mexican American." *Journal of Labor Economics*, 29(2): 195–227.

Duncan, Brian, and Stephen J. Trejo. 2017. "The Complexity of Immigrant Generations: Implications for Assessing the Socioeconomic Integration of Hispanics and Asians." *ILR Review*, 70(5): 1146–1175.

Duncan, Brian, and Stephen J. Trejo. 2023. "Which Mexicans are White? Enumerator-assigned Race in the 1930 Census and the Socioeconomic Integration of Mexican Americans."

NBER Working Paper 31623.

Duncan, Brian, Jeffrey Grogger, Ana Sofia Leon, and Stephen J. Trejo. 2020. "New Evidence of Generational Progress for Mexican Americans." *Labour Economics*, 62: 101771.

Edwards, Justene Hill. 2024. *Savings and Trust: The Rise and Betrayal of the Freedman's Bank.* WW Norton & Company.

Engerman, Stanley L. 2003. "Slavery Without Racism, Racism Without Slavery: Mainland North America and Elsewhere." Yale University. New Haven, Connecticut. Conference held November 7-8, 2003.

Eschbach, Karl, Khalil Supple, and C. Matthew Snipp. 1998. "Changes in Racial Identification and the Educational Attainment of American Indians, 1970–1990." *Demography*, 35(1): 35–43.

Finlay, Keith, Elizabeth Luh, and Michael G. Mueller-Smith. 2024. "Race and Ethnicity (Mis)measurement in the U.S. Criminal Justice System." *NBER Working Paper 32657*.

Foy, Steven L., Victor Ray, and Alexandra Hummel. 2017. "The Shade of a Criminal Record: Colorism, Incarceration, and External Racial Classification." *Socius: Sociological Research for a Dynamic World*, 3.

Francis, Dania V., Bradley L. Hardy, and Damon Jones. 2022. "Black Economists on Race and Policy: Contributions to Education, Poverty and Mobility, and Public Finance." *Journal of Economic Literature*, 60(2): 454–493.

Frazier, E. Franklin. 1957. *Black Bourgeoisie.* Glencoe, IL: Free Press.

Freeman, Jonathan B., Andrew M. Penner, Aliya Saperstein, Matthias Scheutz, and Nalini Ambady. 2011. "Looking the Part: Social Status Cues Shape Race Perception." *PloS ONE*, 6(9): e25107.

Frieden, Jeffry, Richard S. Grossman, and Daniel Lowery. 2024. "Was Freedom Road a Dead End? Political and Socio-Economic Effects of Reconstruction in the American South." *CESifo Working Paper No. 10971*.

Goldsmith, Arthur H., Darrick Hamilton, and William A. Darity Jr. 2006. "Shades of Discrimination: Skin Tone and Wages." *American Economic Review*, 96(2): 242–245.

Goldsmith, Arthur H., Darrick Hamilton, and William A. Darity Jr. 2007. "From Dark to Light: Skin Color and Wages Among African-Americans." *The Journal of Human Resources*, 42(4): 701–738.

Gyimah-Brempong, Kwabena, and Gregory N. Price. 2006. "Crime and Punishment: and Skin Hue Too?" *American Economic Review*, 96(2): 246–250.

Hahn, Robert A., Joseph Mulinare, and Steven M. Teutsch. 1992. "Inconsistencies in Coding of Race and Ethnicity Between Birth and Death in US Infants: A New Look at

Infant Mortality, 1983 through 1985." *JAMA*, 267(2): 259–263.

Haney López, Ian F. 1994. "The Social Construction of Race: Some Observations on Illusion, Fabrication, and Choice." *Harvard Civil Rights-Civil Liberties Law Review*, 29: 1–62.

Harburg, Ernest, Lillian Gleibermann, Peter Roeper, M. Anthony Schork, and William J. Schull. 1978. "Skin Color, Ethnicity, and Blood Pressure I: Detroit Blacks." *American Journal of Public Health*, 68(12): 1177–1183.

Harris, Cheryl I. 1993. "Whiteness as Property." *Harvard Law Review*, 106(8): 1707–1791.

Heckman, James J. 1979. "Sample Selection Bias as a Specification Error." *Econometrica*, 47(1): 153–161.

Hersch, Joni. 2006. "Skin-Tone Effects among African Americans: Perceptions and Reality." *American Economic Review*, 96(2): 251–255.

Hersch, Joni. 2018. "Colorism Against Legal Immigrants to the United States." *American Behavioral Scientist*, 62(14): 2117–2132.

Hirschfeld, Lawrence A. 2008. "Children's Developing Conceptions of Race." *Handbook of Race, Racism, and the Developing Child*, 37–54.

Hochschild, Jennifer L., and Brenna M. Powell. 2008. "Racial Reorganization and the United States Census 1850-1930: Mulattoes, Half-Breeds, Mixed Parentage, Hindoos, and the Mexican Race." *Studies in American Political Development*, 22(1): 59–96.

Hughes, Michael, and Bradley R. Hertel. 1990. "The Significance of Color Remains: A Study of Life Chances, Mate Selection, and Ethnic Consciousness among Black Americans." *Social Forces*, 68(4): 1105–1120.

Humes, Karen, and Howard Hogan. 2009. "Measurement of Race and Ethnicity in a Changing, Multicultural America." *Race and Social Problems*, 1: 111–131.

Hunter, Margaret. 2016. "Colorism in the Classroom: Skin Tone Stratifies African American and Latina/o Students." *Theory Into Practice*, 55(1): 54–61.

Ioannidis, John P. A., Neil R. Powe, and Clyde W. Yancy. 2021. "Recalibrating the Use of Race in Medical Research." *JAMA*, 325(7): 623–624.

Johnson, Charles. 1934. *Shadow of the Plantation.* University of Chicago Press.

Johnson, James H., Elisa Jayne Bienenstock, and Jennifer A. Stoloff. 1995. "An Empirical Test of the Cultural Capital Hypothesis." *The Review of Black Political Economy*, 23(4): 7–27.

Katz, Phyllis A., and Jennifer A. Kofkin. 1997. "Race, Gender, And Young Children." In *Developmental Psychopathology: Perspectives On Adjustment, Risk, And Disorder*. 51–74. Cambridge University Press.

Keith, Verna M., and Cedric Herring. 1991. "Skin Tone and Stratification in the Black Community." *American Journal of Sociology*, 97(3): 760–778.

Kessen, William, and Sally Weiskopf. 1976. "Color Vision and Hue Categorization in Young Human Infants." *Journal of Experimental Psychology: Human Perception and Performance*, 2(1): 115–129.

Kinzler, Katherine D., and Elizabeth S. Spelke. 2011. "Do Infants Show Social Preferences for People Differing in Race?" *Cognition*, 119(1): 1–9.

Klonoff, Elizabeth A., and Hope Landrine. 2000. "Is Skin Color a Marker for Racial Discrimination? Explaining the Skin Color–Hypertension Relationship." *Journal of Behavioral Medicine*, 23(4): 329–338.

Kosack, Edward, and Zachary Ward. 2020. "El Sueño Americano? The Generational Progress of Mexican Americans Prior to World War II." *The Journal of Economic History*, 80(4): 961–995.

Kramer, Rory, Robert DeFina, and Lance Hannon. 2016. "Racial Rigidity in the United States: Comment on Saperstein and Penner." *American Journal of Sociology*, 122(1): 233–245.

Kreisman, Daniel, and Marcos A. Rangel. 2015. "On the Blurring of the Color Line: Wages and Employment for Black Males of Different Skin Tones." *The Review of Economics and Statistics*, 97(1): 1–13.

Krieger, Nancy, Stephen Sidney, and Eugenie Coakley. 1998. "Racial Discrimination and Skin Color in the CARDIA Study: Implications for Public Health Research. Coronary Artery Risk Development in Young Adults." *American Journal of Public Health*, 88(9): 1308–1313.

Landor, Antoinette M., Leslie Gordon Simons, Ronald L. Simons, Gene H. Brody, Chalandra M. Bryant, Frederick X. Gibbons, Ellen M. Granberg, and Janet N. Melby. 2013. "Exploring the Impact of Skin Tone on Family Dynamics and Race-Related Outcomes." *Journal of Family Psychology*, 27(5): 817–826.

Laudares, Humberto, and Felipe Valencia Caicedo. 2023. "Tordesillas, Slavery and the Origins of Brazilian Inequality." *CEPR Discussion Paper 18245*.

Lieberson, Stanley, and Mary C. Waters. 1993. "The Ethnic Responses of Whites: What Causes Their Instability, Simplification, and Inconsistency?" *Social Forces*, 72(2): 421–450.

Logan, Trevon D. 2020. "Do Black Politicians Matter? Evidence from Reconstruction." *The Journal of Economic History*, 80(1): 1–37.

Louie, Patricia, and Rima Wilkes. 2018. "Representations of Race and Skin Tone in Medical Textbook Imagery." *Social Science & Medicine*, 202: 38–42.

Lovell, Peggy A., and Charles H. Wood. 1998. "Skin Color, Racial Identity, and Life Chances in Brazil." *Latin American Perspectives*, 25(3): 90–109.

Luh, Elizabeth. 2023. "Not so Black and White: Uncovering Racial Bias Through System-

atically Misreported Trooper Reports." *Working Paper*.

Majumdar, Rochona. 2004. "Looking for Brides and Grooms: Ghataks, Matrimnials, and the Marriage Market in Colonial Calcutts, circa 1875–1940." *The Journal of Asian Studies*, 63(4): 911–935.

McGee, Dan. 2025. "Exploitation Through Racialization." *The Quarterly Journal of Economics*, Forthcoming.

Mill, Roy, and Luke C.D. Stein. 2016. "Race, Skin Color, and Economic Outcomes in Early Twentieth-Century America." *Working Paper*.

Monk Jr., Ellis P. 2014. "Skin Tone Stratification Among Black Americans, 2001–2003." *Social Forces*, 92(4): 1313–1337.

Monk Jr., Ellis P. 2016. "The Consequences of "Race and Color" in Brazil." *Social Problems*, 63(3): 413–430.

Montagu, Ashley. 1945. *Man's Most Dangerous Myth: The Fallacy of Race.* Columbia University Press.

Morning, Ann. 2011. *The Nature of Race: How Scientists Think and Teach about Human Difference.* University of California Press.

Myrdal, Gunnar. 1944. *An American Dilemma: The Negro Problem and Modern Democracy.* New York: Harper & Brothers.

Noghanibehambari, Hamid, and Jason Fletcher. 2025. "Passing as White: Racial Identity and Old-Age Longevity." *NBER Working Paper 33394*.

Omi, Michael, and Howard Winant. 2014. *Racial Formation in the United States.* Routledge.

Oster, Emily. 2019. "Unobservable Selection and Coefficient Stability: Theory and Evidence." *Journal of Business & Economic Statistics*, 37(2): 187–204.

Osthaus, Carl R. 1976. *Freedmen, Philanthropy, and Fraud: A History of the Freedman's Savings Bank.* University of Illinois Press.

Penner, Andrew M., and Aliya Saperstein. 2008. "How Social Status Shapes Race." *Proceedings of the National Academy of Sciences*, 105(50): 19628–19630.

Penner, Andrew M., and Aliya Saperstein. 2013. "Engendering Racial Perceptions: An Intersectional Analysis of How Social Status Shapes Race." *Gender & Society*, 27(3): 319–344.

Rangel, Marcos A. 2015. "Is Parental Love Colorblind? Human Capital Accumulation within Mixed Families." *The Review of Black Political Economy*, 42(1): 57–86.

Ransford, H. Edward. 1970. "Skin Color, Life Chances, and Anti-White Attitudes." *Social Problems*, 18(2): 164–179.

Reece, Robert L. 2018. "Genesis of U.S. Colorism and Skin Tone Stratification: Slavery,

Freedom, and Mulatto-Black Occupational Inequality in the Late 19th Century." *The Review of Black Political Economy*, 45(1): 3–21.

Reece, Robert L. 2019. "Color Crit: Critical Race Theory and the History and Future of Colorism in the United States." *Journal of Black Studies*, 50(1): 3–25.

Reece, Robert L. 2021. "The Missing Social Movement: Colorism in Black America." *Interface: A Journal for and about Social Movements*, 13(2): 293–311.

Rogers, Joel Augustus. 1952. *Nature Knows No Color-Line.* Self-published.

Rose, Evan K. 2023. "A Constructivist Perspective on Empirical Discrimination Research." *Journal of Economic Literature*, 61(3): 906–923.

Saperstein, Aliya, and Aaron Gullickson. 2013. "A "Mulatto Escape Hatch" in the United States? Examining Evidence of Racial and Social Mobility During the Jim Crow Era." *Demography*, 50(5): 1921–1942.

Saperstein, Aliya, and Andrew M. Penner. 2012. "Racial Fluidity and Inequality in the United States." *American Journal of Sociology*, 118(3): 676–727.

Saperstein, Aliya, and Andrew M. Penner. 2016. "Still Searching for a True Race? Reply to Kramer et al. and Alba et al." *American Journal of Sociology*, 122(1): 263–285.

Schwartzman, Luisa Farah. 2007. "Does Money Whiten? Intergenerational Changes in Racial Classification in Brazil." *American Sociological Review*, 72(6): 940–963.

Seltzer, Richard, and Robert C. Smith. 1991. "Color Differences in the Afro-American Community and the Differences they Make." *Journal of Black Studies*, 21(3): 279–286.

Sen, Maya, and Omar Wasow. 2016. "Race as a 'Bundle of Sticks': Designs that Estimate Effects of Seemingly Immutable Characteristics." *Annual Review of Political Science*, 19: 499–522.

Smedley, Audrey, and Brian D. Smedley. 2005. "Race as Biology is Fiction, Racism as a Social Problem is Real: Anthropological and Historical Perspectives on the Social Construction of Race." *American Psychologist*, 60(1): 16–26.

Stein, Luke C D, and Constantine Yannelis. 2020. "Financial Inclusion, Human Capital, and Wealth Accumulation: Evidence from the Freedman's Savings Bank." *The Review of Financial Studies*, 33(11): 5333–5377.

Telles, Edward, and Tianna Paschel. 2014. "Who Is Black, White, or Mixed Race? How Skin Color, Status, and Nation Shape Racial Classification in Latin America." *American Journal of Sociology*, 120(3): 864–907.

Traweek, Virginia, and Malcolm Wardlaw. 2024. "Societal Inequality and Bank Deposit Dynamics: Evidence from the Freedman's Savings Bank." *Working Paper.*

U.S. Census Office. 1870. *Instructions to Assistant Marshals.* U.S. Government Printing Office.

U.S. Census Office. 1872. *Compendium of the Ninth Census (June 1, 1870).* U.S. Government Printing Office.

Uzogara, Ekeoma E. 2019. "Dark and Sick, Light and Healthy: Black Women's Complexion-based Health Disparities." *Ethnicity & Health*, 24(2): 125–146.

Villarreal, Andrés. 2010. "Stratification by Skin Color in Contemporary Mexico." *American Sociological Review*, 75(5): 652–678.

Wade, T. Joel, Melanie Judkins Romano, and Leslie Blue. 2004. "The Effect of African American Skin Color on Hiring Preferences." *Journal of Applied Social Psychology*, 34(12): 2550–2558.

Washington, Scott Leon. 2011. "Hypodescent: A History of the Crystallization of the One-Drop Rule in the United States, 1880-1940." PhD diss. Princeton University.

Waters, Mary C. 1994. "Ethnic and Racial Identities of Second-Generation Black Immigrants in New York City." *International Migration Review*, 28(4): 795–820.

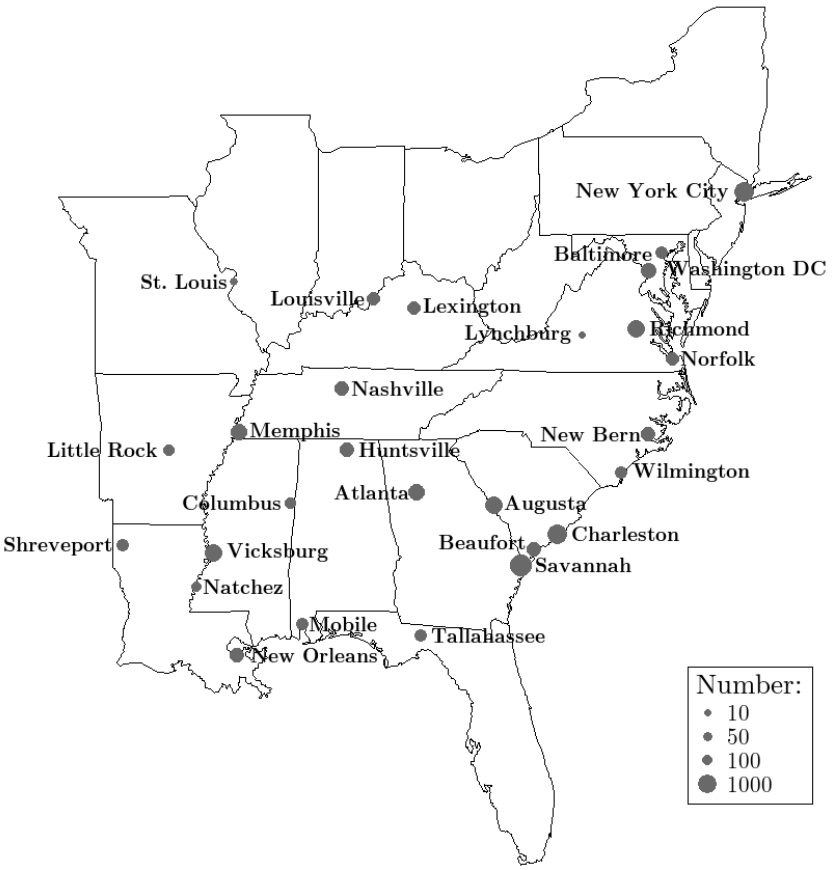
Witzig, Ritchie. 1996. "The Medicalization of Race: Scientific Legitimization of a Flawed Social Construct." *Annals of Internal Medicine*, 125(8): 675–679.

Woo-Mora, L. Guillermo. 2024. "Unveiling the Cosmic Race: Intergenerational Skin Tone Gaps in Latin America and the Caribbean." *Working Paper*.

Zuberi, Tukufu. 2001. *Thicker Than Blood: How Racial Statistics Lie.* University of Minnesota Press.

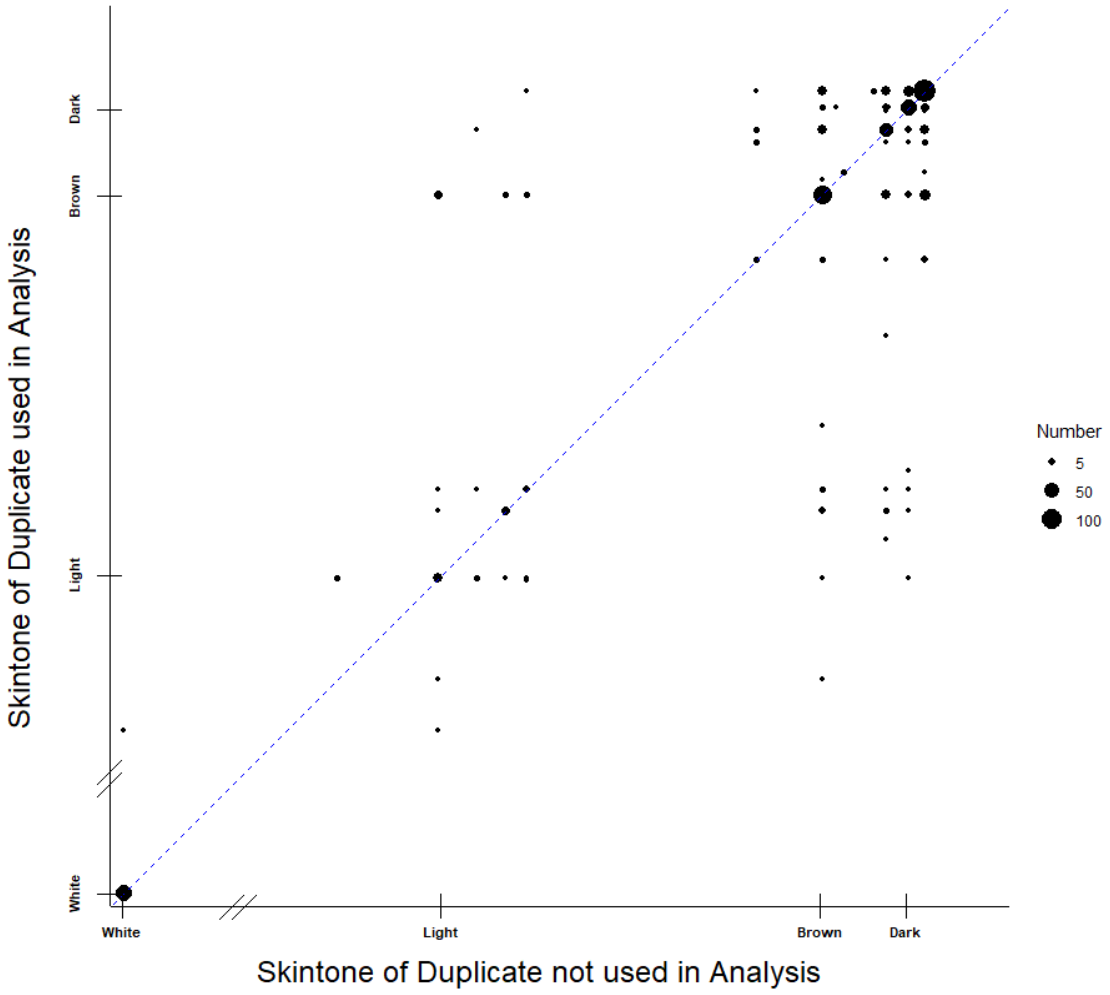
Zwane, Alix Peterson, Jonathan Zinman, Eric Van Dusen, William Pariente, Clair Null, Edward Miguel, Michael Kremer, Dean S. Karlan, Richard Hornbeck, Xavier Giné, Esther Duflo, Florencia Devoto, Bruno Crepon, and Abhijit Banerjee. 2011. "Being surveyed can change later behavior and related parameter estimates." *Proceedings of the National Academy of Sciences*, 108(5): 1821–1826.

Figure 1. Freedman Bank Depositor Accounts Linked to 1870 Census, by Branch



Notes: This figure shows the locations of Freedman Bank branches in our sample, where the size of the circle is proportional to the number of depositors we link to the Census.

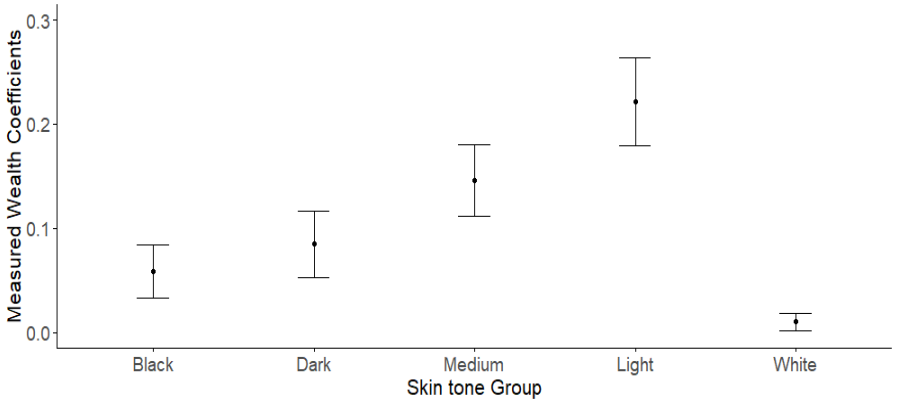
Figure 2. Comparing Repeated Bank Records on Depositor Skin Tone



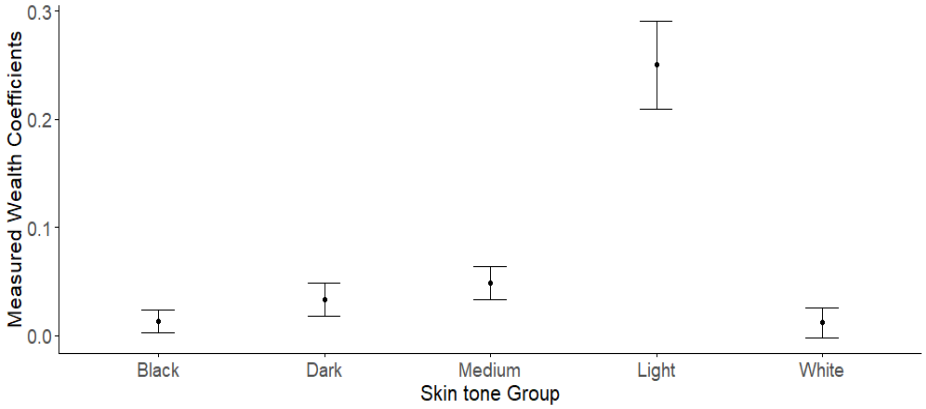
Notes: For 578 Freedman Bank depositors that opened an account twice on different dates and thereby have two measures of skin tone, this figure plots the two skin tone index values against each other: the y-axis has the value used in the main analysis (from the depositor record with more biographical information) and the x-axis has the value not used in the main analysis (which we use as an instrument in some specifications). Each axis is labeled with reference values for the skin tone index (corresponding to white, light, brown, and dark in Table 1). Note the condensed axis between white and light. The size of the circle is proportional to the number of observations, and these circles are plotted against a dashed 45-degree line.

Figure 3. Graphed Effects of Measured Wealth on Racialization, by Skin Tone Group

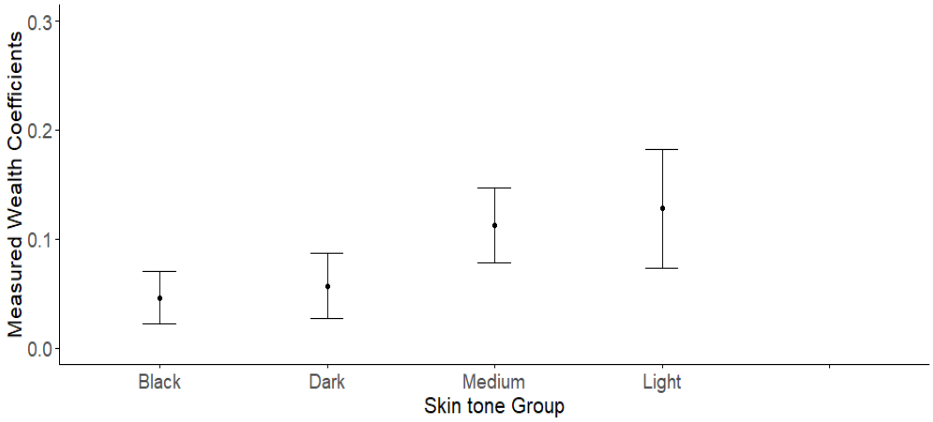
Panel A: White or Mulatto (vs. Black)



Panel B: White (vs. Mulatto or Black)

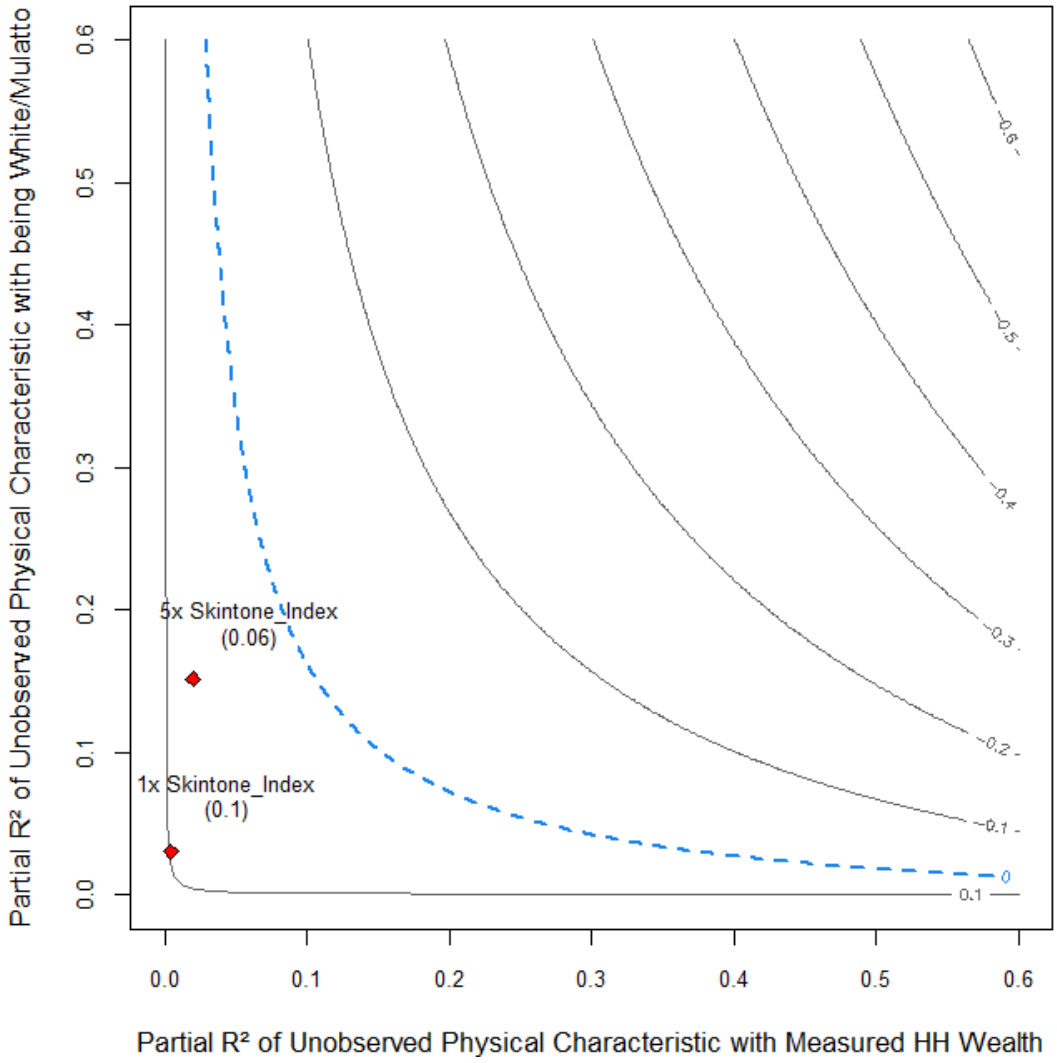


Panel C: Mulatto (vs. Black)



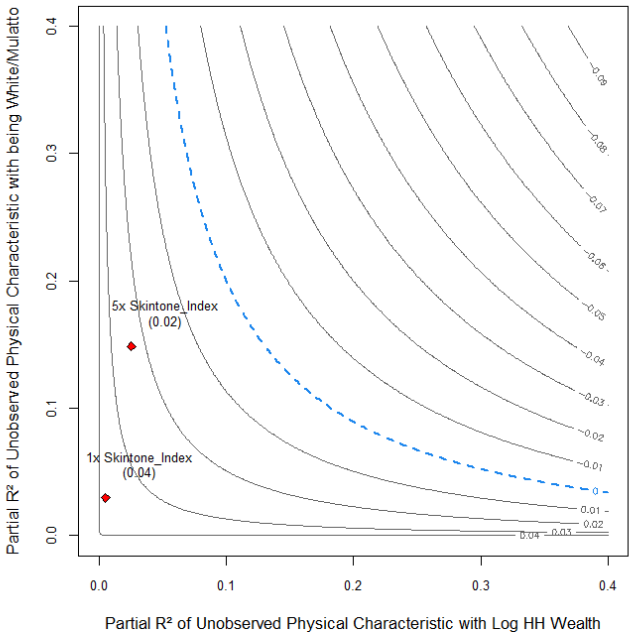
Notes: This figure plots the coefficients from the first row of Panels A, B, and C in Table 4, which show how the effect of measured wealth on Census race varies across the reported skin tone groups. The vertical bars correspond to 95% confidence intervals.

Figure 4. Bounding the Influence of Unmeasured Physical Characteristics: Effect of Measured Wealth on Racialization as White or Mulatto (vs. Black)

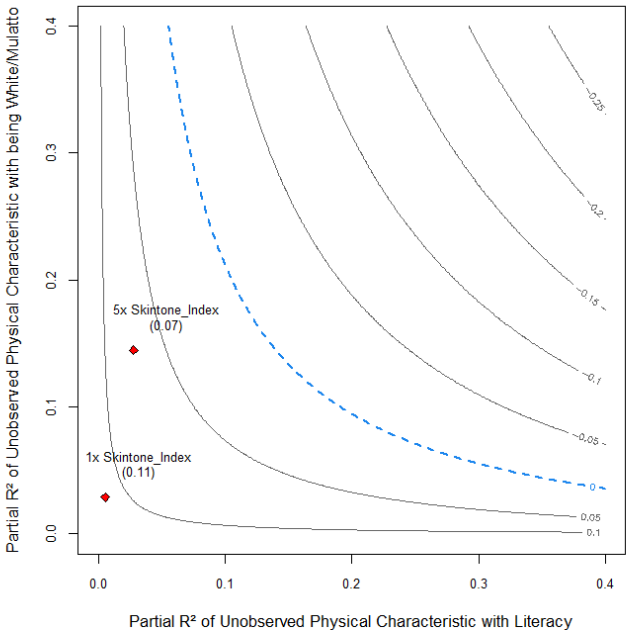


Notes: This figure shows the potential influence of unmeasured physical characteristics on the estimated effect of measured wealth on people being racialized in the 1870 Census as White or Mulatto (as opposed to Black). The first red diamond, closest to the origin, indicates the estimated effect of wealth if there were unmeasured physical characteristics that were as jointly predictive of measured wealth and racialization as the detailed skin tone index (beyond three coarse skin tone groups). The second red diamond corresponds to unmeasured physical characteristics that are 5 times as influential. To fully explain the effect, reaching the dashed blue line, unmeasured physical characteristics would need to be 12 times as jointly predictive of measured wealth and racialization as the detailed skin tone index. If unmeasured physical characteristics explained all residual variation in race, moving up the y-axis to one, then these unmeasured characteristics would need to be 4.5 times more correlated with having measured wealth than the detailed skin tone index.

Figure 5. Bounding the Influence of Unmeasured Physical Characteristics:
Panel A. Effect of Log Wealth on Racialization as White or Mulatto (vs. Black)



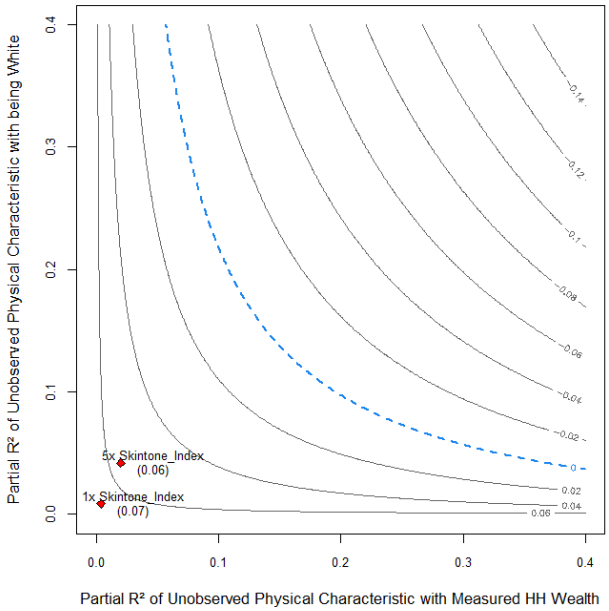
Panel B. Effect of Literacy on Racialization as White or Mulatto (vs. Black)



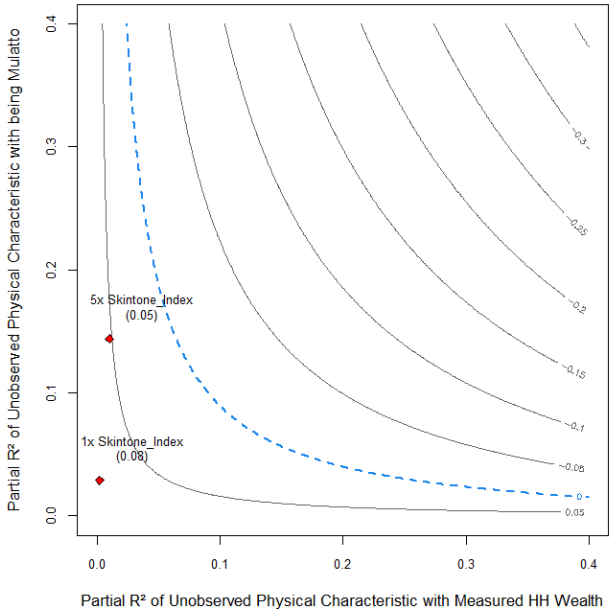
Notes: Similar to Figure 3, this figure shows the potential influence of unmeasured physical characteristics on the estimated effect of log wealth (Panel A) and literacy (Panel B) on people being racialized in the 1870 Census as White or Mulatto (as opposed to Black). For Panel A, to fully explain the effect of log wealth, unmeasured physical characteristics would need to be 12 times as jointly predictive of log wealth and racialization as the detailed skin tone index. If unmeasured physical characteristics explained all residual variation in race, moving up the y-axis to one, then these unmeasured physical characteristics would need to be 4.4 times more correlated with log wealth than the detailed skin tone index. For Panel B, to fully explain the effect of literacy, unmeasured physical characteristics would need to be 12 times as jointly predictive of literacy and racialization as the detailed skin tone index. If these characteristics fully explained all residual variation in race, they would need to be 3.8 times more correlated with literacy than the detailed skin tone index.

Figure 6. Bounding the Influence of Unmeasured Physical Characteristics:

Panel A. Effect of Measured Wealth on Racialization as White (vs. Mulatto or Black)



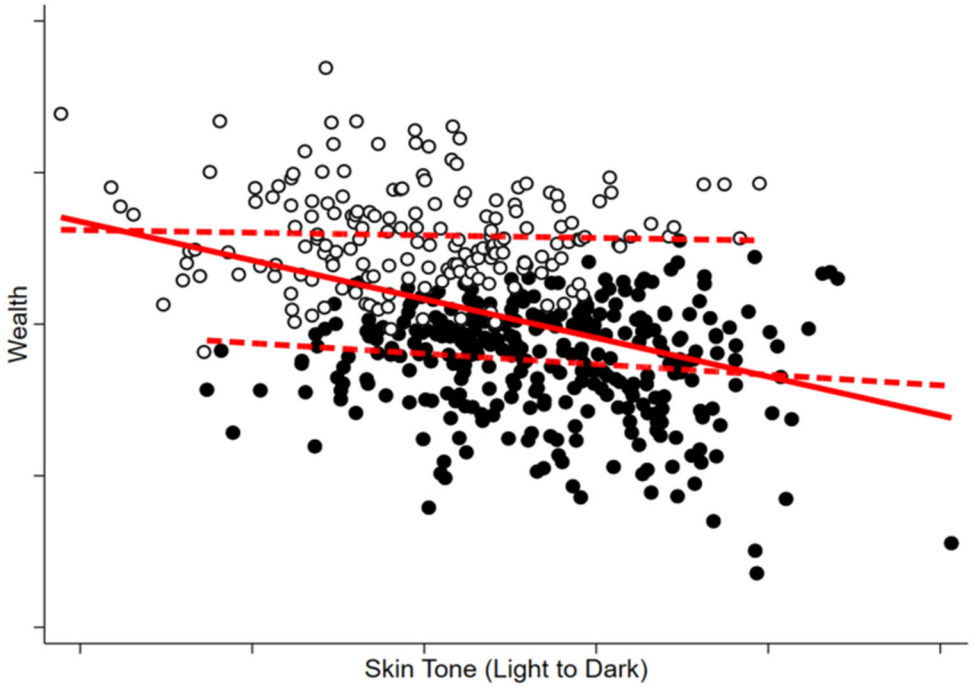
Panel B. Effect of Measured Wealth on Racialization as Mulatto (vs. Black)



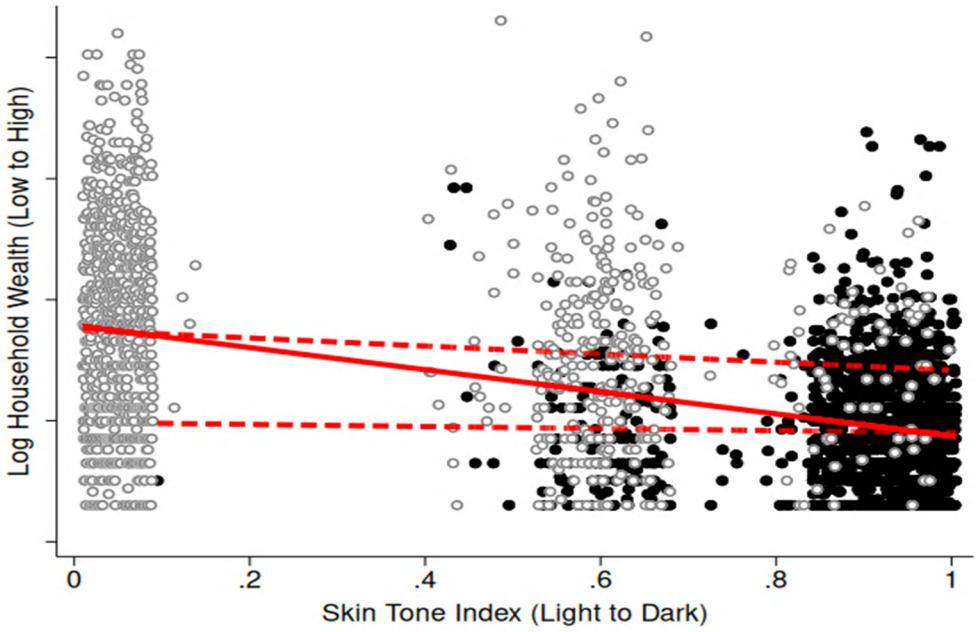
Notes: Similar to Figure 3, this figure shows the potential influence of unmeasured physical characteristics on the estimated effect of having measured wealth on people being racialized in the 1870 Census as White as opposed to Mulatto or Black (in Panel A) and being racialized as Mulatto as opposed to Black (in Panel B). For Panel A, to fully explain the effect of having measured wealth, unmeasured physical characteristics would need to be 26 times as jointly predictive of measured wealth and racialization as the detailed skin tone index. If unmeasured physical characteristics explained all residual variation in race, moving up the y-axis to one, then these unmeasured physical characteristics would need to be 6.0 times more correlated with having measured wealth than the detailed skin tone index. For Panel B, to fully explain the effect of having measured wealth, unmeasured physical characteristics would need to be 13 times as jointly predictive of having measured wealth and racialization as the detailed skin tone index. If these characteristics fully explained all residual variation in race, they would need to be 5.0 times more correlated with having measured wealth than the detailed skin tone index.

Figure 7: Simulated and Empirical Correlations Between Wealth and Skin Tone

Panel A: Simulated Correlations, Unconditional and Conditional on Census Race



Panel B: Empirical Correlations, Unconditional and Conditional on Census Race



Notes: Panel A shows simulated correlations between wealth and skin tone across all people (solid red line) and the attenuated relationships within each selected racial group (two dashed lines). Panel B shows empirical correlations between wealth and skin tone, across all people with measured wealth (solid red line) and within the groups racialized as Black or White in the 1870 Census (two dashed lines). In both panels, the black circles represent values for people racialized as Black and the hollow circles represent values for people racialized as White.

Table 1. Freedman Bank Depositor Complexion and 1870 Census Race

Depositor Complexion:	Number of Depositors (1)	By 1870 Census Race: Black (2)	Mulatto (3)	White (4)	Skin Tone Index (5)
Black	3,606	3,383	198	25	0.97
Colored	95	86	9	0	0.95
Dark	1,633	1,489	131	13	0.95
Very Dark	49	44	5	0	0.95
Dark Black	31	27	4	0	0.94
Dark Brown	1,555	1,366	173	16	0.93
Very Dark Brown	72	61	11	0	0.92
Medium Dark Brown	19	17	1	1	0.92
Medium Black	89	72	16	1	0.90
Medium Brown	98	80	15	3	0.89
Brown	2,967	2,290	650	27	0.88
Nearly Black	183	145	13	25	0.83
Light Black	32	18	13	1	0.77
Dark Mulatto	20	10	9	1	0.73
Very Light Brown	13	6	6	1	0.69
Light Colored	6	2	4	0	0.67
Griff	45	27	5	13	0.66
Yellow	441	192	181	68	0.64
Light Brown	532	249	165	118	0.62
Mulatto	135	56	50	29	0.60
Light	715	273	266	176	0.57
Bright	83	30	34	19	0.57
Very Light	67	18	29	20	0.49
Nearly White	53	11	25	17	0.44
Olive	8	3	1	4	0.44
Fair	15	1	1	13	0.10
White	1,576	8	20	1,548	0.01
Total	14,138	9,964	2,035	2,139	0.78

Notes: Column 1 reports the total number of Freedman Bank depositors with the indicated complexion in the Bank's depositor record. We use these 27 detailed skin tone categories, which we standardize from 368 unique strings that include spelling variations and occasional other physical descriptives. Columns 2, 3, and 4 report the number of depositors racialized as Black, Mulatto, or White in the 1870 Census. Column 5 reports a continuous "Skin Tone Index" that is defined for each skin tone category as: the share of depositors racialized as Black plus one-half times the share of depositors racialized as Mulatto.

Table 2. Depositor Summary Statistics in 1870 Census

	Sample	Differences from Full Census:		
	Mean	Black	Mulatto	White
	(1)	(2)	(3)	(4)
Adult	0.73	-	-	-
	[0.45]			
Male	0.72	-	-	-
	[0.45]			
Black	0.70	-	-	-
	[0.46]			
Mulatto	0.14	-	-	-
	[0.35]			
Measured Household Wealth	0.27	0.041	0.091	-0.006
	[0.44]	(0.004)	(0.010)	(0.009)
Household Wealth	$802	$1.5	$82.4	-$39.4
	[6586]	(37.0)	(134.4)	(473.5)
Literate	0.35	0.021	0.079	0.011
	[0.48]	(0.003)	(0.010)	(0.008)
Number of Depositors	14,138	9,964	2,035	2,139

Notes: Column 1 reports average characteristics for our sample of Freedman Bank depositors linked to the 1870 Census. Columns 2, 3, and 4 report differences for depositors by Census race, relative to non-depositors in the full Census, controlling for: county fixed effects and indicator variables for adult (18+) and male. We exclude all non-depositors in households with depositors. Literate is defined only for people aged 10 and older. Standard deviations are reported in brackets, and robust standard errors are reported in parantheses.

Table 3. Estimated Differences in Census Racial Assignment by Socioeconomic Status

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Measured Wealth						
Wealth ≥ $100	0.109	0.108	0.068	0.068	0.087	0.085
	(0.008)	(0.007)	(0.005)	(0.005)	(0.009)	(0.009)
Skin Tone Index	-0.289		-0.275		-0.307	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel B: Log Wealth						
Log Wealth	0.040	0.041	0.031	0.030	0.044	0.043
	(0.002)	(0.002)	(0.002)	(0.002)	(0.004)	(0.004)
Skin Tone Index	-0.281		-0.267		-0.302	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel C: Literacy						
Literate	0.124	0.122	0.065	0.067	0.094	0.092
	(0.008)	(0.008)	(0.005)	(0.005)	(0.008)	(0.008)
Skin Tone Index	-0.283		-0.271		-0.301	
	(0.004)		(0.003)		(0.011)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	13,029	13,029	13,029	13,029	11,277	11,277

Notes: Panel A, Columns 1 and 2, report effects of the household having measured wealth (≥ $100) on whether depositors are racialized in the 1870 Census as White or Mulatto (as opposed to Black). Columns 3 and 4 report effects on whether depositors are racialized as White (as opposed to Mulatto or Black), and Columns 5 and 6 report effects on whether depositors are racialized as Mulatto (as opposed to Black, excluding White depositors from the sample). Panel B reports effects of the household's log wealth, adding $45.25 to all households with zero measured wealth. Panel C reports effects of the depositor being literate, which is limited to people ages 10 and older in the Census. Columns 1, 3, and 5 control for the skin tone index (from Column 5 of Table 1), which we standardize to have a mean of zero and a standard deviation of one. Columns 2, 4, and 6 control for fixed effects for each of the 27 detailed skin tone categories (listed in Table 1). All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 4. Effects of Socioeconomic Status on Census Racial Assignment, by Skin Tone Group

	Skin Tone Group:				
	Black	Dark	Medium	Light	White
	(1)	(2)	(3)	(4)	(5)
Panel A: White or Mulatto vs. Black					
Wealth ≥ $100	0.058	0.085	0.146	0.222	0.010
	(0.013)	(0.016)	(0.018)	(0.021)	(0.004)
Log Wealth	0.032	0.040	0.067	0.083	0.002
	(0.007)	(0.007)	(0.007)	(0.005)	(0.001)
Literate	0.034	0.067	0.144	0.306	0.035
	(0.011)	(0.014)	(0.018)	(0.022)	(0.019)
Number of Depositors	3,701	3,359	3,389	2,113	1,576
Panel B: White vs. Mulatto or Black					
Wealth ≥ $100	0.014	0.033	0.049	0.250	0.012
	(0.005)	(0.008)	(0.008)	(0.021)	(0.007)
Log Wealth	0.012	0.017	0.026	0.093	0.003
	(0.004)	(0.004)	(0.004)	(0.006)	(0.002)
Literate	0.014	0.022	0.031	0.256	0.067
	(0.005)	(0.005)	(0.007)	(0.020)	(0.026)
Number of Depositors	3,701	3,359	3,389	2,113	1,576
Panel C: Mulatto vs. Black					
Wealth ≥ $100	0.046	0.057	0.113	0.128	
	(0.012)	(0.015)	(0.017)	(0.028)	
Log Wealth	0.022	0.026	0.051	0.067	
	(0.006)	(0.007)	(0.007)	(0.009)	
Literate	0.022	0.049	0.124	0.229	
	(0.010)	(0.013)	(0.018)	(0.027)	
Number of Depositors	3,676	3,329	3,331	1,635	

Notes: Each reported coefficient is from a separate regression, as in Table 3 (Columns 2, 4, and 6 of Panels A, B, and C). Each column splits the analysis from Table 3 into separate skin tone groups. These skin tone groups are defined from the detailed skin tone categories in Table 1: Black (black and colored); Dark (dark to medium dark brown); Medium (medium black to dark mulatto); Light (very light brown to fair); and White (white). The samples are moderately smaller for the Literate row, as this question is limited to people ages 10 and older in the Census. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 5. Geographic Heterogeneity in Census Racial Assignment by Socioeconomic Status

	One Standard Deviation Difference in County Characteristics:						
	Lower Black Wealth	Larger Racial Wealth Gap	Lower Black Literacy	Larger Racial Literacy Gap	More Racial Violence	Lower Black Generational Mobility	Larger Racial Gap in Generational Mobility
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: White or Mulatto vs. Black							
Wealth ≥ $100	-0.003	-0.010	0.007	-0.004	0.019	-0.009	0.008
	(0.005)	(0.007)	(0.007)	(0.006)	(0.010)	(0.006)	(0.006)
Log Wealth	0.000	-0.005	0.003	-0.001	0.012	-0.002	0.000
	(0.001)	(0.002)	(0.002)	(0.002)	(0.005)	(0.001)	(0.002)
Literate	-0.009	-0.022	0.034	0.044	0.001	-0.003	-0.014
	(0.005)	(0.007)	(0.008)	(0.007)	(0.009)	(0.007)	(0.007)
# of Depositors	14,124	14,124	14,124	14,124	8,055	14,119	14,119
Panel B: White vs. Mulatto or Black							
Wealth ≥ $100	0.000	-0.030	0.009	-0.011	0.021	-0.017	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)	(0.004)
Log Wealth	0.001	-0.009	0.004	-0.003	0.014	-0.003	0.000
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)	(0.001)	(0.002)
Literate	-0.018	-0.014	0.011	0.013	0.018	0.001	-0.005
	(0.004)	(0.005)	(0.005)	(0.004)	(0.008)	(0.006)	(0.005)
# of Depositors	14,124	14,124	14,124	14,124	8,055	14,119	14,119
Panel C: Mulatto vs. Black							
Wealth ≥ $100	-0.009	0.010	0.001	0.004	0.005	0.005	0.013
	(0.010)	(0.008)	(0.008)	(0.007)	(0.010)	(0.009)	(0.007)
Log Wealth	-0.004	0.001	0.002	0.001	0.006	0.003	0.004
	(0.003)	(0.003)	(0.004)	(0.004)	(0.006)	(0.004)	(0.004)
Literate	-0.002	-0.017	0.029	0.036	-0.011	-0.006	-0.011
	(0.008)	(0.009)	(0.007)	(0.006)	(0.008)	(0.009)	(0.009)
# of Depositors	11,999	11,999	11,999	11,999	7,563	11,983	11,983

Notes: Each column reports how the effect of wealth or literacy varies in counties with one standard deviation: lower Black wealth (Column 2), larger Black-White wealth gap (Column 3), lower Black literacy (Column 3), larger Black-White gap in literacy (Column 4), greater racial violence (Column 5), lower Black intergenerational mobility (Column 6), and larger Black-White gap in intergenerational mobility (Column 7). We include the main effects and report the interaction with the indicated county characteristic. For Columns 1 and 2, we use the county's average wealth of people racialized as Black in the 1870 Census: total household wealth of households with a Black household head in the county, divided by the number of Black household heads in the county. For Columns 3 and 4, we use the county's literacy rate (for people ages 10 and older) among people racialized as Black in the 1870 Census. We exclude depositors and their family members in calculating county averages, and the sample declines slightly because of 14 depositors in counties with zero Black people in the Census. For Column 5, we use data from Chyn, Haggag, and Stuart (2024) on the frequency of crimes reported by the Freedmen's Bureau for racial violence perpetrated against African Americans. For each county, we calculate the number of crimes reported per person racialized as Black or Mulatto, conditional on the county having at least one report of violence. The sample declines because of non-reported data for some states. For Columns 6 and 7, we use data from Chetty, Dobbie, Goldman, Porter, and Yang (2024) on intergenerational mobility, comparing parents' and childrens' earnings. To define Black mobility, we take the difference of incomes of a Black child born to parents in the 75th percentile of the Black income distribution within a county to a Black child born in the 25th distribution of the income distribution (averaging over the 1978-1992 birth cohorts). A larger difference corresponds to a less mobile county. The Black-White mobility gap is defined as the difference between the previously defined Black mobility and a similarly-defined White mobility measure. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 6. Estimated Differences in Census Racial Assignment by Socioeconomic Status, Interacting Effects of Wealth and Literacy

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Measured Wealth	0.078	0.072	0.020	0.026	0.056	0.055
	(0.010)	(0.010)	(0.005)	(0.005)	(0.010)	(0.010)
Literate	0.100	0.095	0.033	0.037	0.069	0.069
	(0.008)	(0.008)	(0.005)	(0.004)	(0.009)	(0.009)
Measured Wealth * Literate	0.052	0.063	0.098	0.087	0.078	0.074
	(0.015)	(0.015)	(0.010)	(0.010)	(0.020)	(0.020)
Skin Tone Index	-0.271		-0.261		-0.296	
	(0.004)		(0.003)		(0.011)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	13,029	13,029	13,029	13,029	11,277	11,277

Notes: This table reports estimates similar to Table 3, but jointly including indicators for measured wealth and literacy of the depositor, along with their interaction. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 7. Differences in Census Racial Assignment by Bank Record Characteristics

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: "Distinctively Black" Name						
"Distinctively Black" Name	-0.021	-0.019	-0.007	-0.009	-0.014	-0.013
	(0.003)	(0.003)	(0.001)	(0.001)	(0.003)	(0.003)
Skin Tone Index	-0.299		-0.283		-0.310	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,057	14,057	14,057	14,057	11,926	11,926
Panel B: Occupation in Bank Record						
Professional Occupation	0.069	0.065	0.008	0.015	0.075	0.069
	(0.012)	(0.012)	(0.007)	(0.007)	(0.015)	(0.014)
Service/Trades Occupation	0.050	0.035	-0.017	-0.001	0.043	0.037
	(0.008)	(0.008)	(0.004)	(0.004)	(0.008)	(0.008)
Skin Tone Index	-0.304		-0.282		-0.300	
	(0.004)		(0.003)		(0.012)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	10,459	10,459	10,459	10,459	9,276	9,276
Panel C: Writes Own Signature in Bank Record						
Depositor Signature	0.055	0.051	0.000	0.004	0.059	0.054
	(0.008)	(0.008)	(0.004)	(0.004)	(0.008)	(0.008)
Skin Tone Index	-0.295		-0.284		-0.318	
	(0.004)		(0.003)		(0.011)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	12,110	12,110	12,110	12,110	10,334	10,334

Notes: This table reports estimates similar to those in Table 3, but for depositor characteristics defined using the Bank's depositor record. Panel A reports effects of having a one standard deviation more "distinctively Black" name, based on the frequency of that name in the 1870 Census among people racialized as Black or Mulatto compared to those racialized as White. Panel B reports effects of having a professional occupation or service/trades occupation, relative to the omitted category of having a farmer/laborer occupation. Pancel C reports effects associated with the depositor having signed their name in the Bank record (as opposed to the Bank cashier signing the name and indicating "his/her mark.") All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 8. Differences in Wealth and Literacy by Skin Tone, Attenuated Within Census Race

			Within Census Race:			Excluding White:	
	Full Sample		Black	Mulatto	White	Race	Skin Tone
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Wealth ≥ $100							
Skin Tone Index	-0.122	-0.011	-0.036	-0.034	0.009	-0.071	-0.129
	(0.005)	(0.008)	(0.012)	(0.018)	(0.011)	(0.009)	(0.009)
Black		-0.383					
		(0.021)					
Mulatto		-0.258					
		(0.021)					
Number of Depositors	14,138	14,138	9,964	2,035	2,139	11,999	12,562
Panel B: Log Wealth							
Skin Tone Index	-0.532	-0.107	-0.085	-0.226	-0.080	-0.247	-0.492
	(0.019)	(0.027)	(0.028)	(0.058)	(0.044)	(0.028)	(0.030)
Black		-1.476					
		(0.077)					
Mulatto		-1.119					
		(0.076)					
Number of Depositors	14,138	14,138	9,964	2,035	2,139	11,999	12,562
Panel C: Literate							
Skin Tone Index	-0.171	-0.055	-0.061	-0.131	-0.076	-0.133	-0.202
	(0.005)	(0.008)	(0.014)	(0.020)	(0.010)	(0.011)	(0.010)
Black		-0.399					
		(0.021)					
Mulatto		-0.246					
		(0.021)					
Number of Depositors	13,029	13,029	9,448	1,829	1,752	11,277	11,790

Notes: Column 1 reports the unconditional relationship between the indicated outcome (in each Panel) and the skin tone index. Column 2 also includes whether the person is racialized as Black or racialized as Mulatto. Columns 3, 4, and 5 report separate estimates within the subsamples of depositors who are racialized as Black, Mulatto, or White. Column 6 excludes depositors with White race in the 1870 Census. Column 7 excludes depositors with white skin tone in the Freedman Bank records. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Table 9. Differences in Wealth and Literacy by Skin Tone, 2SLS with Multiple Measures

	OLS		2SLS	
	(1)	(2)	(3)	(4)
Panel A: Wealth ≥ $100				
Skin Tone Index	-0.130	-0.064	-0.124	-0.037
	(0.026)	(0.048)	(0.028)	(0.058)
Black		-0.221		-0.283
		(0.146)		(0.163)
Mulatto		-0.111		-0.162
		(0.142)		(0.153)
Number of Depositors	578	578	578	578
Panel B: Log Wealth				
Skin Tone Index	-0.510	-0.318	-0.539	-0.342
	(0.090)	(0.139)	(0.101)	(0.163)
Black		-0.705		-0.650
		(0.402)		(0.417)
Mulatto		-0.481		-0.435
		(0.387)		(0.397)
Number of Depositors	578	578	578	578
Panel C: Literate				
Skin Tone Index	-0.170	-0.135	-0.180	-0.153
	(0.030)	(0.049)	(0.033)	(0.061)
Black		-0.108		-0.069
		(0.140)		(0.163)
Mulatto		0.042		0.076
		(0.135)		(0.151)
Number of Depositors	542	542	542	542
First Stage:				
Duplicate Skin Tone Index			0.924	0.751
			(0.024)	(0.039)
F-Statistic on Instrument			1541	373

Notes: Columns 1 and 2 replicate Table 7, but restricting the sample to depositors whose skin tone is recorded twice from opening multiple accounts with the Bank at different dates. Columns 3 and 4 are two-stage least squares estimates corresponding to Columns 1 and 2, but instrumenting for the primary value of the skin tone index (from the record with more biographical information) using the secondary value of the skin tone index. The first-stage coefficients are reported below, along with the F-statistic of the excluded instrument. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Appendix for:

The Social Construction of Race during Reconstruction

Anjali Adukia
University of Chicago

Richard Hornbeck
University of Chicago

Daniel Keniston
Louisiana State University

Benjamin Lualdi
University of Chicago

June 2025

A Linking Freedman Bank Depositor Records to the 1870 Census: Iterative Hand-Linking and Machine Learning Model Details

This section provides further details on our process for linking the Freedman Bank depositor records to the 1870 Census. In particular, we include details on the variables used in estimating the random forest linking model. We use the model to iterate on the hand-links, but we ultimately hand-link all records.

To begin the process, in a "blocking" stage, we generate up to 20 candidate matches in the 1870 Census for each of the 44,077 linkable depositors in the Freedman Bank depositor records. A linkable record has the depositor name, age, and birth place (state or country).

We separate the 44,077 linkable depositors into two groups: 35,958 adults and 8,119 children. We define a depositor as a child when their age in the depositor record is younger than 18 and they have no spouse or children in their depositor record.This distinction between adults and children determines the family information shown when hand-linking the records: for children, we display the names of their parents and siblings; for adults, we display the names of their spouse and children.

The blocking code provides 861,813 "potential matches" for the 44,077 depositors, for an average of 19.55 potential matches per linkable depositor.

We send these potential matches to our data-linking team, who use their judgment to determine the appropriate links given the provided information (depositor name, age, complexion/race, and family member names). Each depositor was hand-linked by two members of our data-linking team, with a third person resolving any differences in linking decisions.

The data-linking team determines for each "potential match" one of three categories of link:

- **Type 0**: If there is no likely match, then the team member enters "0" in all the rows corresponding to this depositor.
- **Type 1**: If there is one likely match, then the team member enters "1" in the row for that matched person in the 1870 Census and enters "0" for each other potential match.
- **Type 3**: If there are multiple candidates that could be a possible match, then our team member enters "3" in those rows and enters "0" elsewhere. For this paper, we exclude these one-to-many matches and focus only on the unique matches, though it is relevant that they had the option of indicating multiple matches.

After hand-linking all 44,077 depositor records, we construct two random forest models (one for adults and one for children) to help assess the potential quality of links made. We use

these assessments to revisit potentially bad matches (e.g., a Type 1 that should be Type 0) and revisit potentially missed matches (e.g., a Type 0 that should be a Type 1), as described in the main text. As a consequence, we re-handchecked 4,357 adult links and 815 child links (out of 35,958 total adult links and 8,119 total child links). We can also then report robustness to excluding hand-links below particular predicted thresholds, after re-estimating the model with the updated hand-links.

A.1 Defining Machine Learning Model Variables

For each random forest model, the dependent variable ("true match probability") is defined as: 0 for potential matches that are assigned a "0"; 1 for potential matches that are assigned a "1"; and $1/K$ for each potential match assigned a "3," where the depositor had $K \geq 2$ type 3 matches with the 1870 Census IDs.

We then create predictors for the random forest models, based flexible on the characteristics of the people in the depositor records and the 1870 Census. The random forest model for adults contains 40 predictors and the model for children has 46 predictors, where the model can iteratively determine which predictors to emphasize. For each pair of people (one from the depositor records and the other from the 1870 Census), the predictors are as follows:

Depositor String Similarity Variables

Variable(s)	Description
jw_first, jw_last	One minus the Jaro-Winkler distances between the first/last names of the depositor and potential Census match.
L1_first, L1_last	An indicator equal to one if the first letter of the first/last names are the same
inits12_first	An indicator equal to one if either of two first names only has one letter.
inits2_first	An indicator equal to one if both of two first names only have one letter.
namefrst_nickname_jw	One minus the smallest Jaro-Winkler distance between a first name and the other first name's corresponding nickname.
first_common, last_common	A commonness score of the depositor's first/last name.
nys_first, nys_last	Indicators equal to one if the phonetic spelling between the first/last names is the same.

Depositor Age and Complexion/Race

Variable(s)	Description
birthyear_diff	Difference in birth year.
race_1_blk, race_1_wht	Indicators equal to one if the person in the depositor records has darker than "very light brown" complexion in the depositor records or whether the person has "white" complexion, where the omitted category is what we define as ambiguous complexion (between "very light brown" and "fair").
race_wht_blk	A dummy variable equal to 1 if one person has complexion darker than "very light brown" in the depositor records (from Table 1) and is White in the Census, or if one person has "white" complexion in the depositor records and is Black or Mulatto in the Census.

Spouse/Parents String Similarity Variables

Variable(s)	Description
L1_spouse, L1_mother, L1_father	An indicator equal to one if the initial letters of the first/last names or the initial letters of the spouse or parents' names are the same.
jw_spouse, jw_mother, jw_father	One minus the Jaro-Winkler distances between the spouses'/parents' names.
jw_parents_mean	The average of jw_mother and jw_father.
spouse_common, mother_common, father_common	A commonness score of the depositor's spouse's/parents' first names.
nys_spouse, nys_mother, nys_father	Indicators equal to one if the phonetic spelling between the spouses'/parents' names is the same.
spouse_nickname_jw, mother_nickname_jw, father_nickname_jw	One minus the Jaro-Winkler distance between a spouse's/parent's name and the other spouse's/parent's corresponding nickname.

Spouse/Parents String Similarity Missing Variables

Variable(s)	Description
missing12_spouse, missing12_mother, missing12_father	An indicator equal to one if spouse/parent names are missing in either the depositor record or census record.
missing2_spouse, missing12_mother, missing12_father	An indicator equal to one if spouse/parent names are missing in both the depositor record and census record.

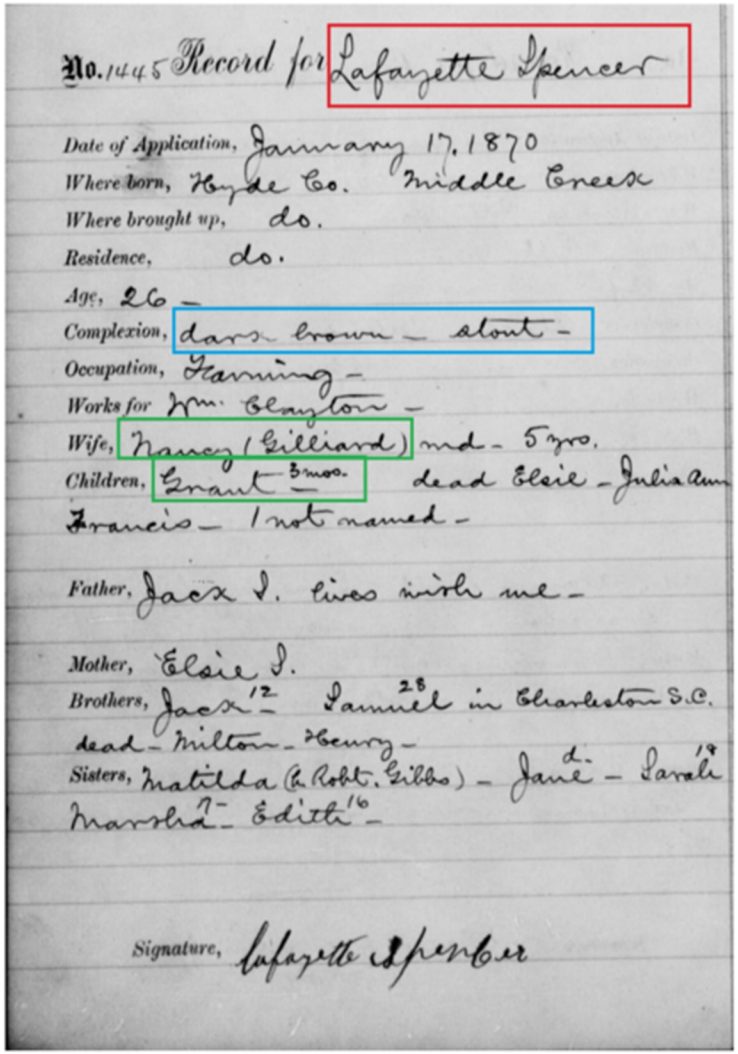
Children/Siblings String Similarity Variables

Variable(s)	Description
kid_nickname_jw_max, sibling_nickname_jw_max	One minus the minimum Jaro-Winkler distance between a child/sibling's name and another child/sibling's corresponding nickname.
jw_kids_max, jw_kids_mean, jw_siblings_max, jw_siblings_mean	One minus the minimum/mean of the Jaro-Winkler distances between the children/siblings' names.
jw_rsc_kids_max, jw_rsc_kids_mean, jw_rsc_siblings_max, jw_rsc_siblings_mean	One minus the minimum/mean of the Jaro-Winkler distances between the children/siblings' names, re-scaled by the kids' names' commonness.
nys_kids_any, nys_kids_mean, nys_siblings_any, nys_siblings_mean	Minimum/mean of the phonetic distances between the children/siblings' names.
nys_rsc_kids_any, nys_rsc_kids_mean, nys_rsc_siblings_any, nys_rsc_siblings_mean	Minimum/mean of the phonetic distances between the children/siblings' names, re-scaled by the children/siblings' names' commonness.

Children/Siblings String Similarity Missing Variables

Variable(s)	Description
missing12_kids, missing12_siblings	An indicator equal to one if children/siblings names are missing in either the depositor record or census record.
missing2_kids, missing12_siblings	An indicator equal to one if children/siblings names are missing in both the depositor record and census record.
nys_kids_any_missing, nys_kids_mean_missing, nys_siblings_any_missing, nys_siblings_mean_missing	Indicator equal to one if the corresponding variable is missing.
nys_rsc_kids_any_missing, nys_rsc_kids_mean_missing, nys_rsc_siblings_any_missing, nys_rsc_siblings_mean_missing	Indicator equal to one if the corresponding variable is missing.
jw_kids_max_missing, jw_siblings_max_missing, jw_rsc_kids_max_missing, jw_rsc_siblings_max_missing	Indicator equal to one if the corresponding variable is missing.

Appendix Figure 1. Freedman Bank Depositor Record for Lafayette Spencer



No. 1445 Record for Lafayette Spencer

Date of Application, January 17, 1870
Where born, Hyde Co. Middle Creek
Where brought up, do.
Residence, do.
Age, 26 –
Complexion, dark brown – stout –
Occupation, Farming –
Works for Wm. Clayton –
Wife, Nancy (Gilliard) md – 5 yrs.
Children, Grant 3 mos. dead Elsie – Julia Ann
Francis – 1 not named –

Father, Jack S. lives with me –

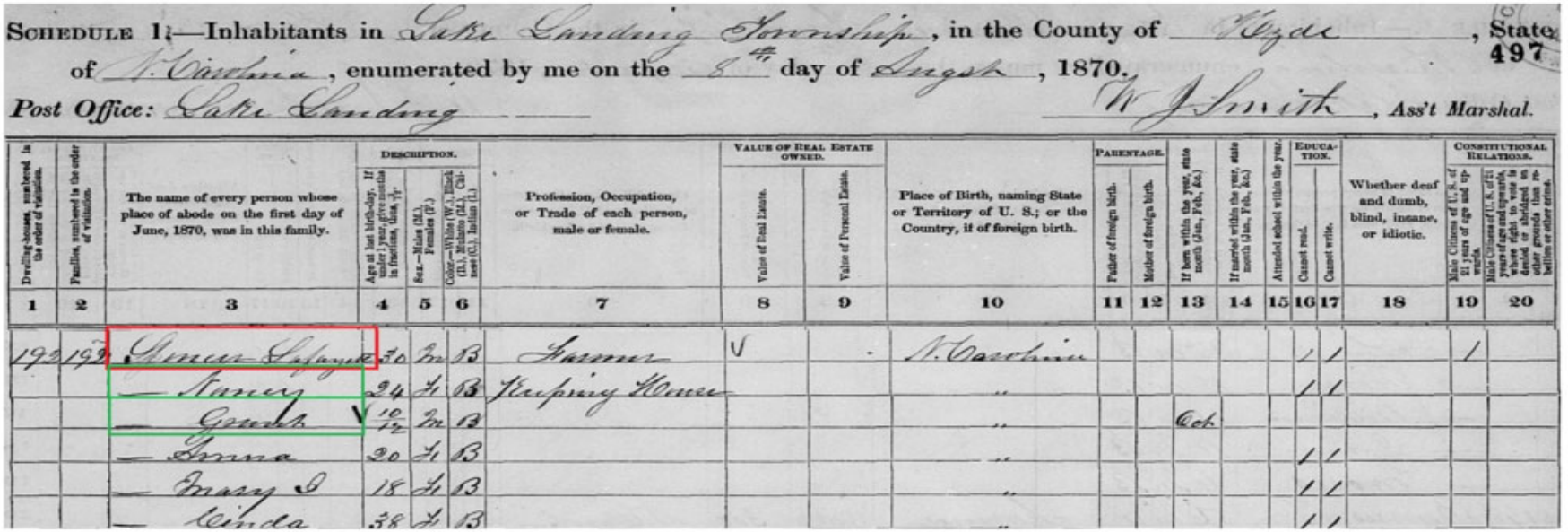
Mother, Elsie S.
Brothers, Jack 12 – Samuel 28 in Charleston S.C.
dead – Milton – Henry –
Sisters, Matilda (m. Robt. Gibbs) – Jane d. – Sarah 18
Marsha 17 – Edith 16 –

Signature, Lafayette Spencer

No. 1445 Record for	Lafayette Spencer
Date of Application	January 17, 1870
Where born	Hyde County, Middle Creek
Where brought up	"
Residence	"
Age	26 years old
Complexion	Dark brown, stout
Occupation	Farming
Works for	William Clayton
Wife	Nancy (Gilliard), married 5 yrs
Children	Grant 3 months; dead: Elsie, Julia Ann,
	Francis, 1 not named
Father	Jack S. lives with me
Mother	Elsie S.
Brothers	Jack 12, Samuel 28 in Charleston, S.C.
	dead: Milton, Henry
Sisters	Matilda (m. Robert Gibbs), Jane (d.), Sarah (18)
	Martha (17), Edith (16)

Notes: The image on the left is the depositor record for Lafayette Spencer, from an account opened on January 17, 1870 with the New Bern branch of the Freedman Bank. On the right is a typed transcription. Note that Hyde County is near New Bern (Craven County), but is not a neighboring county.

Appendix Figure 2. 1870 Census Record for Lafayette Spencer



SCHEDULE 1.—Inhabitants in Lake Landing Township, in the County of Hyde, State of N. Carolina, enumerated by me on the 8th day of August, 1870. 497

Post Office: Lake Landing — W. J. Smith, Ass't Marshal.

Dwelling-houses, numbered in the order of visitation.	Families, numbered in the order of visitation.	The name of every person whose place of abode on the first day of June, 1870, was in this family.	Description: Age at last birth-day. If under 1 year, give months in fractions, thus, 7/12.	Description: Sex.—Males (M.), Females (F.)	Description: Color—White (W.), Black (B.), Mulatto (M.), Chinese (C.), Indian (I.)	Profession, Occupation, or Trade of each person, male or female.	Value of Real Estate owned.	Value of Personal Estate.	Place of Birth, naming State or Territory of U. S.; or the Country, if of foreign birth.	Parentage: Father of foreign birth.	Parentage: Mother of foreign birth.	If born within the year, state month (Jan., Feb., &c.)	If married within the year, state month (Jan., Feb., &c.)	Attended school within the year.	Education: Cannot read.	Education: Cannot write.	Whether deaf and dumb, blind, insane, or idiotic.	Constitutional Relations: Male Citizens of U.S. of 21 years of age and upwards.	Constitutional Relations: Male Citizens of U.S. of 21 years of age and upwards, whose rights to vote is denied or abridged on other grounds than rebellion or other crime.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
193	193	Spencer Lafayette	30	M	B	Farmer	0	0	N. Carolina							✓		✓	
		" Nancy	24	F	B	Keeping House	0	0	"							✓		✓	
		" Grant	0	M	B		0	0	"			Oct							
		" Arrna	20	F	B		0	0	"							✓		✓	
		" Mary L	10	F	B		0	0	"							✓		✓	
		" Cinda	38	F	B		0	0	"							✓		✓	

Notes: The image above is the 1870 Census record for Lafayette Spencer, with a typed transcription below.

Appendix Table 1. Tabulation of Bank Depositor Complexion Categories by Branch

	Freedman Bank Branch:																										
Complexion:	ATL	AUG	BAL	BEA	CHA	CMS	HUN	LEX	LIT	LOU	LYN	MEM	MOB	NAS	NAT	NOR	NWB	NWL	NYC	RIC	SAV	SHR	STL	TAL	VIC	WDC	WIL
Black	312	372	55	137	379	2	110	94	13	14	0	175	39	6	43	189	180	185	58	309	384	48	2	41	430	4	25
Colored	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	90	2	0
Dark	5	0	27	2	22	38	18	3	1	11	1	77	69	82	4	78	33	10	1	97	554	67	3	105	5	253	67
Very Dark	7	0	0	0	1	3	0	1	2	0	0	1	0	4	0	0	1	0	0	16	0	0	1	0	0	0	12
Dark Black	0	1	0	0	1	0	0	26	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Dark Brown	88	105	14	88	393	20	10	30	38	34	0	95	23	117	3	0	52	9	80	232	68	7	0	22	3	9	15
Very Dark Brown	51	0	0	0	0	0	1	1	1	0	0	1	0	2	0	0	0	0	0	13	0	0	0	0	0	0	2
Med. Dark Brown	0	0	0	0	0	4	2	2	0	0	0	4	0	3	0	1	1	0	0	2	0	0	0	0	0	0	0
Medium Black	0	0	0	0	0	0	1	87	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Medium Brown	1	0	0	0	0	23	26	15	1	0	0	2	0	8	0	0	16	2	0	1	0	0	0	0	0	1	2
Brown	183	75	62	152	286	10	134	14	60	198	3	180	73	117	9	3	78	18	128	199	324	43	0	56	304	210	48
Nearly Black	55	108	0	0	0	0	0	4	0	0	0	4	0	0	0	0	2	0	0	8	2	0	0	0	0	0	0
Light Black	1	0	0	0	3	0	0	26	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dark Mulatto	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Very Light Brown	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	1	1
Light Colored	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Griff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38	0	0	0	0	6	0	0	1	0
Yellow	4	53	23	1	1	9	71	1	4	2	0	28	1	18	13	16	0	73	1	2	9	1	0	1	62	45	2
Light Brown	30	12	2	9	47	19	18	8	20	55	0	39	3	42	7	1	4	2	77	70	12	11	0	16	6	12	10
Mulatto	0	51	1	0	0	5	0	0	0	43	0	1	1	0	1	0	1	5	0	3	6	0	1	6	2	8	0
Light	4	22	1	6	139	18	2	12	2	2	0	52	8	5	2	11	36	14	35	4	247	30	0	8	13	28	14
Bright	4	7	5	0	0	3	1	3	0	6	0	11	0	15	0	3	3	1	0	1	0	0	0	17	0	3	0
Very Light	1	0	0	0	10	0	0	0	5	0	0	1	0	2	0	2	2	1	12	7	21	0	0	1	0	1	1
Nearly White	11	9	0	1	6	0	3	1	2	0	0	2	0	0	0	4	2	0	5	4	2	0	0	0	0	1	0
Olive	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	0	1	0
Fair	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0
White	53	26	59	5	55	0	14	19	47	16	0	6	0	10	10	14	41	65	944	11	76	5	0	6	51	26	17

Notes: For each Freedman Bank branch, the columns list their number of depositors by detailed skin tone category. The branches are ordered as follows: Atlanta (GA), Augusta (GA), Baltimore (MD), Beaufort (SC), Charleston (SC), Columbus (MS), Hunstville (AL), Lexington (KY), Little Rock (AR), Louisville (KY), Lynchburg (VA), Memphis (TN), Mobile (AL), Nashville (TN), Natchez (MS), Norfolk (VA), New Bern (NC), New Orleans (LA), New York (NY), Richmond (VA), Savannah (GA), Shreveport (LA), St. Louis (MO), Tallahassee (FL), Vicksburg (MS), Washington (DC), Wilmington (NC). The skin tone categories are sorted in descending order of the value of the "skin tone index" defined in Table 1.

Appendix Table 2. Effects of SES on Census Racial Assignment, Robustness to Link Restrictions

	Baseline Handlinks	Exclude ML Prob < 0.10	Exclude ML Prob < 0.50	≥ 1 Family Match	≥ 2 Family Match	Exact Name & Birth Year ±1
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White or Mulatto vs. Black						
Wealth ≥ $100	0.108	0.099	0.077	0.101	0.093	0.100
	(0.007)	(0.008)	(0.009)	(0.009)	(0.012)	(0.014)
Log Wealth	0.041	0.037	0.029	0.038	0.033	0.032
	(0.002)	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)
Literate	0.122	0.110	0.094	0.121	0.118	0.093
	(0.008)	(0.008)	(0.010)	(0.011)	(0.014)	(0.015)
Number of Depositors	14,138	12,459	8,598	8,335	4,974	3,568
Panel B: White vs. Mulatto or Black						
Wealth ≥ $100	0.068	0.056	0.028	0.062	0.047	0.047
	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)	(0.009)
Log Wealth	0.030	0.025	0.013	0.026	0.021	0.018
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Literate	0.067	0.051	0.028	0.060	0.052	0.042
	(0.005)	(0.004)	(0.004)	(0.007)	(0.008)	(0.008)
Number of Depositors	14,138	12,459	8,598	8,335	4,974	3,568
Panel C: Mulatto vs. Black						
Wealth ≥ $100	0.085	0.081	0.074	0.079	0.083	0.099
	(0.009)	(0.009)	(0.011)	(0.011)	(0.014)	(0.018)
Log Wealth	0.043	0.041	0.036	0.041	0.039	0.048
	(0.004)	(0.004)	(0.004)	(0.005)	(0.006)	(0.008)
Literate	0.092	0.090	0.085	0.095	0.097	0.082
	(0.008)	(0.009)	(0.010)	(0.011)	(0.014)	(0.016)
Number of Depositors	11,999	10,769	7,561	6,957	4,025	2,888

Notes: Column 1 reports our baseline estimates from Table 3 (in Columns 2, 4, and 6 of Panels A, B, and C). Each coefficient is from a separate regression and, as before, the sample size is smaller for Literate. In Column 2 and 3, we exclude links that the machine-learning model assigns a probability below 0.10 or 0.50. In Column 4, we restrict the sample to depositors with at least one other household member whose name also matches between the depositor record and 1870 Census (e.g., a spouse or child for adult depositors, and a parent or sibling for child depositors). In Column 5, we restrict the sample to depositors with at least two other household members whose name matches. Within our hand-linked households, for this sample restriction we define a household member name "match" as having Jaro-Winkler string distance below 0.30 (searching within family members only). In Column 6, we limit the hand-linked records to those with an exact name match and an age difference that is one year or less. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Appendix Table 3. Census Racial Assignment by Depositor Characteristics in Bank Records, Robustness to Link Restrictions

	Baseline Handlinks	Exclude ML Prob < 0.10	Exclude ML Prob < 0.50	≥ 1 Family Match	≥ 2 Family Match	Exact Name & Birth Year ±1
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White or Mulatto vs. Black						
"Distinctively Black" Name	-0.019	-0.017	-0.015	-0.018	-0.019	-0.035
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.006)
Professional Occupation	0.065	0.060	0.064	0.067	0.077	0.098
	(0.012)	(0.013)	(0.015)	(0.017)	(0.022)	(0.024)
Service/Trade Occupation	0.035	0.041	0.051	0.049	0.061	0.056
	(0.008)	(0.008)	(0.009)	(0.011)	(0.015)	(0.016)
Own Signature	0.051	0.056	0.058	0.052	0.066	0.066
	(0.008)	(0.008)	(0.009)	(0.010)	(0.013)	(0.015)
Number of Depositors	14,138	12,459	8,598	8,335	4,974	3,568
Panel B: White vs. Mulatto or Black						
"Distinctively Black" Name	-0.009	-0.006	-0.002	-0.008	-0.009	-0.009
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)
Professional Occupation	0.015	0.017	0.018	0.015	0.021	0.030
	(0.007)	(0.007)	(0.008)	(0.010)	(0.014)	(0.014)
Service/Trade Occupation	-0.001	0.004	0.003	-0.002	-0.001	-0.002
	(0.004)	(0.003)	(0.003)	(0.005)	(0.007)	(0.008)
Own Signature	0.004	0.002	0.000	-0.001	0.004	0.013
	(0.004)	(0.004)	(0.004)	(0.005)	(0.007)	(0.008)
Number of Depositors	14,138	12,459	8,598	8,335	4,974	3,568
Panel C: Mulatto vs. Black						
"Distinctively Black" Name	-0.013	-0.013	-0.014	-0.013	-0.013	-0.030
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)
Professional Occupation	0.069	0.057	0.061	0.067	0.072	0.103
	(0.014)	(0.015)	(0.018)	(0.020)	(0.027)	(0.030)
Service/Trade Occupation	0.037	0.040	0.051	0.053	0.068	0.057
	(0.008)	(0.008)	(0.010)	(0.011)	(0.015)	(0.017)
Own Signature	0.054	0.059	0.062	0.061	0.076	0.067
	(0.008)	(0.008)	(0.010)	(0.011)	(0.014)	(0.016)
Number of Depositors	11,999	10,769	7,561	6,957	4,025	2,888

Notes: Column 1 reports our estimates from Table 6 (in Columns 2, 4, and 6 of Panels A, B, and C). Columns 2 to 6 report estimates for restricted samples, as described in Appendix Table 2 (that correspond to our baseline estimates from Table 3). In Columns 2 and 3, we exclude links that the machine-learning model assigns a probability below 0.10 or 0.50. In Column 4, we restrict the sample to depositors with at least one other household member whose name also matches between the depositor record and 1870 Census (e.g., a spouse or child for adult depositors, and a parent or sibling for child depositors). In Column 5, we restrict the sample to depositors with at least two other household members whose name matches. Within our hand-linked households, for this sample restriction we define a household member name "match" as having Jaro-Winkler string distance below 0.30 (searching within family members only). In Column 6, we limit the hand-linked records to those with an exact name match and an age difference that is one year or less. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Appendix Table 4. Effects of SES on Census Racial Assignment, Restricted Samples by Location

	Baseline Handlinks	In Birth State	Outside Birth State	In Branch or Border County	Exclude NYC Branch	Exclude Foreign-born
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White or Mulatto vs. Black						
Wealth ≥ $100	0.108	0.112	0.101	0.063	0.117	0.114
	(0.007)	(0.009)	(0.012)	(0.009)	(0.008)	(0.008)
Log Wealth	0.041	0.043	0.036	0.025	0.051	0.045
	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)	(0.002)
Literate	0.122	0.115	0.142	0.093	0.120	0.124
	(0.008)	(0.009)	(0.015)	(0.009)	(0.008)	(0.008)
Number of Depositors	14,138	10,254	3,884	8,827	12,797	13,659
Panel B: White vs. Mulatto or Black						
Wealth ≥ $100	0.068	0.071	0.060	0.015	0.074	0.072
	(0.005)	(0.006)	(0.008)	(0.004)	(0.005)	(0.005)
Log Wealth	0.030	0.033	0.025	0.009	0.037	0.033
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
Literate	0.067	0.058	0.091	0.023	0.065	0.067
	(0.005)	(0.005)	(0.010)	(0.004)	(0.005)	(0.005)
Number of Depositors	14,138	10,254	3,884	8,827	12,797	13,659
Panel C: Mulatto vs. Black						
Wealth ≥ $100	0.085	0.084	0.088	0.067	0.084	0.085
	(0.009)	(0.010)	(0.016)	(0.010)	(0.009)	(0.009)
Log Wealth	0.043	0.042	0.046	0.034	0.043	0.043
	(0.004)	(0.004)	(0.008)	(0.004)	(0.004)	(0.004)
Literate	0.092	0.088	0.104	0.089	0.089	0.092
	(0.008)	(0.009)	(0.017)	(0.010)	(0.008)	(0.008)
Number of Depositors	11,999	9,031	2,968	7,782	11,649	11,988

Notes: Column 1 reports our baseline estimates from Table 3 (in Columns 2, 4, and 6 of Panels A, B, and C). Column 2 limits the sample to depositors that are reported in the 1870 Census as living in their birth state, and Column 3 limits the sample to depositors that are reported in the 1870 Census as living outside their birth state. Column 4 limits the sample to depositors that are in the same county or neighboring county in the 1870 Census as the Freedman Bank branch where they opened their account (between 1866 and 1874). Column 5 excludes all depositors associated with the Freedman Bank branch in New York City, which had the largest share of white depositors (and foreign-born depositors). Column 6 excludes all foreign-born depositors. All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Appendix Table 5. Effects of SES on Census Racial Assignment, Robustness to Alternative Samples

	Baseline Handlinks	No "Racial" Categories	Household Head Only	Only Women	Only Children	Only Wealth ≥ $100
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White or Mulatto vs. Black						
Wealth ≥ $100	0.108	0.147	0.089	0.123	0.121	-
	(0.007)	(0.011)	(0.010)	(0.016)	(0.013)	
Log Wealth	0.041	0.066	0.036	0.044	0.042	0.041
	(0.002)	(0.004)	(0.003)	(0.005)	(0.004)	(0.004)
Literate	0.122	0.157	0.118	0.135	0.114	0.166
	(0.008)	(0.010)	(0.010)	(0.016)	(0.016)	(0.016)
Number of Depositors	14,138	8,726	7,699	3,952	3,852	3,843
Panel B: White vs. Mulatto or Black						
Wealth ≥ $100	0.068	0.099	0.048	0.090	0.086	-
	(0.005)	(0.007)	(0.006)	(0.011)	(0.009)	
Log Wealth	0.030	0.050	0.023	0.037	0.036	0.037
	(0.002)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
Literate	0.067	0.084	0.067	0.093	0.060	0.115
	(0.005)	(0.006)	(0.006)	(0.011)	(0.010)	(0.012)
Number of Depositors	14,138	8,726	7,699	3,952	3,852	3,843
Panel C: Mulatto vs. Black						
Wealth ≥ $100	0.085	0.095	0.070	0.089	0.100	-
	(0.009)	(0.011)	(0.011)	(0.019)	(0.018)	
Log Wealth	0.043	0.047	0.036	0.040	0.053	0.049
	(0.004)	(0.005)	(0.005)	(0.007)	(0.008)	(0.008)
Literate	0.092	0.116	0.086	0.095	0.091	0.127
	(0.008)	(0.011)	(0.010)	(0.017)	(0.017)	(0.019)
Number of Depositors	11,999	8,189	6,899	3,387	2,806	2,574

Notes: Column 1 reports our baseline estimates from Table 3 (in Columns 2, 3, and 4 of Panels A, B, and C). Each coefficient is from a separate regression and, as before, the sample size is smaller for Literate. Column 2 omits the more "racial" categories of skin tone: (black, nearly black, colored, mulatto, white, nearly white). Column 3 restricts the sample to Household Heads only, Column 4 restricts the sample to women only, and Column 5 restricts the sample to children only (ages 17 and younger). Column 6 restricts the sample to households with measured wealth (≥ $100). All specifications include Freedman Bank branch fixed effects, and robust standard errors are reported in parentheses.

Appendix Table 6. Census Racial Assignment by Literacy of Household Head and Depositor

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Household Head Literacy						
Household Head Literacy	0.131	0.131	0.086	0.087	0.096	0.092
	(0.008)	(0.008)	(0.005)	(0.005)	(0.008)	(0.008)
Skin Tone Index	-0.279		-0.269		-0.303	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel B: Depositor Literacy						
Depositor Literacy	0.124	0.122	0.065	0.067	0.094	0.092
	(0.008)	(0.008)	(0.005)	(0.005)	(0.008)	(0.008)
Skin Tone Index	-0.283		-0.271		-0.301	
	(0.004)		(0.003)		(0.011)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	13,029	13,029	13,029	13,029	11,277	11,277
Panel C: Household Head and Depositor Literacy						
Household Head Literacy	0.085	0.087	0.079	0.077	0.055	0.050
	(0.013)	(0.013)	(0.007)	(0.007)	(0.014)	(0.014)
Depositor Literacy	0.062	0.058	0.007	0.010	0.055	0.056
	(0.012)	(0.012)	(0.006)	(0.006)	(0.013)	(0.013)
Skin Tone Index	-0.279		-0.267		-0.300	
	(0.004)		(0.003)		(0.011)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	13,029	13,029	13,029	13,029	11,277	11,277

Notes: This table reports estimates that correspond to depositor literacy in Table 3, but for the literacy of the Household Head (in Panel A) and for the jointly estimated effects of Household Head literacy and depositor literacy (in Panel C).

Appendix Table 7. Census Racial Assignment by Measured Personal Property and Real Estate

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Measured Real Estate Property						
Real Estate Value	0.140	0.136	0.089	0.094	0.121	0.117
	(0.010)	(0.009)	(0.007)	(0.007)	(0.013)	(0.012)
Skin Tone Index	-0.289		-0.276		-0.306	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel B: Measured Personal Property						
Personal Property	0.103	0.105	0.084	0.083	0.077	0.074
	(0.008)	(0.008)	(0.006)	(0.006)	(0.010)	(0.010)
Skin Tone Index	-0.290		-0.274		-0.309	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel C: Measured Real Estate and Personal Property						
Real Estate Value	0.113	0.107	0.063	0.068	0.103	0.100
	(0.010)	(0.010)	(0.007)	(0.007)	(0.013)	(0.013)
Personal Property	0.068	0.072	0.065	0.062	0.052	0.050
	(0.009)	(0.008)	(0.005)	(0.005)	(0.010)	(0.010)
Skin Tone Index	-0.284		-0.271		-0.304	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999

Notes: This table reports estimates that correspond to measured wealth in Table 3, but separating total household wealth into real estate wealth (in Panel A), personal property wealth (in Panel B), and the jointly estimated effects (in Panel C).

Appendix Table 8. Census Racial Assignment by Log Personal Property and Real Estate

	White or Mulatto vs. Black		White vs. Mulatto or Black		Mulatto vs. Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Log Real Estate Wealth						
Log Real Estate Wealth	0.038	0.038	0.028	0.028	0.048	0.046
	(0.003)	(0.002)	(0.002)	(0.002)	(0.005)	(0.005)
Skin Tone Index	-0.287		-0.272		-0.303	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel B: Log Personal Property						
Log Personal Wealth	0.042	0.046	0.047	0.044	0.047	0.046
	(0.003)	(0.003)	(0.003)	(0.003)	(0.006)	(0.006)
Skin Tone Index	-0.287		-0.267		-0.308	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999
Panel C: Log Real Estate and Personal Property						
Log Real Estate Wealth	0.029	0.027	0.014	0.015	0.040	0.039
	(0.003)	(0.003)	(0.002)	(0.002)	(0.005)	(0.005)
Log Personal Wealth	0.024	0.028	0.038	0.034	0.028	0.028
	(0.004)	(0.004)	(0.003)	(0.003)	(0.006)	(0.006)
Skin Tone Index	-0.282		-0.264		-0.302	
	(0.003)		(0.003)		(0.010)	
Skin Tone Fixed Effects		Yes		Yes		Yes
Number of Depositors	14,138	14,138	14,138	14,138	11,999	11,999

Notes: This table reports estimates that correspond to log wealth in Table 3, but separating total household wealth into real estate wealth (in Panel A), personal property wealth (in Panel B), and the jointly estimated effects (in Panel C). For households with less than $100 in measured wealth, we continue to assign a value of $45.25 before taking the natural log (based on the average among the 2% of households nationwide for which Census enumerators did report wealth between $0 and $100).

Appendix Table 9. Effects of SES on Census Racial Assignment, Alternative Specifications

			Additional controls for:			
	Baseline Handlinks	No Branch FE	Branch by Acc. Open Year FE	Emancipated by 1860	Age and Gender	County FE
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: White or Mulatto vs. Black						
Wealth ≥ $100	0.108	0.102	0.108	0.105	0.111	0.102
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.008)
Log Wealth	0.041	0.040	0.041	0.040	0.042	0.037
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Literate	0.122	0.124	0.121	0.119	0.123	0.118
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Number of Depositors	14,138	14,138	14,138	14,138	14,138	14,138
Panel B: White vs. Mulatto or Black						
Wealth ≥ $100	0.068	0.066	0.069	0.071	0.069	0.045
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)
Log Wealth	0.030	0.030	0.030	0.031	0.031	0.022
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Literate	0.067	0.069	0.067	0.069	0.068	0.055
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)
Number of Depositors	14,138	14,138	14,138	14,138	14,138	14,138
Panel C: Mulatto vs. Black						
Wealth ≥ $100	0.085	0.078	0.084	0.079	0.088	0.091
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Log Wealth	0.043	0.041	0.043	0.040	0.044	0.043
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Literate	0.092	0.092	0.091	0.087	0.092	0.097
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Number of Depositors	11,999	11,999	11,999	11,999	11,999	11,999

Notes: Column 1 reports our estimates from Table 3 (in Columns 2, 4, and 6 of Panels A, B, and C). Columns 2 to 6 report estimates for alternative specifications with different controls. Column 2 omits the branch fixed effects. Column 3 includes fixed effects for each branch interacted with the bank account opening year. Columns 4 to 6 are the same as our baseline specification, except for the addition of: an indicator variable for whether the depositor was free in 1860 (restricted to those racialized as Black or Mulatto in the 1870 Census); an indicator for gender and controls for age and age-squared; and fixed effects for the depositor's county in the 1870 Census. All specifications include Freedman Bank branch fixed effects (except Column 2), and robust standard errors are reported in parentheses.